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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2019

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from _____ to _____

Commission File Number 001-37687

EDITAS MEDICINE, INC.

(Exact name of registrant as specified in its charter)

Delaware	**46-4097528**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
11 Hurley Street **Cambridge, Massachusetts**	**02141**
(Address of principal executive offices)	**(Zip Code)**

(617) 401-9000
(Registrant's telephone number, including area code)
Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Trading Symbol(s)**	**Name of each exchange on which registered**
Common Stock, $0.0001 par value per share	**EDIT**	**The Nasdaq Stock Market LLC**

Securities registered pursuant to Section 12(g) of the Act:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

As of June 28, 2019, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's Common Stock held by non-affiliates of the registrant was approximately $1,222,233,659 based upon the closing price of the registrant's Common Stock on June 28, 2019.

The number of shares of the registrant's Common Stock outstanding as of February 14, 2020 was 54,875,392.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its 2020 Annual Meeting of Stockholders to be filed pursuant to Regulation 14A within 120 days of the end of the registrant's fiscal year ended December 31, 2019 are incorporated by reference into Part III of this Annual Report on Form 10-K to the extent stated herein.

Editas Medicine, Inc.
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References to Editas

Throughout this Annual Report on Form 10-K, the "Company," "Editas," "Editas Medicine," "we," "us," and "our," except where the context requires otherwise, refer to Editas Medicine, Inc. and its consolidated subsidiary, and "our board of directors" refers to the board of directors of Editas Medicine, Inc.

Special Note Regarding Forward-Looking Statements and Industry Data

This Annual Report on Form 10-K contains forward-looking statements regarding, among other things, our future discovery and development efforts, our future operating results and financial position, our business strategy, and other objectives for our operations. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. There are a number of important risks and uncertainties that could cause our actual results to differ materially from those indicated by forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Annual Report on Form 10-K, particularly in the section entitled "Risk Factors" in Part I that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make.

You should read this Annual Report on Form 10-K and the documents that we have filed as exhibits to this Annual Report on Form 10-K completely and with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements contained in this Annual Report on Form 10-K are made as of the date of this Annual Report on Form 10-K, and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

This Annual Report on Form 10-K includes statistical and other industry and market data, which we obtained from our own internal estimates and research, as well as from industry and general publications and research, surveys, and studies conducted by third parties. Industry publications, studies, and surveys generally state that they have been obtained from sources believed to be reliable, although they do not guarantee the accuracy or completeness of such information. While we believe that each of these studies and publications is reliable, we have not independently verified market and industry data from third-party sources. While we believe our internal company research is reliable and the market definitions are appropriate, neither such research nor these definitions have been verified by any independent source.

PART I

Item 1. Business

We are a leading, clinical stage genome editing company dedicated to developing potentially transformative genomic medicines to treat a broad range of serious diseases. The promise of genomic medicines is supported by the advancing knowledge of the human genome, and harnessing the progress in technologies for cell therapy, gene therapy, and, most recently, genome editing. We believe this progress sets the stage for us to create unprecedented medicines with the potential to have a durable benefit for patients. At Editas Medicine, our core capability in genome editing uses the technology known as CRISPR (clustered, regularly interspaced, short palindromic repeats) with which we can create molecules that efficiently and specifically edit DNA. Our mission is to translate the promise of genome editing into a broad class of differentiated, transformational medicines for diseases of high unmet need.

We have developed a proprietary genome editing platform based on CRISPR technology and we continue to expand its capabilities. CRISPR uses a protein-RNA complex composed of an enzyme, including either Cas9 (CRISPR associated protein 9) or Cas12a (CRISPR from *Prevotella* and *Francisella* 1, also known as Cpf1), bound to a guide RNA molecule designed to recognize a particular DNA sequence. Once the complex binds to the DNA sequence it was designed to recognize, the complex makes a specific cut in the DNA. We believe we are the only human genome editing company with a platform that includes CRISPR/Cas9, CRISPR/Cas12a, and engineered forms of both of these CRISPR systems. Because of the broad nature of this platform, we believe we can create genome editing molecules for over 95% of the human genome.

Our Strategy

Our product development strategy is to target diseases of high unmet need where we aim to make differentiated, transformational medicines using our gene editing platform. We are advancing both *in vivo* CRISPR medicines, in which the medicine is injected or infused into the patient to edit the cells inside their body, and engineered cell medicines, in which cells are edited with our technology and then administered to the patient. While our discovery efforts have ranged across several diseases and therapeutic areas, the two areas where our programs are more mature are ocular diseases and engineered cell medicines to treat hemoglobinopathies and cancer.

For our *in vivo* CRISPR medicines, we are leveraging an adeno-associated virus ("AAV")-mediated editing platform with our proprietary *Staphylococcus aureus* Cas9 ("SaCas9") to develop these medicines. In ocular diseases, our most advanced program is designed to address a specific genetic form of retinal degeneration called Leber congenital amaurosis 10 ("LCA10"), a disease for which we are not aware of any available therapies and only one other potential treatment in clinical trials in the United States and Europe. In mid-2019, we initiated a Phase 1/2 clinical trial for EDIT-101 (also known as AGN-151587), an experimental medicine to treat LCA10, pursuant to an investigational new drug application ("IND") that we filed in October 2018 and which was accepted by the United States Food and Drug Administration ("FDA") in November 2018. We and our partner Allergan Pharmaceuticals International Limited (together with its affiliates, "Allergan") began patient screening and expect to announce patient dosing by the end of the first quarter of 2020. We expect to enroll approximately 18 patients in the United States and Europe. In addition, we initiated a clinical natural history study in 2017 to evaluate the clinical course and characteristics of LCA10 more extensively.

We believe preclinical results to date with EDIT-101 validate our platform technology, including its potential application to other ocular diseases, such as Usher syndrome 2A ("USH2A") and autosomal dominant retinitis pigmentosa 4 ("adRP4"), as well as diseases of other organs and tissues. In 2019, we achieved *in vivo* preclinical proof of concept and declared a development candidate, referred to as EDIT-102, for USH2A. In 2019, we also advanced preclinical studies for our adRP4 program. We are leveraging our AAV-mediated editing platform and expertise in ocular therapies to pursue additional therapeutic areas to treat other organ and tissues that are accessible by AAV. For example, in 2019, we entered into a strategic research collaboration with Asklepios BioPharmaceutical, Inc., a fully integrated AAV gene therapy company ("AskBio"), to explore the use of our AAV-mediated editing platform to treat neurological diseases.

In addition to developing *in vivo* CRISPR medicines, the development of engineered cell medicines is a core part of our research effort and product pipeline. We believe that advances in genome editing will both improve the characteristics of current cellular medicines and also expand the universe of cellular medicines that can be developed. To this end, we have established capabilities to efficiently and specifically edit hematopoietic stem cells ("HSCs"), natural killer ("NK") cells and T cells, which we believe can lead to best-in-class medicines for hemoglobinopathies and cancer.

For our engineered cell medicines, our lead program is EDIT-301, an experimental medicine to treat sickle cell disease and beta-thalassemia. We have initiated IND-enabling studies for EDIT-301 and aim to file an IND for EDIT-301 for sickle cell disease by the end of 2020. The CRISPR nuclease used in our EDIT-301 program is a proprietary engineered form of Cas12a for which we have exclusively licensed the foundational intellectual property to develop and commercialize human therapeutics. We believe our editing approach, including targeting the *HBG1/2* gene and the use of Cas12a, differentiates us from other genome editing companies working on sickle cell disease and positions us to develop a potentially best-in-class medicine to treat sickle cell disease and beta-thalassemia.

We have also continued to develop our capabilities to generate cells from induced pluripotent stem cells ("iPSCs") and to edit cells obtained from healthy donors to develop engineered cell medicines to treat cancer. For example, in 2019, we advanced engineered iPSC-derived NK ("iNK") cell medicines for solid tumors using technology from BlueRock Therapeutics LP ("BlueRock") and generated edited NK cells from both healthy donors and iPSCs with significantly increased anti-cancer activity. We are also advancing alpha-beta T cell medicines in collaboration with Juno Therapeutics, Inc., a wholly owned subsidiary of Bristol-Myers Squibb Company ("Juno Therapeutics"). We believe these approaches and expertise will allow us to develop allogenic, off-the-shelf engineered cell medicines, as opposed to relying on the need to obtain cells directly from a patient. For our allogeneic, off the shelf medicines, we edit cells from a pool of healthy donors or from iPSCs which are subsequently differentiated into effector cells, such as NK cells or T cells. The engineered cells are then administered to the patient. These allogeneic cell medicines have the potential to greatly reduce the costs and complexity of engineered cells and increase the number and type of cancers that we can potentially address.

Our Core Capability — Genome Editing

Genome editing is the process of revising, removing, or repairing defective DNA *in situ*. In general, genome editing corrects the defective DNA in its native genomic location, and consequently the repaired genetic region retains the cell's normal control and feedback mechanisms. Genome editing typically takes advantage of naturally occurring DNA repair mechanisms, including non-homologous end joining ("NHEJ") and homology directed repair ("HDR"), to achieve its desired therapeutic outcome. Edits that are repaired by NHEJ typically disrupt a gene or eliminate a disease-causing mutation. Edits that are repaired by HDR, including targeted insertion, aim to correct or replace aberrant DNA sequences. The diversity of genetic drivers of disease demands a variety of solutions. Genome editing has the potential to deliver a variety of types of genome modification to address a broad range of diseases.

CRISPR technology uses a protein-RNA complex composed of a type of enzyme, referred to as a DNA endonuclease, bound to an RNA molecule, referred to as a guide RNA, that has been designed to recognize a particular DNA sequence. A DNA endonuclease is an enzyme that cleaves DNA. This combination of a DNA endonuclease and a guide RNA only bind and cut DNA when two criteria are met: first, the protein recognizes a short DNA specific to the enzyme called the protospacer adjacent motif ("PAM"), and second, the appropriate portion of the guide RNA matches the adjacent DNA sequence. The PAM sequence that is recognized by the DNA endonuclease creates a second layer of recognition in addition to the guide RNA. We believe that CRISPR technology has three principal advantages for genome editing:

- *Rapid, comprehensive, and systematic identification of product candidates.* The key targeting mechanism for the endonuclease, whether it is Cas9 or Cas12a, is a guide RNA, which can be rapidly replaced with a different guide RNA or optimized by changes as small as a single nucleotide. This allows for the flexible design, synthesis, and testing of hundreds of guide RNA/endonuclease combinations for each genetic target in order to find those that cut the DNA target with the optimal efficiency and specificity. In contrast, other commonly used DNA nucleases for genome editing have inherently limited flexibility. For example, zinc finger nucleases, engineered meganucleases, and transcription activator-like effector nucleases use proteins

for DNA sequence recognition to bring the endonuclease to the site of the genome where cleavage is desired, requiring the creation of an entirely new protein for each target site.

- *Simultaneous and efficient targeting of multiple sites.* In CRISPR technology, multiple guide RNAs can be provided along with the same endonuclease, enabling the simultaneous and efficient targeting of multiple sites. This ability to target multiple DNA sequences expands the applicability of CRISPR technology and also creates the potential for self-regulating systems that control exposure to the editing machinery. To address more than one target, other genome editing technologies require the engineering, characterization, manufacture, and delivery of distinct nuclease proteins for each target.

- *Ability to achieve a range of different types of edits.* The inherent differences in Cas9 and Cas12a and the availability of different engineered variants of both enzymes allow for different types of cuts for genome editing. We are able to make a blunt cut, cut either strand of the DNA, or create overhangs of differing length. This may be a critical component of improved HDR-driven approaches because the type of DNA cut can influence the type of repair mechanism used by a cell in response to that cut. We believe the ability to modify CRISPR technology to allow for different types of cuts will expand the potential of our genome editing platform.

Our Genome Editing Platform

We have developed a proprietary genome editing platform that includes different natural and engineered variants of Cas9 and Cas12a. We have characterized different Cas9 and Cas12a enzymes for several reasons. Firstly, a lower molecular weight enzyme will have advantages for delivering the endonuclease using a viral vector due to the inherent size limitations of most such delivery systems. For example, the Cas9 enzyme from *Staphylococcus aureus* ("*S. aureus*" or "SaCas9") is significantly smaller than that from *Streptococcus pyogenes* ("*S. pyogenes*" or "SpCas9") (3,159 vs. 4,104 base pairs), and this decreased size is important when working with AAV as a delivery vector, which has an effective packaging limit of approximately 4,700 base pairs. Secondly, we have gained access to modified versions of Cas12a and Cas12a guide RNAs that increase Cas12a activity. This increased activity may allow us to use Cas12a editing in more indications where editing at a Cas12a susceptible site is desirable from a biological perspective but technically difficult with the wild-type Cas12a editing system. EDIT-301 for sickle cell disease and beta-thalassemia is one such example. Thirdly, identifying Cas9 and Cas12a enzymes with different editing properties will expand the number of potential editing sites in the human genome. The range of natural and engineered variants of Cas9 and Cas12a have significantly expanded the number of sites in the human genome that we can potentially target. As compared to the most commonly used, naturally occurring version of Cas9, from the bacterial species *S. pyogenes*, the range of endonucleases in our platform can target approximately ten times as many genomic sites. Thus, while the *S. pyogenes* Cas9 can target approximately 1 in 10 bases in the human genome, we have the potential to hit over 95% of all bases due to the wide range of endonucleases at our disposal.

The guide RNA molecule is another component of our genome editing platform. We have made substantial advances in the design, synthesis, modification, analysis, and characterization of guide RNAs. For example, in order to accelerate and standardize the selection of guide RNAs, we have created proprietary analytical software that supports guide RNA design through single nucleotide polymorphism analysis, specificity prediction, and assessment of relative importance of potential off target sites.

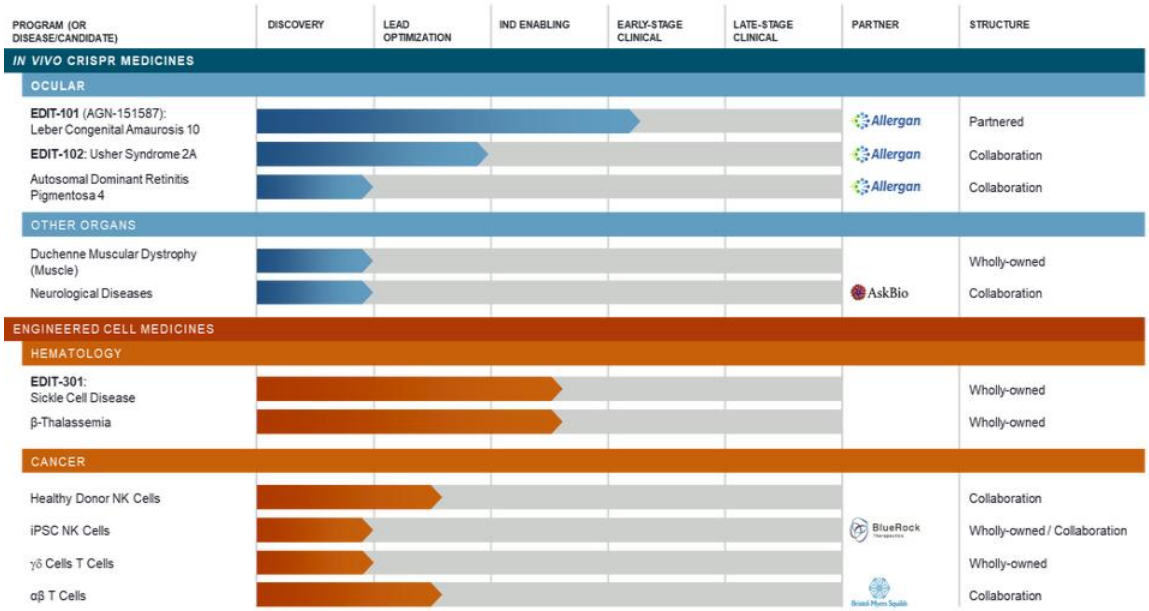
Of critical importance in determining the activity and specificity of an endonuclease-guide RNA complex is understanding the quality and composition of the guide RNA. The ability to understand the quality and composition of the guide RNA is an essential component to developing product candidates that have the potential to be safe and efficacious medicines. In addition to state-of-the-art mass spectrometry and sequencing methodologies to understand the absolute composition of our guide RNAs, we have developed two-step synthesis methods which results in guide RNAs which we believe are significantly superior to those generated by other approaches. This method allows us to independently synthesize and purify guide RNAs in multiple parts and covalently couple them using a proprietary catalyst-free chemistry. These covalently coupled, dual guide RNAs retain the advantages afforded by a single guide RNA and we believe are of higher quality than a guide RNA made by a single synthesis reaction. We believe this method will lead to higher quality genome editing medicines.

Our genome editing platform includes multiple modular delivery modes that can be efficiently adapted to deliver different CRISPR genome editing components to address the specific needs of each disease targeted. Our strategy is to leverage existing delivery technologies to target cell types of interest while developing next generation capabilities as warranted. We are currently using, and will continue to use, a variety of delivery approaches, including AAVs and electroporation. For example, we have taken advantage of the smaller *S. aureus* Cas9 and existing AAV technology to construct an "all-in-one" viral vector that is able to deliver the DNA coding for the nuclease protein and one or two guide RNAs directly to cells. We believe our ability to configure all the components for genome editing in an "all-in-one" AAV vector has substantial advantages for manufacturing and delivery compared to approaches that rely on multiple vectors. In addition, we have also made substantial advances in the *ex vivo* delivery of CRISPR systems to a number of cell types. We have been able to demonstrate greater than 90% *ex vivo* editing on multiple genetic targets simultaneously in human T cells and greater than 90% *ex vivo* editing in hematopoietic stem cells using ribonucleoprotein complexes, which consist of the Cas9 or Cas12a endonuclease complexed with its guide RNA. These results are consistent across multiple cell donors and multiple target genes.

To optimize the specificity of our product candidates, there are a number of different aspects of the product configuration that we customize in addition to the sequence and quality of the guide RNA, including the length of the guide RNA, the type of Cas9 or Cas12a enzyme, including engineered forms, the delivery vector, the use of tissue-selective promoters, and the duration of exposure all contribute to overall specificity. For example, to reduce the potential persistence of genome editing activity, we are developing self-regulating genome editing systems designed to deliver not only the endonuclease-guide RNA complex, but also an "off switch" that reduces the presence of the endonuclease-guide RNA complex over time. We have completed studies of these systems that demonstrate the ability to both maintain on-target editing and also reduce levels of editing components once the on-target edit is expected to have been completed.

Our Genomic Medicine Programs

We have initiated a diversified range of research programs across multiple therapeutic and disease areas. Our product development strategy is to target diseases where gene editing can be used to enable or enhance therapeutic outcomes for patients. We believe the therapeutic programs and delivery technologies we have chosen to date will demonstrate the depth and breadth of our ability to deploy our genome editing platform to develop differentiated, transformational medicines for patients with high unmet need. The following summarizes our research programs, product candidates and disease areas:



In Vivo *CRISPR Medicines - Ocular*

We have granted Allergan an exclusive option to exclusively license from us up to five collaboration development programs for the treatment of ocular disorders, including EDIT-101. As discussed below, Allergan has exercised its option with respect to EDIT-101 and entered into a profit-sharing arrangement with us in the United States for such program. See "*Our Collaboration and Licensing Strategy*" below for more information.

Leber Congenital Amaurosis 10

Leber congenital amaurosis ("LCA") is a heterogeneous group of inherited retinal dystrophies caused by mutations in at least 18 different genes and is the most common cause of inherited childhood blindness, with an incidence of two to three per 100,000 live births worldwide. Symptoms of LCA appear within the first year of life with significant vision loss, rapid involuntary movements of the eyes, painful eye response to bright light, and absence of measurable electroretinogram recordings due to a lack of functional photoreceptor cells. The most common form of the disease is LCA10, a monogenic disorder that represents approximately 20-30% of all LCA subtypes. LCA10 is caused by autosomal recessive mutations in the CEP290 gene, which encodes a protein required for the survival and proper function of photoreceptor cells. The most frequently found mutation within the CEP290 gene, occurring in approximately 85% of north and west European patients with LCA10, is an A to G nucleotide change that disrupts normal splicing, or processing, of the gene message, ultimately resulting in a deficiency of functional CEP290 protein. Decreased CEP290 protein leads to loss of the outer segments of photoreceptor cells and function over time, which leads to blindness. We believe there are between 2,000 and 5,000 LCA10 patients in the United States and Europe.

EDIT-101 uses an AAV5 vector to deliver the DNA encoding SaCas9 and two guide RNAs to photoreceptor cells in the eye. This experimental CRISPR medicine is designed to eliminate a disease-causing A to G nucleotide change in a non-coding region, or intron, of the CEP290 gene by cutting out that nucleotide and surrounding DNA. We believe this genome editing approach has the potential to restore normal protein expression and function of the remaining photoreceptor cells, which could improve vision or arrest the further loss of vision in LCA patients.

Certain clinical research studies estimated that retention of 10% of photoreceptors can impart meaningful vision in humans. Based on these studies, we have prespecified a therapeutic target of 10% productive editing of photoreceptors with the assumption that each productively edited photoreceptor will be fully functional. We have tested EDIT-101 in preclinical studies by delivering several dose quantities of EDIT-101 subretinally in mice that had a humanized CEP290 gene. Subretinal delivery of EDIT-101 in humanized CEP290 mice showed rapid and sustained CEP290 gene editing. These studies demonstrated that EDIT-101 edited the relevant cells at therapeutically relevant levels as early as a week following dosing and greater than 10% editing at AAV dose levels that have been safely administered to humans based on prior clinical studies.

To investigate genome editing *in vivo*, we conducted studies in non-human primates using subretinal injection of an AAV5 expressing SaCas9 and nonhuman primate specific guide RNAs. After either six or 13 weeks, animals were euthanized and retinal tissue from the injected region was removed for analysis. These studies showed that AAV genomes and Cas9 expression were limited to photoreceptors. In addition, we estimate that 12-22% and 50% of CEP-290 alleles were productively edited at six weeks and at 13 weeks, respectively. In these studies, productive editing is defined as the proportion of photoreceptor cells edited in a manner that we believe will restore CEP290 protein function. All of these values exceed our prespecified therapeutic target of 10% productive editing. Furthermore, these doses were shown in subsequent studies to be well tolerated in non-human primates based on visual and immunohistochemical analysis. Similar studies in mice showed that editing was rapid, achieving maximum levels by 6 weeks, and stable with changes maintained for the 26 weeks of the study.

In 2017, we initiated a natural history study of LCA10 patients. In this study, we are assessing the manifestations and course of the LCA10 disease in approximately 40 patients across a range of ages and disease severity at seven sites in the United States and Europe. Patients are evaluated six times over the course of a year. The purpose of the study was to inform the clinical trial design and enrollment for our Phase 1/2 clinical trial of EDIT-101 through the characterization of patients' baseline status and the rate of change of the disease, as well as to validate endpoints of the Phase 1/2 clinical trial for EDIT-101.

In mid-2019, we and Allergan initiated an initial Phase 1/2 clinical trial which is an open-label, single ascending dose trial of EDIT-101 in adult and pediatric (i.e., ages 3 to 17 years) patients with retinal degeneration caused by a homozygous or compound heterozygous mutation of the CEP290 gene, which is referred to as an IVS26 mutation. Patients will receive a single dose of EDIT-101 administered via subretinal injection in one eye. Approximately 18 patients will be enrolled at approximately eight trial centers in the United States and Europe. Up to five cohorts across three doses will be enrolled in this clinical trial. The primary endpoint of the trial is an assessment of safety and tolerability, and the secondary endpoint is to evaluate the efficacy of a single dose of EDIT-101 on change from baseline in various parameters. Efficacy will be evaluated at multiple timepoints, including core measures every three months for the first year and then less frequently thereafter. We and Allergan began patient screening for the Phase 1/2 clinical trial for EDIT-101 and expect to announce patient dosing by the end of the first quarter of 2020.

Other Eye Diseases

We are also pursuing the development of therapies for eye diseases other than LCA10, including USH2A and autosomal dominant retinitis pigmentosa 4. We believe that our experience with the LCA10 program will support the development of therapies for these other eye diseases. For example, the successful construction and testing of the components of the AAV vector we are pursuing for EDIT-101 will continue to inform our approach to treating the most common cause of USH2A.

Usher Syndrome 2A

USH2A gene mutations are the most common cause of Usher syndrome, a form of retinitis pigmentosa that also includes hearing loss. Loss of the usherin protein encoded by the USH2A gene leads to a degeneration of the retina and progressive vision loss. More than 200 mutations have been identified for this gene. Our initial goal in this research program is to address mutations within exon 13, which contains the highest percentage of USH2A gene mutations. We believe there are approximately 14,000 USH2A patients including up to approximately 4,000 Usher syndrome patients

with the mutation we aim to correct. We have declared a development candidate, EDIT-102, to treat USH2A patients. EDIT-102 is comprised of the same proprietary enzyme, vector and promoter as EDIT-101.

We tested EDIT-102 in preclinical studies of human cell lines and demonstrated approximately 47% productive editing in the cells that resulted in such cells expressing 60% more USH2A messenger RNA as compared to the unedited cells. In other preclinical studies, we tested EDIT-102 in humanized retinal organoids, which are three-dimensional structures derived from human pluripotent stem cells and can serve as an in vitro model of retinas, and demonstrated noticeable increases in the proper localization of the usherin complex in the photoreceptor cells at 120-140 days, as compared to retinal organoids formed from cells that contained a patient-derived mutation in exon 13.

Retinitis Pigmentosa

Mutations in the human rhodopsin ("RHO") gene accounts for 25% of all forms of adRP4, a progressive form of retinal degeneration characterized by initial night blindness early in life followed by loss of peripheral vison and eventual complete blindness. More than 150 mutations in the RHO gene have been identified, with the most prevalent allele in the United States representing approximately 10 percent of all patients with adRP4. We believe there are approximately 26,000 adRP4 patients with mutations in the RHO gene. Leveraging our EDIT-101 and EDIT-102 learnings, we are developing a novel approach to treat all forms of adRP4 resulting from mutations in the RHO gene and aim to declare a development candidate, potentially using the same enzyme and vector as EDIT-101, by the end of 2020.

In Vivo *CRISPR Medicines – Early Discovery Programs*

In addition to our ocular programs, we hope to leverage our expertise in developing genomic medicines utilizing AAV delivery to expand our *in vivo* programs to treat additional diseases and therapeutic areas, including DMD, peripheral nervous system, neuromuscular, liver, the central nervous system and cardiology. Under our strategic research collaboration with AskBio, we are aiming to develop a therapy to treat a neurological disease.

Engineered Cell Medicines

Our most advanced engineered cell medicine, EDIT-301, is designed to treat sickle cell disease and beta-thalassemia. We are also developing multiple engineered cell medicines for the potential treatment of different cancers, including solid tumors. In our collaboration with Juno Therapeutics, we are researching and developing engineered alpha-beta ("αβ") T cell therapies to treat cancer and autoimmune diseases. In our wholly-owned oncology programs, we are further developing our capabilities to generate certain engineered NK cells from iPSCs and healthy donor derived NK cells that we edit to treat solid tumors. We are also collaborating with Bluerock and Sandhill Therapeutics, Inc. to increase our technical capabilities in such programs.

Engineered Cell Medicines – Hemoglobinopathies

We are developing an approach for genome editing in HSCs to support the advancement of research programs to treat non-malignant hematological diseases, including sickle cell disease and beta thalassemia. Patients suffering from sickle cell disease have a median life expectancy of 42-47 years and there are over 100,000 sickle cell disease hospitalizations in the United States annually. We are actively pursuing a distinct gene editing approach to treating these hemoglobinopathies. Our primary criteria for a successful product candidate include high and pancellular fetal hemoglobin ("HbF") with a best-in-class safety profile. To this end, we have developed EDIT-301, an experimental, autologous cell therapy that targets the *HBG1/2* promoter in the beta-globin gene to stimulate HbF production, to treat sickle cell disease and plan to file an IND with the FDA by the end of 2020.

We have focused our efforts on editing a site within the beta-globin locus that we believe has the potential to create superior expression of fetal hemoglobin since patients with elevated fetal hemoglobin levels have better clinical outcomes. We believe that EDIT-301 has the potential to impact beta-globin expression by increasing HbF and decreasing sickle globin. In particular, preclinical data shows that EDIT-301 induces more HbF than the targeting the *BCL11A* erythroid enhancer ("BC11Ae"). Likewise, we believe our approach will reduce the sickle globin and, therefore, not have to compete for alpha globin in the same cell unlike lentiviral gene therapy approaches. Further,

human genetic studies support editing at the beta-globin locus, but not at the *BC11Ae* locus. Our preclinical studies also identified one potential concern for *BC11Ae* editing as we found deleterious lineage skewing when editing the *BCL11Ae* locus. Finally, gene editing is more specific that lentiviral expression. To get the high levels of beta-globin required for an efficacious therapy, there will be cells in the CD34+ population, which are cells that contain the long-term stem cells that repopulate the hematopoietic lineages, that carry more than twenty copies of the viral genome. These random integration events have the potential to inadvertently activate or inactivate genes involved in cell function and tumorigenesis. As such, we believe our approach to editing the beta-globin locus provides the highest likelihood of providing clinical benefit in patients while working to minimize potential safety risks.

Based on our belief that editing the beta-globin locus is the preferred therapeutic approach, we conducted a comprehensive screen of the beta-globin locus for sites that would elevate fetal hemoglobin. In particular, we screened over 26,000 guide RNAs spanning a 300 kb region of the beta-globin locus. This screen was successful in identifying several sites, including those predicted by human genetics, that elevate HbF. We then examined whether Cas9 or Cas12a was the preferred editing enzyme. We found that indels, which are small insertions and deletions at the cut site, larger than three nucleotide deletions induced more HbF than smaller deletions and that indels created by NHEJ repair process are preferentially retained *in vivo* compared to indels created by microhomology-mediated end joining repair process. Finally, we found that Cas12a makes more larger deletions by NHEJ than Cas9.

Using our approach in preclinical studies, we edited human CD34+ cells at the *HBG1/2* promoter site and then infused these edited cells into immuno-compromised mice. Following such infusion, we collected bone marrow from the mice at eight- and 16-weeks post-infusion. Such studies demonstrated that the edited cells were able to repopulate all hematopoietic lineages, including red blood cell precursors, in the mice, resulting in increased production of fetal hemoglobin. In contrast, we found that cells edited at the *BCL11A* erythroid enhancer site were not able to fully repopulate the erythroid lineage in mice. If these results are seen in humans, then editing at such site may not be an effective approach to treat sickle cell disease or beta-thalassemia. For this reason, we believe our approach of editing the hemoglobin locus to increase fetal hemoglobin has the potential to generate differentiated medicines to benefit patients with sickle cell disease and beta thalassemia. We also tested that ability of cells edited at the beta-globin locus to induce fetal hemoglobin. As we had predicted from our *in vitro* studies, editing at the beta-globin site with Cas12a caused a robust induction of HbF with approximately 45% above the background levels and HbF induction was pancellular.

Engineered Cell Medicines – Alpha-Beta T Cells

Engineered T cells, including alpha-beta T cells, have shown encouraging clinical activity against multiple cancers, culminating in the recent approval of two such therapies in the United States. Because of these promising results, there is significant interest in the medical community in expanding the application of this technology across a broader range of cancers and patients. We believe that our genome editing technology has the potential to improve multiple properties of these alpha-beta T cell therapies. Alpha-beta cells are part of the adaptive immune system and recognize tumors with endogenous alpha-beta T cell receptors or chimeric antigen receptors (“CARs”) or engineered T cell receptors (“Engineered TCRs”). If we are successful, genome-edited engineered alpha-beta T cells have the potential to significantly expand the types of cancers treatable by CAR/ Engineered TCR alpha-beta T cells and to improve the outcomes of these therapies.

Through our collaboration with Juno Therapeutics, we have applied our genome editing technology to multiple gene targets in order to improve the efficacy and safety of CAR/ Engineered TCR alpha-beta T cells directed against a range of tumor types. In addition, we have optimized genome editing components and delivery methods compatible with engineered alpha-beta T cell manufacturing methods developed by Juno Therapeutics. See “*Our Collaboration and Licensing Strategy*" below for more information regarding our collaboration with Juno Therapeutics.

Engineered Cell Medicines – Natural Killer Cells and Gamma Delta T Cells

We are developing engineered NK cell medicines to treat solid tumors. NK cells are innate immune cells that can recognize tumor cells by a variety of mechanisms, including multiple innate receptors that recognize cells that do not express T cell antigens and cells that express stress ligands. NK cells are also part of process known as antibody-directed

cellular cytotoxicity ("ADCC") by which therapeutic antibodies are directed to and kill tumor cells. Further, NK cells have a lower risk of causing graft versus host disease. If we are successful, genome-edited NK cells have the potential to increase the signaling power of ADCC pathways, improve the persistence of NK cells and/or increase tumor microenvironment resistance. Genome-edited NK cells may be further engineered with one or more CARs or innate receptors to further improve one or more of these properties. For example, genome-edited engineered NK cells could be used to improve recognition of tumor cells lacking T cell antigens, including PD-1 non-responding tumors.

Our two primary approaches to obtaining NK cells are obtaining such cells from healthy donors or differentiating iPSCs into such cells. Once we have obtained the cells, we then edit them to increase certain of the natural properties of the cell to better enable them to treat solid tumors, such as the cells persistence *in vivo*, its ability to withstand the tumor micro-environment, improved ability to cause ADCC and improved recognition of tumor cells. In preclinical studies, we have demonstrated our ability to efficiently edit healthy donor derived NK cells which resulted in a 54% increase in the amount of cytolysis in cultured cells, as compared to unedited NK cells. Additionally, we have performed highly efficient editing of iPSCs that we differentiated into NK cells to treat cancer.

We have also begun researching and developing gamma delta T cell therapies to treat cancer. Like NK cells, gamma delta T cells are part of the innate immune system. We hope to leverage our capabilities and expertise in alpha-beta T cells and our natural killer cell programs to develop such therapies.

Our Collaborations and Licensing Strategy

Juno Therapeutics Collaboration and License Agreement

In May 2015, we entered into a collaboration and license agreement with Juno Therapeutics for the research and development of engineered T cells with CARs and Engineered TCRs that have been genetically modified to recognize and kill other cells. We and Juno Therapeutics amended and restated this agreement in May 2018 and November 2019 (the "Juno Collaboration Agreement") and, in connection with the amendment and restatement in November 2019, we entered into a license agreement with Juno Therapeutics (such agreement, the "Juno License Agreement," and collectively Juno Collaboration Agreements, the "Juno Agreements"). Under the terms of the Juno Collaboration Agreement, we received an upfront payment of $25.0 million, amendment fees totaling $75.0 million and have received four milestone payments totaling $10.0 million.

The Juno Agreements relate to technology used to edit or modify the genome of a cell in connection with the research, development, manufacture, commercialization or other exploitation of T cells that express or have ever expressed T cell receptor dimers consisting of an alpha (α) chain and a beta (β) chain (such cells, "Alpha-beta T Cells"), and T cells derived from pluripotent stem cells or any other precursor cell (such cells, "Other Derived T Cells"), subject to certain exclusions for certain of our existing obligations. The exploitation of Alpha-beta T Cells and Other Derived T Cells specifically excludes the exploitation of T Cells that express a T cell receptor dimer consisting of a gamma (γ) chain and a delta (δ) chain, which we refer to as gamma-delta T Cells, and therefore, as a result of the entry into the Juno Agreements, we may develop such gamma delta T Cells, which were previously subject to Juno Therapeutics' exclusive rights under our prior collaboration.

During the research term under the Juno Collaboration Agreement, we may research ribonucleoprotein complexes comprising an RNA-guided engineered nuclease paired with an oligonucleotide ("RNP Complexes") that recognize or modulate the expression of up to twenty gene targets selected by Juno Therapeutics (each, a "Research Program") for the purpose of identifying the RNP Complexes that may be used in the creation of potential drug development candidates. The initial research term is five years from the effective date of the Juno Collaboration Agreement. Juno Therapeutics may extend the research term for up to two one-year periods upon written notice to us and payment to us of a mid to high single digit million-dollar payment upon each extension. Juno Therapeutics' right to extend the research term for the second one-year period is subject to our consent.

Under the Juno Collaboration Agreement, if Juno Therapeutics elects to opt-in with respect to a Research Program, it shall make a mid-six digit dollar payment to us and we shall amend the Juno License Agreement to include such Research Program by executing a licensed program addendum for such Research Program. Following Juno's opt-in

for each program we shall grant to Juno Therapeutics an exclusive (even as to us), royalty-bearing worldwide right and license under specified intellectual property rights to research, develop, manufacture commercialize or otherwise exploit the RNP Complexes in such Research Program to create products containing, incorporating, comprising or containing Alpha-beta T Cells and/or Other Derived T Cells, in each case modified using the RNP Complexes in such Research Program (each, a "Juno Licensed Product").

We are entitled to receive high single-digit to low double-digit percentage royalties on net sales made by Juno Therapeutics, its affiliates and sublicensees of any Juno Licensed Products, subject to reductions in certain circumstances. We are also entitled to receive development milestones totaling up to $135.0 million in the aggregate upon achievement of certain clinical milestones and specified regulatory approvals and commercial milestone payments totaling up to $60.0 million in the aggregate for each of the first two Juno Licensed Products to achieve specified net sales milestones.

We have agreed during the term of the Juno Collaboration Agreement not to use (directly or indirectly), or license others to use, genome editing technology in connection with any research, development, manufacture, commercialization or other exploitation of any Alpha-beta T Cells or Other Derived T Cells. Our exclusivity obligation will not apply to activities related to (i) any identified RNP Complexes in a program for which Juno Therapeutics elects not to exercise its opt-in right, (ii) certain of our existing obligations to third parties, and (iii) certain existing programs of an acquiror of our company in a change of control.

We have agreed during the term of any licensed program addendum under the Juno License Agreement not to use (directly or indirectly), or license others to use, any genome editing technology that modulates or recognizes a gene target covered by such licensed program addendum for the conduct of any research, development, manufacture, commercialization or other exploitation with respect to any product that constitutes, incorporates, comprises or contains any Alpha-beta T Cell or Other Derived T Cells.

The Juno Collaboration Agreement continues in effect until the later of expiration of the research term or expiration of the last to expire of Juno Therapeutics' right to opt-in with respect to any Research Program. Juno Therapeutics may terminate the Juno Collaboration Agreement in its discretion upon six months' prior written notice to us. Either party may terminate the Juno Collaboration Agreement for uncured material breach of the other party, provided that the breaching party has had sixty days to cure such breach, or in the event of insolvency or bankruptcy of the other party.

The Juno License Agreement continues in effect on a Juno Licensed Product-by-Juno Licensed Product and country-by-country basis until the expiration of the royalty term with respect to such licensed product in such country and in its entirety upon the expiration of all royalty terms with respect to all Juno Licensed Products in all countries. Juno Therapeutics may terminate the Juno License Agreement in its entirety or on a Juno Licensed Product-by-Juno Licensed Product basis in its discretion upon ninety days' prior written notice to us. Either party may terminate the Juno License Agreement on a Juno Licensed Product-by-Juno Licensed Product basis in the event of an uncured material breach of the other party, provided that the breaching party has had sixty days to cure such breach, or in the event of insolvency or bankruptcy of the other party. We have the right to terminate the Juno License Agreement on a program-by-program basis in the event that Juno Therapeutics fails to make any undisputed payment to us and has not cured such payment breach within the cure period. Other than Juno Therapeutics' right to wind-down its operations with respect to Juno Licensed Products during the twelve months following the date of effectiveness of termination, all licenses and other exclusive rights granted under the Juno License Agreement shall terminate.

Allergan Strategic Alliance and Option Agreement and Co-Development and Commercialization Agreement

In March 2017, we entered into a strategic alliance and option agreement with Allergan to discover, develop, and commercialize new gene editing medicines for a range of ocular disorders. Over a seven-year research term, Allergan will have an exclusive option to exclusively license from us up to five collaboration development programs for the treatment of ocular disorders (each, a "Collaboration Development Program"), including EDIT-101, for which Allergan has exercised its option. We will use commercially reasonably efforts to develop at least five Collaboration Development Programs and deliver preclinical results and data meeting specified criteria with respect to each

Collaboration Development Program (each, an "Option Package") to Allergan. We will generally have responsibility for the conduct of each Collaboration Development Program and sole responsibility for all development costs of each Collaboration Development Program prior to any exercise by Allergan of its option to acquire an exclusive license to such Collaboration Development Program under the terms of the agreement. If at the end of the seven-year research term we have not delivered five Collaboration Development Programs that satisfy the Option Package criteria for each such program, the research term shall automatically extend by one-year increments until such obligation is satisfied, up to three additional years (the "Research Term"). In connection with entering into this agreement, Allergan paid us a one-time up-front payment of $90.0 million. Allergan has also paid us $15.0 million in connection with Allergan exercising its option for the LCA10 program and $25.0 million in connection with the acceptance of the IND for the LCA10 program.

Upon delivery of an Option Package with respect to a Collaboration Development Program to Allergan, Allergan is entitled, for specified periods of time thereafter (each, an "Initial Option Period"), to exercise an option (an "Option") to acquire from us an exclusive (even as to us and our affiliates) world-wide right and license to our background intellectual property and our interest in the Collaboration Development Program intellectual property to develop, commercialize, make, have made, use, offer for sale, sell, and import any gene editing therapy product that results from such Collaboration Development Program during the term of the agreement (an "Allergan Licensed Product") in any category of human diseases and conditions other than the diagnosis, treatment or prevention of any cancer in humans through the use of engineered T cells and subject to specified other limitations. Following the exercise of an Option, Allergan will have the right to grant sublicenses subject to specified terms, under Allergan's exclusive license to our background intellectual property and our interest in the Collaboration Development Program intellectual property, to develop, commercialize, make, have made, use, offer for sale, sell, and import Allergan Licensed Products.

Upon the exercise of an Option within the Initial Option Period, Allergan is required to pay to us an option exercise fee of $15.0 million. At any time during the Initial Option Period, Allergan may also elect to extend the period of time in which it may exercise the Option to permit additional development work with respect to the Collaboration Development Program, and in connection with such extension Allergan will be required to pay us an option extension fee of $5.0 million. If, following such an extension, Allergan exercises the Option following the Initial Option Period, Allergan will be required to pay us a higher option exercise fee of $22.5 million plus specified costs incurred by us in connection with the additional development work. If Allergan does not exercise an Option within a specified option exercise period and any extension thereof, such Option will terminate.

In addition, subject to specified limitations, at the end of the Research Term, Allergan will have the right, for a specified period of time, to exercise an Option with respect to each Collaboration Development Program for which we have not yet delivered an Option Package. Upon the exercise by Allergan of any such option, Allergan is required to pay to us an option exercise fee in the low-seven digits.

Following the exercise by Allergan of an Option with respect to a Collaboration Development Program, Allergan will be responsible for the development, manufacturing and commercialization of any Allergan Licensed Products thereunder and will be required to use commercially reasonable efforts to develop, obtain regulatory approval for and commercialize at least one Allergan Licensed Product thereunder.

We are entitled to receive clinical, regulatory, and launch milestone payments from Allergan up to a low-nine-digit amount in the aggregate and further commercial milestone payments up to a high-eight-digit amount in the aggregate with respect to each Collaboration Development Program for which Allergan exercises its Option, with certain of such milestone payments subject to reduction under certain circumstances. In the aggregate, we are eligible to receive clinical, regulatory, launch, and commercial milestone payments that could exceed $200.0 million for an indication in the first field per Collaboration Development Program, as well as the potential for additional regulatory milestones for indications in up to two additional fields. We are also entitled to receive royalties in the high-single digit percentages with respect to net sales of Allergan Licensed Products, subject to certain reductions under specified circumstances, and we will remain obligated to pay all license fees, milestone payments, and royalties due to its upstream licensors based on Allergan's exercise of its license rights with respect to Allergan Licensed Products. Allergan's obligation to pay royalties will expire on a country-by-country/Allergan Licensed Product-by-Allergan Licensed Product basis upon the latest of the expiration of patent-based exclusivity with respect to the applicable Allergan Licensed Product in the applicable

country, expiration of regulatory-based exclusivity with respect to the applicable Allergan Licensed Product in the applicable country and the tenth anniversary of the first commercial sale by Allergan of the applicable Allergan Licensed Product in the applicable country. We are generally required to pay to Allergan royalties in the low- to mid-single digit percentages on net sales of products developed under Collaboration Development Programs that Allergan terminated following exercise of its Option, in each case over royalty terms equivalent to those for the royalties due to us under the agreement.

We have the right to elect to participate in a profit-sharing arrangement with Allergan in the United States for one additional Collaboration Development Program that Allergan exercises its option with respect to, on terms mutually agreed by us and Allergan and subject to a right of Allergan to reject such election under certain circumstances. If we make such an election, we and Allergan would share equally in net profits and losses on specific terms to be agreed between us and Allergan, in lieu of Allergan paying royalties on net sales of any applicable Allergan Licensed Products in the United States and in such event Allergan's milestone payment obligations would be reduced, with our being eligible to receive clinical, regulatory, and launch milestone payments up to a low nine-digit amount in the aggregate and further commercial milestone payments up to a high-eight digit amount in the aggregate, subject to reduction under certain circumstances. If we elect to participate in a profit-sharing arrangement, we are obligated to reimburse Allergan for half of the development costs incurred by Allergan with respect to the applicable Collaboration Development Program and Allergan will retain control of all development and commercialization activities for the applicable Allergan Licensed Products. Under the agreement, we and Allergan will establish an alliance steering committee ("ASC") comprised of three members from each of us and Allergan, which will have review, oversight and decision-making responsibility for selecting the targets and indications and certain Option Package criteria for the Collaboration Development Programs and determining whether the Option Package criteria for a Collaboration Development Program have been satisfied. With respect to a given Collaboration Development Program, all decisions of the ASC will be made by consensus, subject to specified final decision-making rights, with each of us and Allergan having one vote.

During the Research Term, neither we nor any of our affiliates will, subject to specified exceptions in the agreement, develop, manufacture or commercialize any gene editing therapy in the ocular field, or grant a license or sublicense to develop, manufacture or commercialize any gene editing therapy in the ocular field. During the Research Term, neither Allergan nor any of its affiliates will, subject to specified exceptions in the agreement, develop, manufacture or commercialize, or grant a license or sublicense to develop, manufacture or commercialize, any gene editing therapy in the ocular field directed to any ocular indication to which any gene editing therapy in any non-terminated Collaboration Development Program is directed or the same target to which any gene editing therapy in any non-terminated Collaboration Development Program is directed. After the Research Term, neither we, Allergan nor any of their respective affiliates will, subject to specified exceptions in the agreement, develop, manufacture or commercialize, or grant a license or sublicense to develop, manufacture or commercialize, any gene editing therapy in the ocular field directed to any ocular indication to which any Allergan Licensed Product is directed or any target to which any Allergan Licensed Product is directed.

Unless earlier terminated, the term of the agreement will expire upon (i) the expiration of the Research Term if Allergan does not exercise any Option or (ii) the expiration of all payment obligations under the agreement. In addition to other termination rights, Allergan has the right to terminate the agreement (i) in its entirety for an uncured material breach by us and (ii) in its entirety for any reason on a program-by-program basis for the Collaboration Development Programs for which Allergan has exercised its Option with 90 days' written notice. Additionally, Allergan may terminate the Research Term (i) on a Collaboration Development Program-by-Collaboration Development Program basis upon written notice to us in the event of a change of control of us or (ii) for all Collaboration Development Programs, provided that, Allergan will not have any right to exercise any Option for any such Collaboration Development Program following any such termination. If Allergan terminates the Agreement for our material breach, subject to Allergan's continued payment, reporting, and audit obligations under the agreement, Allergan has the right to retain all licenses granted under the agreement and Allergan will no longer have any diligence obligations with respect to the Allergan Licensed Products.

In February 2019, we entered into the LCA10 Co-Development and Commercialization Agreement with Allergan Sales, LLC ("Allergan Sales"). Under this agreement, we and Allergan Sales have agreed to share in the costs

and certain development responsibilities for products arising under the program to treat LCA10 and the profits and losses resulting from the commercialization of any products arising under such program, in each case, in the United States.

Intellectual Property Licenses

We are a party to a number of license agreements under which we license patents, patent applications, and other intellectual property from third parties. The licensed intellectual property covers, in part, CRISPR -related compositions of matter and their use for genome editing. These licenses impose various diligence and financial payment obligations on us. We expect to continue to enter into these types of license agreements in the future. We consider the following license agreements to be material to our business.

The Broad Institute and President and Fellows of Harvard College License Agreement

In October 2014, we entered into a license agreement with The Broad Institute, Inc. ("Broad") and the President and Fellows of Harvard College ("Harvard"), for specified patent rights. In December 2016, we amended and restated this license agreement and further amended the agreement in March 2017 (as amended, the "Cas9-I License Agreement"). Among other things, the Cas9-I License Agreement amended the original license agreement by excluding additional fields from the scope of the exclusive license granted to us; converting the exclusive license to three specified targets to a non-exclusive license, subject to specified limitations; revising certain provisions relating to the rights of Harvard and Broad to grant further licenses under specified circumstances to third parties that wish to develop and commercialize products that target a particular gene and that otherwise would fall within the scope of our exclusive license; and providing Harvard and Broad with certain rights to designate, and reserve all rights to, gene targets for which the designating institution has an interest in researching and developing products that would otherwise be covered by rights licensed to us. The licenses granted to us under the Cas9-I License Agreement include rights to certain patents solely owned by Harvard (the "Harvard Cas9-I Patent Rights"), certain patents co-owned by the Massachusetts Institute of Technology ("MIT") and Broad, certain patents co-owned by MIT, The Rockefeller University ("Rockefeller"), and Broad, and certain patents co-owned by MIT, Broad and Harvard. We refer to all the patents and patent applications licensed to us under the Cas9-I License Agreement as the Harvard/Broad Cas9-I Patent Rights.

Certain patent applications in the Harvard/Broad Cas9-I Patent Rights are jointly owned by Rockefeller. In February 2017, Broad and Rockefeller entered into an inter-institutional agreement pursuant to which Rockefeller authorized Broad to act as its sole and exclusive agent for the purposes of licensing Rockefeller's rights in such Harvard/Broad Cas9-I Patent Rights and any additional related patents or patent applications that Rockefeller may jointly own with Broad. The March 2017 amendment to the Cas9-I License Agreement included a license to Rockefeller's rights in such patents and patent applications.

The Harvard/Broad Cas9-I Patent Rights are directed, in part, to certain CRISPR/Cas9 compositions of matter and their use for genome editing and to certain CRISPR/Cas9 related delivery technologies. Pursuant to the Cas9-I License Agreement, and as of December 31, 2019, we have certain rights under 42 U.S. patents, 52 pending U.S. patent applications, 20 European patents and related validations, 28 pending European patent applications, and other related patent applications in jurisdictions outside of the United States and Europe.

Pursuant to the Cas9-I License Agreement, Harvard and Broad granted us an exclusive, worldwide, royalty-bearing, sublicensable license to the Harvard/Broad Cas9-I Patent Rights to make, have made, use, sell, offer for sale, have sold, import, and export products and services in the field of the prevention and treatment of human disease, subject to certain limitations and retained rights. The exclusive license granted by Broad and Harvard excludes certain fields, including the modification of animals or animal cells for the creation and sale of organs suitable for xenotransplantation into humans; the research, development and commercialization of products or services in the field of livestock applications; plant-based agricultural products; and, subject to certain limitations, products providing nutritional benefits. Moreover, the license granted by Broad is non-exclusive with respect to the treatment of medullary cystic kidney disease 1 and three other specified targets, subject to the limitation that for such three targets, each of Broad and Harvard is only permitted to grant a non-exclusive license to one third party at a time with respect to each such target within the field of exclusive license granted to us. Harvard and Broad also granted us a non-exclusive, worldwide, royalty-bearing, sublicensable license to the Harvard/Broad Cas9-I Patent Rights for all purposes, with the

exception that the non-exclusive license to certain Harvard Cas9-I Patent Rights excludes the modification of animals or animal cells for the creation and sale of organs suitable for xenotransplantation into humans and the development and commercialization of products or services in the field of livestock applications. In addition to the exclusions described above, the following are excluded from the scope of both the exclusive and non-exclusive licenses granted to us under the Cas9-I License Agreement: human germline modification; the stimulation of biased inheritance of particular genes or traits within a population of plants or animals; the research, development, manufacturing, or commercialization of sterile seeds; and the modification of the tobacco plant with specified exceptions.

We are obligated to use commercially reasonable efforts to research, develop, and commercialize products for the prevention or treatment of human disease under the Cas9-I License Agreement. Also, we are required to achieve certain development milestones within specified time periods for products incorporating the technologies covered by the Harvard/Broad Cas9-I Patent Rights. Harvard and Broad have the right to terminate our license with respect to the Harvard/Broad Cas9-I Patent Rights covering the technology or technologies with respect to which we fail to achieve these development milestones.

The licenses granted by Broad and Harvard to us under the Cas9-I License Agreement are subject to retained rights of the U.S. government in the Harvard/Broad Cas9-I Patent Rights and the rights retained by Broad, Harvard, MIT, and Rockefeller on behalf of themselves and other academic, government and non-profit entities, to practice the Harvard/Broad Cas9-I Patent Rights for research, educational, or teaching purposes. In addition, certain rights granted to us under the Cas9-I License Agreement are further subject to a non-exclusive license to the Howard Hughes Medical Institute for research purposes. Our exclusive license rights also are subject to rights retained by Broad, Harvard, MIT, and Rockefeller any third party to research, develop, make, have made, use, offer for sale, sell, have sold, import or otherwise exploit the Harvard/Broad Cas9-I Patent Rights and licensed products as research products or research tools, or for research purposes.

We have the right to sublicense our licensed rights provided that the sublicense agreement must be in compliance and consistent with the terms of the Cas9-I License Agreement. Any sublicense agreement cannot include the right to grant further sublicenses without the written consent of Broad and Harvard. In addition, any sublicense agreements must contain certain terms, including a provision requiring the sublicensee to indemnify Harvard, Broad, MIT, and Howard Hughes Medical Institute according to the same terms as are provided in the Cas9-I License Agreement and a statement that Broad, Harvard, MIT, and Howard Hughes Medical Institute are intended third party beneficiaries of the sublicense agreement for certain purposes.

Under the agreement, Harvard and Broad also retained rights to grant further licenses under specified circumstances to third parties, other than specified entities, that wish to develop and commercialize products that target a particular gene and that otherwise would fall within the scope of our exclusive license from Harvard and Broad. If a third party requests a license under the Harvard/Broad Cas9-I Patent Rights for the development and commercialization of a product that would be subject to our exclusive license grant from Harvard and Broad under the Cas9-I License Agreement, Harvard and Broad may notify us of the request (the “Cas9-I Third Party Proposed Product Requests”). Beginning in December 2018, our process to address Cas9-I Third Party Proposed Product Requests has been conformed to the same process established in our Cpf1 license agreement described below.

The Cas9-I License Agreement also provides Broad with the right, after a specified period of time and subject to certain limitations, to designate gene targets for which Broad, whether alone or together with an affiliate or third party, has an interest in researching and developing products that would otherwise be covered by rights licensed to us under the Cas9-I License Agreement. Broad may not so designate any gene target for which we, directly or through any of our affiliates, sublicensees, or collaborators, are researching, developing, or commercializing a product, or for which we can demonstrate to Broad’s reasonable satisfaction that we are interested in researching, developing, and commercializing a product, that we have a commercially reasonable research, development, and commercialization plan to do so, and we commence and continue reasonable commercial efforts under such plan. If we directly or through any of our affiliates, sublicensees, or collaborators, are not researching, developing, or commercializing a product directed toward the gene target designated by Broad and are not able to develop and implement a plan reasonably satisfactory to Broad, Broad is entitled to reserve all rights under the Cas9-I License Agreement, including the right to grant exclusive or non-exclusive licenses to third parties, to develop and commercialize products directed to such gene target and our

license granted with respect to such gene target will terminate, and we will not be entitled under the Cas9-I License Agreement to develop and commercialize products directed to that gene target.

Under the Cas9-I License Agreement, we paid Broad and Harvard an upfront license fee in the low six figures and issued a single-digit percentage of shares of our common stock to Broad (with Broad holding a right to request re-issuance to its designees, including MIT or MIT's designee) and Harvard. We also must pay an annual license maintenance fee ranging from the low- to mid-five figures to the low-six figures, depending on the calendar year. This annual license maintenance fee is creditable against royalties owed on licensed products and services in the same year as the maintenance fee is paid. We are obligated to reimburse Broad and Harvard for expenses associated with the prosecution and maintenance of the Harvard/Broad Cas9-I Patent Rights, including expenses associated with any interference proceedings in the USPTO, any opposition proceedings in the EPO, or any other *inter partes* or other post grant proceedings in these or other jurisdictions where we are seeking patent protection. Therefore, we are obligated to reimburse Broad and/or Harvard for expenses associated with the interference and opposition proceedings involving patents licensed to us under this agreement (described in more detail under "Risk Factors—Risks Related to Our Intellectual Property—Some of Our In-Licensed Patents are Subject to Priority and Validity Disputes" in Part I, Item 1A of this Annual Report on Form 10-K).

Broad and Harvard are collectively entitled to receive clinical and regulatory milestone payments totaling up to $14.8 million in the aggregate per licensed product approved in the United States, the European Union and Japan for the prevention or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. If we undergo a change of control during the term of the Cas9-I License Agreement, these clinical and regulatory milestone payments will be increased by a certain percentage in the mid double-digits. We are also obligated to make additional payments to Broad and Harvard, collectively, of up to an aggregate of $54.0 million upon the occurrence of certain sales milestones per licensed product for the prevention or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. Broad and Harvard are collectively entitled to receive clinical and regulatory milestone payments totaling up to $4.1 million in the aggregate per licensed product approved in the United States and at least one jurisdiction outside the United States for the prevention or treatment of a human disease that afflicts fewer than a specified number of patients in the aggregate in the United States or a specified number of patients per year in the United States, which we refer to as an ultra-orphan disease. We are also obligated to make additional payments to Broad and Harvard, collectively, of up to an aggregate of $36.0 million upon the occurrence of certain sales milestones per licensed product for the prevention or treatment of an ultra-orphan disease.

Broad and Harvard, collectively, are entitled to receive mid single-digit percentage royalties on net sales of licensed products for the prevention or treatment of human disease, and ranging from low single-digit to high single-digit percentage royalties on net sales of other licensed products and services, made by us, our affiliates, or our sublicensees. The royalty percentage depends on the licensed product and licensed service, and whether such licensed product or licensed service is covered by a valid claim within the Harvard/Broad Cas9-I Patent Rights. If we are legally required to pay royalties to a third party on net sales of our licensed products because such third party holds patent rights that cover such licensed product, then we can credit up to a mid double-digit percentage of the amount paid to such third party against the royalties due to Harvard and Broad in the same period. Our obligation to pay royalties will expire on a product-by-product and country-by-country basis upon the later of the expiration of the last to expire valid claim of the Harvard/Broad Cas9-I Patent Rights that cover the composition, manufacture, or use of each covered product or service in each country or the tenth anniversary of the date of the first commercial sale of the licensed product or licensed service. If we sublicense any of the Harvard/Broad Cas9-I Patent Rights to a third party pursuant to our exclusive license under the Cas9-I License Agreement, Broad and Harvard, collectively, had the right to receive a low to mid double-digit percentage of the sublicense income, which percentage decreased to a low double-digit percentage in 2018 and may still decrease to a low of a high single-digit percentage for licensed products for the prevention or treatment of human disease under sublicenses executed after we meet a certain clinical milestone.

Broad and Harvard retain control of the prosecution of their respective patent rights. If an interference is declared or a derivation proceeding is initiated, with respect to any Harvard/Broad Cas9-I Patent Rights, then our prosecution related rights, including our right to receive correspondence from a patent office, will be suspended with respect to the patent rights involved in the interference or derivation proceeding until, under some circumstances, we enter into a common interest agreement with that institution. Nevertheless, we remain responsible for the cost of such

interference or derivation proceeding. We are responsible for the cost of the interference proceeding and appeal with respect to these patents and this patent application. Broad and Harvard are required to maintain any application or patent within the Harvard/Broad Patents Rights so long as we meet our obligation to reimburse Broad and Harvard for expenses related to prosecution and there is a good faith basis for doing so. If we cease payment for the prosecution of any Harvard/Broad Patent Right, then any license granted to us with respect to such Harvard/Broad Patent Right will terminate.

We have the first right, but not the obligation, to enforce the Harvard/Broad Cas9-I Patent Rights with respect to our licensed products so long as certain conditions are met, such as providing Broad and Harvard with evidence demonstrating a good faith basis for bringing suit against a third party. We are solely responsible for the costs of any lawsuits we elect to initiate and cannot enter into a settlement without the prior written consent of Broad and Harvard (and MIT and Rockefeller, if applicable). Any sums recovered in such lawsuits will be shared between us, Broad, and Harvard.

Unless terminated earlier, the term of the Cas9-I License Agreement will expire on a country-by-country basis, upon the expiration of the last to expire valid claim of the Harvard/Broad Cas9-I Patent Rights in such country. However, our royalty obligations, discussed above, may survive expiration or termination. We have the right to terminate the agreement at will upon four months' written notice to Broad and Harvard. Broad and Harvard may terminate the agreement upon a specified period of notice in the event of our uncured material breach, such notice period varying depending on the nature of the breach. Both Broad and Harvard may terminate the Cas9-I License Agreement immediately if we challenge the enforceability, validity, or scope of any Harvard/Broad Patent Right or assist a third party to do so, or in the event of our bankruptcy or insolvency. Neither Broad nor Harvard acting alone has the right to terminate the Cas9-I License Agreement. However, Broad and Harvard may separately terminate the licenses granted to us with respect to their respective patent rights upon the occurrence of the same events that would give rise to the right of both institutions acting collectively to terminate the Cas9-I License Agreement.

The Broad Institute—Cpf1 License Agreement

In December 2016, we entered into a license agreement with Broad, for specified patent rights ("Cpf1 Patent Rights") related primarily to Cas12a compositions of matter and their use for gene editing (as amended, the "Cpf1 License Agreement"). Pursuant to the Cpf1 License Agreement, Broad, on behalf of itself, Harvard, MIT, Wageningen University ("Wageningen"), and the University of Tokyo ("Tokyo" and collectively with the other institutions, the "Cpf1 Institutions") granted us an exclusive, worldwide, royalty-bearing, sublicensable license to the Cpf1 Patent Rights, to make, have made, use, have used, sell, offer for sale, have sold, export and import products solely in the field of the prevention or treatment of human disease using gene therapy, editing of genetic material, or targeting of genetic material, subject to certain limitations and retained rights (collectively, the "Exclusive Cpf1 Field"), as well as a non-exclusive, worldwide, royalty-bearing, sublicensable license to the Cpf1 Patent Rights for all other purposes, subject to certain limitations and retained rights. The licenses granted to us under the Cpf1 License Agreement exclude certain fields, including human germline modification; the stimulation of biased inheritance of particular genes or traits within a population of plants or animals; the research, development, manufacturing, or commercialization of sterile seeds; and the modification of the tobacco plant with specified exceptions.

Tokyo and the National Institute of Health ("NIH") are joint owners on certain Cpf1 Patent Rights. Broad has only granted a license to us with respect to its interests and to Tokyo's interests in these U.S. patent applications but not to any foreign equivalents thereof. Broad does not, and does not purport to, grant any rights in NIH's interest in these U.S. patent applications under our agreement. As a result, we may not have exclusive rights under any U.S. patents that issue from these U.S. patent applications and we may not have any rights under any foreign patents that issue from any foreign equivalents thereof.

Pursuant to the Cpf1 License Agreement, and as of December 31, 2019, we have certain rights under one U.S. patent, 11 pending U.S. patent applications, two European patents and related validations, nine pending European patent applications, and other related patent applications in jurisdictions outside of the United States and Europe.

We are obligated to use commercially reasonable efforts to research, develop, and commercialize licensed products in the Exclusive Cpf1 Field. We are also required to achieve certain development milestones within specified time periods for products covered by the Cpf1 Patent Rights, with Broad having the right to terminate the Cpf1 License Agreement if we fail to achieve these milestones within the required time periods. We have the right to sublicense our licensed rights provided that the sublicense agreement must be in compliance and consistent with the terms of the Cpf1 License Agreement. Any sublicense agreement cannot include the right to grant further sublicenses without the written consent of Broad. In addition, any sublicense agreements must contain certain terms, including a provision requiring the sublicensee to indemnify the Cpf1 Institutions according to the same terms as are provided in the Cpf1 License Agreement and a statement that the Cpf1 Institutions are intended third party beneficiaries of the sublicense agreement for certain purposes.

The licenses granted to us under the Cpf1 License Agreement are subject to retained rights of the U.S. government in the Cpf1 Patent Rights and rights retained by the Cpf1 Institutions on behalf of themselves and other academic, government and non-profit entities, to practice the Cpf1 Patent Rights for research, teaching, or educational purposes. Our exclusive license rights also are subject to rights retained by the Cpf1 Institutions for themselves and any third party to research, develop, make, have made, use, offer for sale, sell, have sold, import or otherwise exploit the Cpf1 Patent Rights and licensed products as research products or research tools, or for research purposes.

Under the Cpf1 License Agreement, Broad also retained rights to grant further licenses under specified circumstances to third parties that wish to develop and commercialize products that target a particular gene and that otherwise would fall within the scope of our exclusive license from Broad. Beginning in December 2018, if a third party requests a license under the Cpf1 Patent Rights for the development and commercialization of a product that would be subject to our exclusive license grant from Broad (a “Cpf1 Third Party Proposed Product Request”), Broad may notify us of such request. A Cpf1 Third Party Proposed Product Request must be accompanied by a research, development and commercialization plan reasonably satisfactory to Broad, including evidence that the third party has, or reasonably expects to have, access to any necessary intellectual property and funding. Broad may not grant a Cpf1 Third Party Proposed Product Request (i) if we, directly or through any of our affiliates, sublicensees, or collaborators are researching, developing, or commercializing a product directed to the same gene target that is the subject of the Cpf1Third Party Proposed Product Request (“Cpf1 Licensee Product”) and we can demonstrate such ongoing efforts to Broad’s reasonable satisfaction, or (ii) if we, directly or through any of our affiliates or sublicensees, wish to do so either alone or with a collaboration partner, and we can demonstrate to Broad’s reasonable satisfaction that we are interested in researching, developing, and commercializing a Cpf1 Licensee Product, that we have a commercially reasonable research, development, and commercialization plan to do so, and we commence and continue reasonable commercial efforts under such plan. If we, directly or through any of our affiliates, sublicensees, or collaborators, are not researching, developing, or commercializing a Cpf1 Licensee Product nor able to develop and implement a plan reasonably satisfactory to Broad, Broad may grant an exclusive or non-exclusive license to the third party on a gene target-by-gene target basis.

The Cpf1 License Agreement also provides Broad with the right, beginning in December 2017 and subject to certain limitations, to designate gene targets for which Broad, whether alone or together with a Cpf1 Institution, affiliate or third party, has an interest in researching and developing products that would otherwise be covered by rights licensed to us under the Cpf1 License Agreement. Broad may not so designate any gene target for which we, directly or through any of our affiliates, sublicensees, or collaborators, are researching, developing, or commercializing a product, or for which we can demonstrate to Broad’s reasonable satisfaction that we are interested in researching, developing, and commercializing a product, that we have a commercially reasonable research, development, and commercialization plan to do so, and we commence and continue reasonable commercial efforts under such plan. If we, directly or through any of our affiliates, sublicensees, or collaborators, are not researching, developing, or commercializing a product directed toward the gene target designated by Broad and are not able to develop and implement a plan reasonably satisfactory to Broad, Broad is entitled to reserve all rights under the Cpf1 License Agreement, including the right to grant exclusive or non-exclusive licenses to third parties, to develop and commercialize products directed to such gene target, our license with respect to such gene target will terminate, and we will not be entitled under the Cpf1 License Agreement to develop and commercialize products directed to such gene target.

Under the Cpf1 License Agreement, we paid Broad and Wageningen an aggregate upfront license fee in the mid seven digits and issued to Broad and Wageningen promissory notes (the "Initial Promissory Notes") in an aggregate principal amount of $10.0 million, which we settled in full in 2017. Broad and Wageningen are collectively entitled to receive clinical and regulatory milestone payments totaling up to $20.0 million in the aggregate per licensed product approved in the United States, the European Union and Japan for the prevention or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. If we undergo a change of control during the term of the Cpf1 License Agreement, certain of these clinical and regulatory milestone payments will be increased by a certain percentage in the mid double-digits. We are also obligated to make additional payments to Broad and Wageningen, collectively, of up to an aggregate of $54.0 million upon the occurrence of certain sales milestones per licensed product for the prevention or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. Broad and Wageningen are collectively entitled to receive clinical and regulatory milestone payments totaling up to $6.0 million in the aggregate per licensed product approved in the United States, the European Union and Japan for the prevention or treatment of an ultra-orphan disease. We are also obligated to make additional payments to Broad and Wageningen, collectively, of up to an aggregate of $36.0 million upon the occurrence of certain sales milestones per licensed product for the prevention or treatment of an ultra-orphan disease.

Broad and Wageningen, collectively, are entitled to receive mid single-digit percentage royalties on net sales of products for the prevention or treatment of human disease, and ranging from sub single-digit to high single-digit percentage royalties on net sales of other products and services, made by us, our affiliates, or our sublicensees. The royalty percentage depends on the product and service, and whether such licensed product or licensed service is covered by a valid claim within the Cpf1 Patent Rights. If we are legally required to pay royalties to a third party on net sales of our products because such third party holds patent rights that cover such licensed product, then we can credit up to a mid double-digit percentage of the amount paid to such third party against the royalties due to Broad and Wageningen in the same period. Our obligation to pay royalties will expire on a product-by-product and country-by-country basis upon the later of the expiration of the last to expire valid claim of the Cpf1 Patent Rights that covers each licensed product or licensed service in each country or the tenth anniversary of the date of the first commercial sale of the product or service. If we sublicense any of the Cpf1 Patent Rights to a third party, Broad and Wageningen, collectively, have the right to receive high single-digit to low double-digit percentages of the sublicense income, depending on the stage of development of the products or services in question at the time of the sublicense.

Under the Cpf1 License Agreement, Broad and Wageningen are also entitled, collectively, to receive success payments in the event our market capitalization reaches specified thresholds ascending from a high nine digit dollar amount to $10.0 billion ("Market Cap Success Payments") or sale of our company for consideration in excess of those thresholds, ("Company Sale Success Payments," which with the Market Cap Success Payments, the "Success Payments"). Market Cap Success Payments are payable by us in cash or in the form of promissory notes (the "Promissory Notes"). The Promissory Notes bear interest at 4.8% per annum. Principal and interest on the Promissory Notes are payable on, subject to certain exceptions, 150 days following issuance (or if earlier, a specified period of time following a sale of our company). We could elect to make any payment of amounts outstanding under the Promissory Notes either in the form of cash or, subject to certain conditions, in shares of our common stock of equal value, with such shares being valued for such purpose at the closing price of our common stock as reported the Nasdaq Stock Market for the trading day immediately preceding the date of such payment if our common stock was then listed on the Nasdaq Stock Market. In the event of a change of control of our company or a sale of our company, we are required to pay all remaining principal and accrued interest on the Promissory Notes in cash within a specified period following such event. Following a change in control of our company, Market Cap Success Payments are required to be made in cash. Company Sale Success Payments are payable solely in cash. In 2017, two Market Cap Success Payments of $5.0 million each became due and payable and we issued Promissory Notes in such amounts, which we fully settled by issuing shares of our common stock in 2017 and 2018. The remaining Success Payments that may be paid to Broad and Wageningen range from a low-eight digit dollar amount to a mid-eight digit dollar amount, and collectively will not exceed, in aggregate, $115.0 million, which maximum would be payable only if we achieve a market capitalization threshold of $10.0 billion and have at least one product candidate covered by a claim of a patent right licensed to us under either the Cpf1 License Agreement or the Cas9-I License Agreement that is or was the subject of a clinical trial pursuant to development efforts by us or any of our affiliates or sublicensees.

In addition, in the event that a sale of our company or change of control has occurred and the maximum amount of potential Success Payments under the Cpf1 License Agreement has not been paid to Broad and Wageningen, Broad and Wageningen are entitled to receive, upon the subsequent achievement of specified regulatory milestones, percentages ranging from high single digits to mid-to-low double digits of the remaining unpaid maximum amount of Success Payments. Broad and Wageningen are further entitled to receive up to the full remaining unpaid maximum amount of Success Payments upon the subsequent achievement of specified sales milestones. All such post-sale or post-change of control milestone payments are required to be made in cash.

Broad retains control of the prosecution and maintenance of the Cpf1 Patent Rights. We have the right to provide input in the prosecution of the Cpf1 Patent Rights, including to direct Broad to file and prosecute patents in certain countries. We are also obligated to reimburse Broad and Wageningen for all unreimbursed expenses incurred by them in connection with the prosecution and maintenance of the Cpf1 Patent Rights prior to the date of the Cpf1 License Agreement, and to reimburse Broad for expenses associated with the prosecution and maintenance of the Cpf1 Patent Rights following the date of the Cpf1 License Agreement.

We have the first right, but not the obligation, to enforce the Cpf1 Patent Rights with respect to our licensed products in the Exclusive Cpf1 Field so long as certain conditions are met, such as providing Broad and the applicable Cpf1 Institutions with evidence demonstrating a good faith basis for bringing suit against a third party. We are solely responsible for the costs of any lawsuits we elect to initiate and cannot enter into a settlement without the prior written consent of Broad. Any sums recovered in such lawsuits will be shared between Broad, Wageningen, and us.

Unless terminated earlier, the term of the Cpf1 License Agreement will expire on a country-by-country basis, upon the expiration of the last to expire valid claim of the Cpf1 Patent Rights in such country. However, our royalty obligations, discussed above, may survive expiration or termination. We have the right to terminate the Cpf1 License Agreement at will upon four months' written notice to Broad. Either party may terminate the Cpf1 License Agreement upon a specified period of notice in the event of the other party's uncured material breach of a material obligation, such notice period varying depending on the nature of the breach. Broad may terminate the Cpf1 License Agreement immediately if we challenge the enforceability, validity, or scope of any Cpf1 Patent Right or assist a third party to do so, or in the event of our bankruptcy or insolvency.

Other Broad Agreements

In addition to the Cas9-I License Agreement and the Cpf1 License Agreement, in December 2016, we entered into a license agreement with Broad for certain Cas9 compositions of matter and their use for gene editing (the "Cas9-II Agreement"), and, in December 2018, we entered into a Sponsored Research Agreement with Broad providing for Broad to conduct research useful or relevant to genome editing in the field of genomic medicines for the prevention of treatment of human diseases with funding from us (the "Sponsored Research Agreement"). Under the Cas9-II Agreement and the Sponsored Research Agreement, we have potential obligations with respect to success payments, which are described in Note 8 to the Notes to Consolidated Financial Statements included in Item 8 of this Annual Report on Form 10-K.

Intellectual Property

Our success depends in part on our ability to obtain and maintain proprietary protection for our platform technology, programs, and know-how related to our business, defend and enforce our intellectual property rights, in particular, our patent rights, preserve the confidentiality of our trade secrets, and operate without infringing valid and enforceable intellectual property rights of others. We seek to protect our proprietary position by, among other things, exclusively licensing and filing U.S. and certain foreign patent applications related to our platform technology, existing and planned programs, and improvements that are important to the development of our business, where patent protection is available. We also rely on trade secrets, know-how, continuing technological innovation, and confidential information to develop and maintain our proprietary position and protect aspects of our business that are not amenable to, or that we do not consider appropriate for, patent protection. We seek to protect our proprietary technology and processes, in part, by confidentiality agreements with our employees, consultants, scientific advisors, and contractors. We also seek to

preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems.

Our in-licensed patents and patent applications cover various aspects of our genome editing platform technology, including CRISPR systems that employ Cas9 including *S. aureus* Cas9, high-fidelity Cas9 nucleases and Cas9 PAM variants, self-inactivating forms of Cas9, Cas9 nickases, CRISPR systems that employ Cas12a including Cas12a nickases and other variants and self-inactivating forms of Cas12a, and also CRISPR systems that employ viral vectors for delivery, single guide RNAs, or modified guide RNAs. We also have filed patent applications and have in-licensed rights to filed patent applications directed to each of the four components of our genome editing platform technology. We intend to pursue, when possible, additional patent protection, including composition of matter, method of use, and process claims, directed to each component of our platform technology. We also intend to obtain rights to existing delivery technologies through one or more licenses from third parties.

Notwithstanding these efforts, we cannot be sure that patents will be granted with respect to any patent applications we have licensed or filed or may license or file in the future, and we cannot be sure that any patents we have licensed or patents that may be licensed or granted to us in the future will not be challenged, invalidated, or circumvented or that such patents will be commercially useful in protecting our technology. Moreover, trade secrets can be difficult to protect. While we have confidence in the measures we take to protect and preserve our trade secrets, such measures can be breached, and we may not have adequate remedies for any such breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors. For more information regarding the risks related to our intellectual property, please see “Risk Factors—Risks Related to Our Intellectual Property.”

The term of individual patents depends upon the legal term for patents in the countries in which they are granted. In most countries, including the United States, the patent term is 20 years from the earliest claimed filing date of a non-provisional patent application in the applicable country. In the United States, a patent’s term may, in certain cases, be lengthened by patent term adjustment, which compensates a patentee for administrative delays by the USPTO in examining and granting a patent, or may be shortened if a patent is terminally disclaimed over a commonly owned patent or a patent naming a common inventor and having an earlier expiration date. The Drug Price Competition and Patent Term Restoration Act of 1984 extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent applicable to each regulatory review period may be extended and only those claims covering the approved drug or a method for using it may be extended.

CRISPR

As of December 31, 2019, we owned eight U.S. patents, 45 pending U.S. non-provisional patent applications, four European patents and related validations, 40 pending European patent applications, seven pending U.S. provisional patent applications, 19 pending PCT patent applications, and other related patent applications in jurisdictions outside the United States and Europe that are related to our CRISPR technology and which include claims directed to our genome editing platform, including our directed editing component, as well as composition of matter and method of use claims for our therapeutic programs, including LCA10 and other genetic and infectious eye disorders, and engineered T cells. One of these U.S. patents, one of these European patents and their U.S., European and foreign counterpart applications are co-owned with Broad and Iowa and we have obtained an exclusive license to such co-ownership rights from these third parties in the field of prevention or treatment of human disease using gene therapy or genome editing. In addition, eight of these pending PCT patent applications and three of these pending U.S. non-provisional patent applications are co-owned with certain of our collaborators because they encompass inventions developed under our collaborations. Our current issued U.S. patents, if the appropriate maintenance fees are paid, are expected to expire between 2034 and 2038, excluding any additional term for patent term adjustments or patent term extensions. If issued as U.S. patents, and if the appropriate maintenance fees are paid, the U.S. patent applications would be expected to expire between 2034 and 2039, excluding any additional term for patent term adjustments or patent term extensions.

As of December 31, 2019, we in-licensed 60 U.S. patents, 27 European patents and related validations, and over 550 pending patent applications, including approximately 89 pending U.S. non-provisional patent applications, 59 pending European patent applications, and other related patents and patent applications in jurisdictions outside the United States and Europe that are related to our CRISPR technology collectively from various universities and

institutions. The patents and patent applications outside of the United States and Europe are held primarily in Canada, Japan, and Australia, although some of our in-licensed patent families were filed in a larger number of countries. The claims from our in-licensed portfolio include claims to compositions of matter, methods of use, and certain processes. These include claims directed to CRISPR systems that employ Cas9 including Cas9 nickases, *S. aureus* Cas9, high-fidelity Cas9 nucleases, Cas9 PAM variants and self-inactivating forms of Cas9, CRISPR systems that employ Cas12a including Cas12a nickases and other variants and self-inactivating forms of Cas12a, and also CRISPR systems that employ viral vectors for delivery, single guide RNAs, or modified guide RNAs. Our current in-licensed U.S. patents, if the appropriate maintenance fees are paid, are expected to expire between 2033 and 2038, excluding any additional term for patent term adjustments or patent term extensions. If issued as U.S. patents, and if the appropriate maintenance fees are paid, the U.S. patent applications would be expected to expire between 2033 and 2039, excluding any additional term for patent term adjustments or patent term extensions.

Our in-licensed patents and patent applications claim the inventions of investigators at various universities and institutions and the majority of these licensed patents and patent applications are licensed on an exclusive basis. The exclusive licenses are, in some cases, limited to certain technical fields. Certain U.S. patent applications licensed to us by Broad include Tokyo and NIH as joint applicants. Broad has only granted a license to us with respect to its interests and to Tokyo's interests in these U.S. patent applications but not to any foreign equivalents thereof. Broad does not and does not purport to grant any rights in NIH's interest in these U.S. patent applications under our agreement. As a result, we may not have exclusive rights under any U.S. patents that issue from these U.S. patent applications and we may not have any rights under any foreign patents that issue from any foreign equivalents thereof. For more information regarding these license agreements, please see the section of this Annual Report on Form 10-K titled "Business —Intellectual Property Licenses."

LCA10

As of December 31, 2019, we owned two U.S. patents, four pending U.S. non-provisional patent applications, one European patent and related validations, two pending European patent applications, five pending foreign patent applications, and one pending PCT patent application which are directed to compositions of matter, including guide RNAs directed to CEP290, and methods of use for the treatment of LCA10. Our current issued U.S. patents, if the appropriate maintenance fees are paid, are expected to expire in 2035, excluding any additional term for patent term extensions. If issued as a U.S. patent, and if the appropriate maintenance fees are paid, the U.S. patent applications would be expected to expire between 2035 and 2039, excluding any additional term for patent term adjustments or patent term extensions.

Trademarks

As of December 31, 2019, our registered trademark portfolio consisted of registrations in the United States for EDITAS, EDITAS in Stylized Letters and the Infinity Logo, registrations in Australia, China, the European Union, Japan and Switzerland for EDITAS, registrations in Australia, China, the European Union, Japan and Switzerland for the Infinity Logo and a registration in the European Union for UDITAS.

Competition

The biotechnology and pharmaceutical industries, including in the gene therapy, genome editing and cell therapy fields, are characterized by rapidly advancing technologies, intense competition, and a strong emphasis on intellectual property and proprietary products. While we believe that our technology, development experience, and scientific knowledge provide us with competitive advantages, we face potential competition from many different sources, including major pharmaceutical, specialty pharmaceutical, biotechnology companies, governmental agencies, and public and private research institutions. Any product candidates that we successfully develop and commercialize may compete with existing therapies and new therapies may become available in the future.

We compete in the segments of the pharmaceutical, biotechnology, and other related markets that utilize technologies encompassing genomic medicines to create therapies, including genome editing and gene therapy. There are additional companies that are working to develop therapies in areas related to our research programs. Our platform

and product focus is the development of therapies using CRISPR technology. Other companies developing CRISPR technology or therapies using CRISPR technology include Arbor Biotechnologies, Caribou Biosciences, CRISPR Therapeutics, ERS Genomics, Intellia Therapeutics, Locus Biosciences, ToolGen Inc. TRACR Hematology and Vertex Pharmaceuticals. In addition, there have been and may continue to be discoveries of new CRISPR-based gene editing technologies. There are additional companies developing therapies using other genome editing technologies, including base editing, prime editing, transcription activator-like effector nucleases, meganucleases, Mega-TALs and zinc finger nucleases. The companies developing these other genome editing technologies include Beam Therapeutics, Prime Medicine, bluebird bio, Cellectis, Poseida Therapeutics, Precision Biosciences and Sangamo Therapeutics. Additional companies developing gene therapy products include Abeona Therapeutics, Adverum Biotechnologies, AGTC Therapeutics, Audentes Therapeutics, Homology Medicines, REGENXBIO, Sarepta Therapeutics, Solid Biosciences, Spark Therapeutics, uniQure and Voyager Therapeutics. In addition to competition from other genome editing therapies, gene therapies or cell medicine therapies, any products that we may develop may also face competition from other types of therapies, such as small molecule, antibody, protein, oligonucleotide, or ribonucleic acid therapies. For example, ProQR Therapeutics N.V. is conducting a Phase I/II clinical trial for its experimental treatment using antisense oligonucleotide technology for LCA10.

In addition, many of our current or potential competitors, either alone or with their collaboration partners, may have greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology, and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient or are less expensive than any products that we may develop. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. The key competitive factors affecting the success of all of our programs are likely to be their efficacy, safety, convenience, and availability of reimbursement.

If our current programs are approved for the indications for which we are currently planning clinical trials, they may compete with other products currently under development, including genome editing and gene therapy products. Competition with other related products currently under development may include competition for clinical trial sites, patient recruitment, and product sales.

Manufacturing

We currently perform some manufacturing activities internally such as the production of guide RNA for our various internal and partner programs and some pre-clinical toxicology and Phase 1 production for our engineered cell medicines and contract with third parties for the manufacturing of all other materials for preclinical studies and our planned clinical trials. We have limited manufacturing operations and do not own or operate any substantial manufacturing facilities for the production of our program materials. We currently have no plans to build our own clinical or commercial scale manufacturing capabilities. The use of contracted manufacturing and reliance on collaboration partners is relatively cost-efficient and has eliminated the need for our direct investment in manufacturing facilities and additional staff early in development. Although we rely on contract manufacturers, we have personnel with manufacturing experience to oversee our contract manufacturers. We expect third-party manufacturers to be capable of providing sufficient quantities of our program materials to meet anticipated needs for preclinical studies and clinical trials. To meet our projected needs for commercial manufacturing, third parties with whom we currently work might need to increase their scale of production or we will need to secure alternate suppliers. We believe that there are alternate sources of supply that can satisfy our preclinical, clinical, and commercial requirements, although we cannot be certain that identifying and establishing relationships with such sources, if necessary, would not result in significant delay or material additional costs.

Commercialization

We currently intend to build the commercial infrastructure in the United States and Europe necessary to effectively support the commercialization of all of our programs, if and when we first believe a regulatory approval of a product candidate under one of our programs in a particular geographic market appears probable. The commercial infrastructure for orphan products typically consists of a targeted, specialty sales force that calls on a limited and focused group of physicians supported by sales management, medical liaisons, internal sales support, an internal marketing group, and distribution support. Additionally, under the LCA10 Co-Development and Commercialization Agreement, Allergan will be responsible for all commercialization efforts with respect to EDIT-101.

Additional capabilities important to the orphan marketplace include the management of key accounts such as managed care organizations, group purchasing organizations, specialty pharmacies, and government accounts. To develop the appropriate commercial infrastructure, we will have to invest significant amounts of financial and management resources, some of which will be committed prior to any confirmation that any product candidate we may develop will be approved.

Outside of the United States and Europe, where appropriate, we may elect in the future to utilize strategic partners, distributors, or contract sales forces to assist in the commercialization of our products. In certain instances, we may consider building our own commercial infrastructure.

As product candidates advance through our pipeline, our commercial plans may change. In particular, some of our research programs target potentially larger indications. Data, the size of the development programs, the size of the target market, the size of a commercial infrastructure, and manufacturing needs may all influence our strategies in the United States, Europe, and the rest of the world.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and in other countries and jurisdictions, including the European Union, extensively regulate, among other things, the research, development, testing, manufacture, pricing, reimbursement, sales, quality control, approval, packaging, storage, recordkeeping, labeling, advertising, promotion, distribution, marketing, post-approval monitoring and reporting, and import and export of pharmaceutical products, including biological products. The processes for obtaining marketing approvals in the United States and in foreign countries and jurisdictions, along with subsequent compliance with applicable statutes and regulations and other regulatory authorities, require the expenditure of substantial time and financial resources.

Licensure and Regulation of Biologics in the United States

In the United States, our candidate products would be regulated as biological products, or biologics, under the Public Health Service Act (the “PHSA”) and the Federal Food, Drug and Cosmetic Act (the “FDCA”) and its implementing regulations and guidances. The failure to comply with the applicable U.S. requirements at any time during the product development process, including non-clinical testing, clinical testing, the approval process or post-approval process, may subject an applicant to delays in the conduct of the study, regulatory review and approval, and/or administrative or judicial sanctions. These sanctions may include, but are not limited to, the FDA’s refusal to allow an applicant to proceed with clinical testing, refusal to approve pending applications, license suspension, or revocation, withdrawal of an approval, warning letters, adverse publicity, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, and civil or criminal investigations and penalties brought by the FDA or the Department of Justice (“DOJ”) and other governmental entities, including state agencies.

An applicant seeking approval to market and distribute a new biologic in the United States generally must satisfactorily complete each of the following steps:

- preclinical laboratory tests, animal studies and formulation studies all performed in accordance with the FDA’s Good Laboratory Practice regulations;

- completion of the manufacture, under current Good Manufacturing Practices ("cGMP") conditions, of the drug substance and drug product that the sponsor intends to use in human clinical trials along with required analytical and stability testing;

- submission to the FDA of an IND application for human clinical testing, which must become effective before human clinical trials may begin;

- approval by an independent institutional review board ("IRB") representing each clinical site before each clinical trial may be initiated;

- performance of adequate and well-controlled human clinical trials to establish the safety, potency, and purity of the product candidate for each proposed indication, in accordance with current Good Clinical Practices ("GCP");

- preparation and submission to the FDA of a Biologic License Application ("BLA") for a biologic product requesting marketing for one or more proposed indications, including submission of detailed information on the manufacture and composition of the product in clinical development and proposed labelling;

- review of the product by an FDA advisory committee, where appropriate or if applicable;

- satisfactory completion of one or more FDA inspections of the manufacturing facility or facilities, including those of third parties, at which the product, or components thereof, are produced to assess compliance with cGMP requirements and to assure that the facilities, methods, and controls are adequate to preserve the product's identity, strength, quality, and purity, and, if applicable, the FDA's current good tissue practice ("GTP") for the use of human cellular and tissue products;

- satisfactory completion of any FDA audits of the non-clinical and clinical trial sites to assure compliance with GCPs and the integrity of clinical data in support of the BLA;

- payment of user Prescription Drug User Free Act ("PDUFA") securing FDA approval of the BLA and licensure of the new biologic product; and

- compliance with any post-approval requirements, including the potential requirement to implement a Risk Evaluation and Mitigation Strategy ("REMS") and any post-approval studies required by the FDA.

Preclinical Studies and Investigational New Drug Application

Before testing any biologic product candidate in humans, including a gene therapy product candidate, the product candidate must undergo preclinical testing. Preclinical tests include laboratory evaluations of product chemistry, formulation and stability, as well as studies to evaluate the potential for efficacy and toxicity in animal studies. The conduct of the preclinical tests and formulation of the compounds for testing must comply with federal regulations and requirements. The results of the preclinical tests, together with manufacturing information and analytical data, are submitted to the FDA as part of an IND application.

An IND is an exemption from the FDCA that allows an unapproved product candidate to be shipped in interstate commerce for use in an investigational clinical trial and a request for FDA authorization to administer such investigational product to humans. The IND automatically becomes effective 30 days after receipt by the FDA, unless before that time the FDA raises concerns or questions about the product or conduct of the proposed clinical trial, including concerns that human research subjects will be exposed to unreasonable health risks. In that case, the IND sponsor and the FDA must resolve any outstanding FDA concerns before the clinical trials can begin or recommence.

As a result, submission of the IND may result in the FDA not allowing the trials to commence or allowing the trial to commence on the terms originally specified by the sponsor in the IND. If the FDA raises concerns or questions

either during this initial 30-day period, or at any time during the IND process, it may choose to impose a partial or complete clinical hold. Clinical holds are imposed by the FDA whenever there is concern for patient safety and may be a result of new data, findings, or developments in clinical, nonclinical, and/or chemistry, manufacturing, and controls. This order issued by the FDA would delay either a proposed clinical study or cause suspension of an ongoing study, until all outstanding concerns have been adequately addressed and the FDA has notified the company that investigations may proceed. This could cause significant delays or difficulties in completing planned clinical studies in a timely manner.

With gene therapy protocols, if the FDA allows the IND to proceed, but the Recombinant DNA Advisory Committee ("RAC") of the NIH decides that full public review of the protocol is warranted, the FDA will request at the completion of its IND review that sponsors delay initiation of the protocol until after completion of the RAC review process. The FDA also may impose clinical holds on a biologic product candidate at any time before or during clinical trials due to safety concerns or non-compliance. If the FDA imposes a clinical hold, trials may not recommence without FDA authorization and then only under terms authorized by the FDA.

Expanded Access to an Investigational Drug for Treatment Use

Expanded access, sometimes called "compassionate use," is the use of investigational products outside of clinical trials to treat patients with serious or immediately life-threatening diseases or conditions when there are no comparable or satisfactory alternative treatment options. The rules and regulations related to expanded access are intended to improve access to investigational products for patients who may benefit from investigational therapies. FDA regulations allow access to investigational products under an IND by the company or the treating physician for treatment purposes on a case-by-case basis for: individual patients (single-patient IND applications for treatment in emergency settings and non-emergency settings); intermediate-size patient populations; and larger populations for use of the investigational product under a treatment protocol or treatment IND application.

When considering an IND application for expanded access to an investigational product with the purpose of treating a patient or a group of patients, the sponsor and treating physicians or investigators will determine suitability when all of the following criteria apply: patient(s) have a serious or immediately life-threatening disease or condition, and there is no comparable or satisfactory alternative therapy to diagnose, monitor, or treat the disease or condition; the potential patient benefit justifies the potential risks of the treatment and the potential risks are not unreasonable in the context or condition to be treated; and the expanded use of the investigational drug for the requested treatment will not interfere initiation, conduct, or completion of clinical investigations that could support marketing approval of the product or otherwise compromise the potential development of the product.

There is no obligation for a sponsor to make its drug products available for expanded access; however, as required by the 21st Century Cures Act (the "Cures Act"), passed in 2016, if a sponsor has a policy regarding how it responds to expanded access requests, it must make that policy publicly available. Although these requirements were rolled out over time, they have now come into full effect. This provision requires drug and biologic companies to make publicly available their policies for expanded access for individual patient access to products intended for serious diseases. Sponsors are required to make such policies publicly available upon the earlier of initiation of a Phase 2 or Phase 3 study; or 15 days after the investigational drug or biologic receives designation as a breakthrough therapy, fast track product, or regenerative medicine advanced therapy.

In addition, on May 30, 2018, the Right to Try Act, was signed into law. The law, among other things, provides a federal framework for certain patients to access certain investigational products that have completed a Phase I clinical trial and that are undergoing investigation for FDA approval. Under certain circumstances, eligible patients can seek treatment without enrolling in clinical trials and without obtaining FDA permission under the FDA expanded access program. There is no obligation for a manufacturer to make its investigational products available to eligible patients as a result of the Right to Try Act.

Human Clinical Trials in Support of a BLA

Clinical trials involve the administration of the investigational product candidate to healthy volunteers or patients with the disease to be treated under the supervision of a qualified principal investigator in accordance with GCP

requirements. Clinical trials are conducted under study protocols detailing, among other things, the objectives of the study, inclusion and exclusion criteria, the parameters to be used in monitoring safety, and the effectiveness criteria to be evaluated. A protocol for each clinical trial and any subsequent protocol amendments must be submitted to the FDA as part of the IND.

A sponsor who wishes to conduct a clinical trial outside the United States may, but need not, obtain FDA authorization to conduct the clinical trial under an IND. When a foreign clinical trial is conducted under an IND, all FDA IND requirements must be met unless waived. When a foreign clinical trial is not conducted under an IND, the sponsor must ensure that the trial complies with certain regulatory requirements of the FDA in order to use the trial as support for an IND or application for marketing approval. Specifically, the FDA requires that such trials be conducted in accordance with GCP, including review and approval by an independent ethics committee and informed consent from subjects. The GCP requirements encompass both ethical and data integrity standards for clinical trials. The FDA's regulations are intended to help ensure the protection of human subjects enrolled in non-IND foreign clinical trials, as well as the quality and integrity of the resulting data. They further help ensure that non-IND foreign trials are conducted in a manner comparable to that required for clinical trials in the United States.

Further, each clinical trial must be reviewed and approved by an IRB either centrally or individually at each institution at which the clinical trial will be conducted. The IRB will consider, among other things, clinical trial design, patient informed consent, ethical factors, the safety of human subjects, and the possible liability of the institution. An IRB must operate in compliance with FDA regulations. The FDA, IRB, or the clinical trial sponsor may suspend or discontinue a clinical trial at any time for various reasons, including a finding that the clinical trial is not being conducted in accordance with FDA requirements or the subjects or patients are being exposed to an unacceptable health risk. Clinical testing also must satisfy extensive GCP rules and the requirements for informed consent.

Additionally, some clinical trials are overseen by an independent group of qualified experts organized by the clinical trial sponsor, known as a data safety monitoring board ("DSMB"). This group may recommend continuation of the study as planned, changes in study conduct, or cessation of the study at designated check points based on certain available data from the study to which only the DSMB has access. Finally, research activities involving infectious agents, hazardous chemicals, recombinant DNA, and genetically altered organisms and agents may be subject to review and approval of an Institutional Biosafety Committee in accordance with NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules.

Clinical trials typically are conducted in three sequential phases, but the phases may overlap or be combined. Additional studies may be required after approval.

- *Phase 1* clinical trials are initially conducted in a limited population to test the product candidate for safety, including adverse effects, dose tolerance, absorption, metabolism, distribution, excretion, and pharmacodynamics in healthy humans or, on occasion, in patients, such as cancer patients.

- *Phase 2* clinical trials are generally conducted in a limited patient population to identify possible adverse effects and safety risks, evaluate the efficacy of the product candidate for specific targeted indications and determine dose tolerance and optimal dosage. Multiple Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more costly Phase 3 clinical trials.

- *Phase 3* clinical trials proceed if the Phase 2 clinical trials demonstrate that a dose range of the product candidate is potentially effective and has an acceptable safety profile. Phase 3 clinical trials are undertaken within an expanded patient population to further evaluate dosage, provide substantial evidence of clinical efficacy, and further test for safety in an expanded and diverse patient population at multiple, geographically dispersed clinical trial sites. A well-controlled, statistically robust Phase 3 trial may be designed to deliver the data that regulatory authorities will use to decide whether or not to approve, and, if approved, how to appropriately label a biologic; such Phase 3 studies are referred to as "pivotal."

In some cases, the FDA may approve a BLA for a product candidate but require the sponsor to conduct additional clinical trials to further assess the product candidate's safety and effectiveness after approval. Such

post-approval trials are typically referred to as Phase 4 clinical trials. These studies are used to gain additional experience from the treatment of patients in the intended therapeutic indication and to document a clinical benefit in the case of biologics approved under accelerated approval regulations. If the FDA approves a product while a company has ongoing clinical trials that were not necessary for approval, a company may be able to use the data from these clinical trials to meet all or part of any Phase 4 clinical trial requirement or to request a change in the product labeling. Failure to exhibit due diligence with regard to conducting Phase 4 clinical trials could result in withdrawal of approval for products.

Under the Pediatric Research Equity Act of 2003, a BLA or supplement thereto must contain data that are adequate to assess the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations, and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective. Sponsors must also submit pediatric study plans prior to the assessment data. Those plans must contain an outline of the proposed pediatric study or studies the applicant plans to conduct, including study objectives and design, any deferral or waiver requests, and other information required by regulation. The applicant, the FDA, and the FDA's internal review committee must then review the information submitted, consult with each other, and agree upon a final plan. The FDA or the applicant may request an amendment to the plan at any time.

For products intended to treat a serious or life-threatening disease or condition, the FDA must, upon the request of an applicant, meet to discuss preparation of the initial pediatric study plan or to discuss deferral or waiver of pediatric assessments. In addition, FDA will meet early in the development process to discuss pediatric study plans with sponsors and FDA must meet with sponsors by no later than the end-of-phase 1 meeting for serious or life-threatening diseases and by no later than 90 days after FDA's receipt of the study plan.

The FDA may, on its own initiative or at the request of the applicant, grant deferrals for submission of some or all pediatric data until after approval of the product for use in adults, or full or partial waivers from the pediatric data requirements. Additional requirements and procedures relating to deferral requests and requests for extension of deferrals are contained in FDASIA. Unless otherwise required by regulation, the pediatric data requirements do not apply to products with orphan designation.

Information about clinical trials must be submitted within specific timeframes to the NIH for public dissemination on its ClinicalTrials.gov website.

Special Regulations and Guidance Governing Gene Therapy Products

It is possible that the procedures and standards applied to gene therapy products and cell therapy products may be applied to any CRISPR product candidates we may develop, but that remains uncertain at this point. The FDA has defined a gene therapy product as one that mediates its effects by transcription and/or translation of transferred genetic material and/or by integrating into the host genome and which are administered as nucleic acids, viruses, or genetically engineered microorganisms. The products may be used to modify cells *in vivo* or transferred to cells *ex vivo* prior to administration to the recipient.

Within the FDA, the Center for Biologics Evaluation and Research ("CBER") regulates gene therapy products. Within the CBER, the review of gene therapy and related products is consolidated in the Office of Cellular, Tissue and Gene Therapies, and the FDA has established the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its reviews. The NIH, including its Novel and Exceptional Technology Research Advisory Committee ("NExTRAC"), also advises the FDA on gene therapy issues and other issues related to emerging biotechnologies. The FDA and the NIH have published guidance documents with respect to the development and submission of gene therapy protocols.

The FDA has issued various guidance documents regarding gene therapies, including recent final guidance documents released in January 2020 relating to chemistry, manufacturing and controls information for gene therapy INDs, long-term follow-up after the administration of gene therapy products, gene therapies for rare diseases and gene therapies for retinal disorders. Although the FDA has indicated that these and other guidance documents it previously issued are not legally binding, compliance with them is likely necessary to gain approval for any gene therapy product

candidate. The guidance documents provide additional factors that the FDA will consider at each of the above stages of development and relate to, among other things, the proper preclinical assessment of gene therapies; the chemistry, manufacturing, and control information that should be included in an IND application; the proper design of tests to measure product potency in support of an IND or BLA application; and measures to observe delayed adverse effects in subjects who have been exposed to investigational gene therapies when the risk of such effects is high. Further, the FDA usually recommends that sponsors observe subjects for potential gene therapy-related delayed adverse events for a 15-year period, including a minimum of five years of annual examinations followed by 10 years of annual queries, either in person or by questionnaire.

Until 2019, most gene therapy clinical trials required pre-review by the predecessor of NExTRAC before being submitted for approval by the IRBs and any local biosafety boards. In 2019, the NIH eliminated the pre-review process and going forward, the review of future gene therapy clinical trial protocols would be largely handled by IRBs. Furthermore, in 2019, the NIH removed from public access the Genetic Modification Clinical Research Information System database, which previously contained substantial amounts of safety and other patient information regarding human gene therapy studies performed to date.

Compliance with cGMP and GTP Requirements

Before approving a BLA, the FDA typically will inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in full compliance with cGMP requirements and adequate to assure consistent production of the product within required specifications. The PHSA emphasizes the importance of manufacturing control for products like biologics whose attributes cannot be precisely defined.

For a gene therapy product, the FDA also will not approve the product if the manufacturer is not in compliance with GTP. These standards are found in FDA regulations and guidances that govern the methods used in, and the facilities and controls used for, the manufacture of human cells, tissues, and cellular and tissue-based products (“HCT/Ps”), which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue-based products are manufactured in a manner designed to prevent the introduction, transmission, and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing.

Manufacturers and others involved in the manufacture and distribution of products must also register their establishments with the FDA and certain state agencies. Both domestic and foreign manufacturing establishments must register and provide additional information to the FDA upon their initial participation in the manufacturing process. Any product manufactured by or imported from a facility that has not registered, whether foreign or domestic, is deemed misbranded under the FDCA. Establishments may be subject to periodic unannounced inspections by government authorities to ensure compliance with cGMPs and other laws. Inspections must follow a “risk-based schedule” that may result in certain establishments being inspected more frequently. Manufacturers may also have to provide, on request, electronic or physical records regarding their establishments. Delaying, denying, limiting, or refusing inspection by the FDA may lead to a product being deemed to be adulterated.

Review and Approval of a BLA

The results of product candidate development, preclinical testing, and clinical trials, including negative or ambiguous results as well as positive findings, are submitted to the FDA as part of a BLA requesting license to market the product. The BLA must contain extensive manufacturing information and detailed information on the composition of the product and proposed labeling as well as payment of a user fee. Under federal law, the submission of most BLAs is subject to an application user fee, which for federal fiscal year 2020 is $2,942,965 for an application requiring clinical data. The sponsor of a licensed BLA is also subject to an annual program fee, which for fiscal year 2020 is $325,424. Certain exceptions and waivers are available for some of these fees, such as an exception from the application fee for products with orphan designation and a waiver for certain small businesses.

The FDA has 60 days after submission of the application to conduct an initial review to determine whether it is sufficient to accept for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission has been accepted for filing, the FDA begins an in-depth review of the application. Under the goals and policies agreed to by the FDA under the PDUFA, the FDA has ten months in which to complete its initial review of a standard application and respond to the applicant, and six months for a priority review of the application. The FDA does not always meet its PDUFA goal dates for standard and priority BLAs. The review process may often be significantly extended by FDA requests for additional information or clarification. The review process and the PDUFA goal date may be extended by three months if the FDA requests or if the applicant otherwise provides additional information or clarification regarding information already provided in the submission within the last three months before the PDUFA goal date.

Under the PHSA, the FDA may approve a BLA if it determines that the product is safe, pure, and potent and the facility where the product will be manufactured meets standards designed to ensure that it continues to be safe, pure, and potent.

On the basis of the FDA's evaluation of the application and accompanying information, including the results of the inspection of the manufacturing facilities and any FDA audits of non-clinical and clinical trial sites to assure compliance with GCPs, the FDA may issue an approval letter or a complete response letter. An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. If the application is not approved, the FDA will issue a complete response letter, which will contain the conditions that must be met in order to secure final approval of the application, and when possible will outline recommended actions the sponsor might take to obtain approval of the application. Sponsors that receive a complete response letter may submit to the FDA information that represents a complete response to the issues identified by the FDA. Such resubmissions are classified under PDUFA as either Class 1 or Class 2. The classification of a resubmission is based on the information submitted by an applicant in response to an action letter. Under the goals and policies agreed to by the FDA under PDUFA, the FDA has two months to review a Class 1 resubmission and six months to review a Class 2 resubmission. The FDA will not approve an application until issues identified in the complete response letter have been addressed.

The FDA may also refer the application to an advisory committee for review, evaluation, and recommendation as to whether the application should be approved. In particular, the FDA may refer applications for novel biologic products or biologic products that present difficult questions of safety or efficacy to an advisory committee. Typically, an advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates, and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

If the FDA approves a new product, it may limit the approved indications for use of the product. It may also require that contraindications, warnings or precautions be included in the product labeling. In addition, the FDA may call for post-approval studies, including Phase 4 clinical trials, to further assess the product's safety after approval. The agency may also require testing and surveillance programs to monitor the product after commercialization, or impose other conditions, including distribution restrictions or other risk management mechanisms, including REMS, to help ensure that the benefits of the product outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use ("ETASU"). ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patent registries. The FDA may prevent or limit further marketing of a product based on the results of post-market studies or surveillance programs. After approval, many types of changes to the approved product, such as adding new indications, manufacturing changes and additional labeling claims, are subject to further testing requirements and FDA review and approval.

Fast Track, Breakthrough Therapy, Priority Review and Regenerative Advanced Therapy Designations

The FDA is authorized to designate certain products for expedited review if they are intended to address an unmet medical need in the treatment of a serious or life-threatening disease or condition. These programs are referred to

as fast track designation, breakthrough therapy designation, priority review designation and regenerative advanced therapy designation.

Specifically, the FDA may designate a product for fast track review if it is intended, whether alone or in combination with one or more other products, for the treatment of a serious or life-threatening disease or condition, and it demonstrates the potential to address unmet medical needs for such a disease or condition. For fast track products, sponsors may have greater interactions with the FDA and the FDA may initiate review of sections of a fast track product's application before the application is complete. This rolling review may be available if the FDA determines, after preliminary evaluation of clinical data submitted by the sponsor, that a fast track product may be effective. The sponsor must also provide, and the FDA must approve, a schedule for the submission of the remaining information and the sponsor must pay applicable user fees. However, the FDA's time period goal for reviewing a fast track application does not begin until the last section of the application is submitted. In addition, the fast track designation may be withdrawn by the FDA if the FDA believes that the designation is no longer supported by data emerging in the clinical trial process.

Second, in 2012, Congress enacted the Food and Drug Administration Safety and Innovation Act ("FDASIA"). This law established a new regulatory scheme allowing for expedited review of products designated as "breakthrough therapies." A product may be designated as a breakthrough therapy if it is intended, either alone or in combination with one or more other products, to treat a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The FDA may take certain actions with respect to breakthrough therapies, including holding meetings with the sponsor throughout the development process; providing timely advice to the product sponsor regarding development and approval; involving more senior staff in the review process; assigning a cross-disciplinary project lead for the review team; and taking other steps to design the clinical trials in an efficient manner.

Third, the FDA may designate a product for priority review if it is a product that treats a serious condition and, if approved, would provide a significant improvement in safety or effectiveness. The FDA determines, on a case-by-case basis, whether the proposed product represents a significant improvement when compared with other available therapies. Significant improvement may be illustrated by evidence of increased effectiveness in the treatment of a condition, elimination or substantial reduction of a treatment-limiting product reaction, documented enhancement of patient compliance that may lead to improvement in serious outcomes, and evidence of safety and effectiveness in a new subpopulation. A priority designation is intended to direct overall attention and resources to the evaluation of such applications, and to shorten the FDA's goal for taking action on a marketing application from ten months to six months.

With passage of the Cures Act in December 2016, Congress authorized the FDA to accelerate review and approval of products designated as regenerative advanced therapies. A product is eligible for this designation if it is a regenerative medicine therapy that is intended to treat, modify, reverse or cure a serious or life-threatening disease or condition and preliminary clinical evidence indicates that the product has the potential to address unmet medical needs for such disease or condition. The benefits of a regenerative advanced therapy designation include early interactions with FDA to expedite development and review, benefits available to breakthrough therapies, potential eligibility for priority review and accelerated approval based on surrogate or intermediate endpoints.

Accelerated Approval Pathway

The FDA may grant accelerated approval to a product for a serious or life-threatening condition that provides meaningful therapeutic advantage to patients over existing treatments based upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit. The FDA may also grant accelerated approval for such a condition when the product has an effect on an intermediate clinical endpoint that can be measured earlier than an effect on irreversible morbidity or mortality ("IMM") and that is reasonably likely to predict an effect on IMM or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. Products granted accelerated approval must meet the same statutory standards for safety and effectiveness as those granted traditional approval.

For the purposes of accelerated approval, a surrogate endpoint is a marker, such as a laboratory measurement, radiographic image, physical sign, or other measure that is thought to predict clinical benefit, but is not itself a measure of clinical benefit. Surrogate endpoints can often be measured more easily or more rapidly than clinical endpoints. An intermediate clinical endpoint is a measurement of a therapeutic effect that is considered reasonably likely to predict the clinical benefit of a product, such as an effect on IMM. The FDA has limited experience with accelerated approvals based on intermediate clinical endpoints, but has indicated that such endpoints generally may support accelerated approval where the therapeutic effect measured by the endpoint is not itself a clinical benefit and basis for traditional approval, if there is a basis for concluding that the therapeutic effect is reasonably likely to predict the ultimate clinical benefit of a product.

The accelerated approval pathway is most often used in settings in which the course of a disease is long and an extended period of time is required to measure the intended clinical benefit of a product, even if the effect on the surrogate or intermediate clinical endpoint occurs rapidly. Thus, accelerated approval has been used extensively in the development and approval of products for treatment of a variety of cancers in which the goal of therapy is generally to improve survival or decrease morbidity and the duration of the typical disease course requires lengthy and sometimes large trials to demonstrate a clinical or survival benefit.

The accelerated approval pathway is usually contingent on a sponsor's agreement to conduct, in a diligent manner, additional post-approval confirmatory studies to verify and describe the product's clinical benefit. As a result, a product candidate approved on this basis is subject to rigorous post-marketing compliance requirements, including the completion of Phase 4 or post-approval clinical trials to confirm the effect on the clinical endpoint. Failure to conduct required post-approval studies, or confirm a clinical benefit during post-marketing studies, would allow the FDA to withdraw the product from the market on an expedited basis. All promotional materials for product candidates approved under accelerated regulations are subject to prior review by the FDA.

Post-Approval Regulation

If regulatory approval for marketing of a product or new indication for an existing product is obtained, the sponsor will be required to comply with all regular post-approval regulatory requirements as well as any post-approval requirements that the FDA have imposed as part of the approval process. The sponsor will be required to report certain adverse reactions and production problems to the FDA, provide updated safety and efficacy information and comply with requirements concerning advertising and promotional labeling requirements. Manufacturers and certain of their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with ongoing regulatory requirements, including cGMP regulations, which impose certain procedural and documentation requirements upon manufacturers. Accordingly, the sponsor and its third-party manufacturers must continue to expend time, money, and effort in the areas of production and quality control to maintain compliance with cGMP regulations and other regulatory requirements.

A product may also be subject to official lot release, meaning that the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official lot release, the manufacturer must submit samples of each lot, together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot, to the FDA. The FDA may in addition perform certain confirmatory tests on lots of some products before releasing the lots for distribution. Finally, the FDA will conduct laboratory research related to the safety, purity, potency, and effectiveness of pharmaceutical products.

Once an approval is granted, the FDA may withdraw the approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical trials to assess new safety risks; or

imposition of distribution or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters or holds on post-approval clinical trials;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product license approvals;
- product seizure or detention, or refusal to permit the import or export of products; or
- injunctions or the imposition of civil or criminal penalties.

The FDA strictly regulates marketing, labeling, advertising and promotion of products that are placed on the market. Pharmaceutical products may be promoted only for the approved indications and in accordance with the provisions of the approved label. Although health care providers may prescribe products for off-label uses in their professional judgment, drug manufacturers are prohibited from soliciting, encouraging or promoting unapproved uses of a product. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses, and a company that is found to have improperly promoted off-label uses may be subject to significant liability.

The FDA strictly regulates the marketing, labeling, advertising and promotion of prescription drug products placed on the market. This regulation includes, among other things, standards and regulations for direct-to-consumer advertising, communications regarding unapproved uses, industry-sponsored scientific and educational activities and promotional activities involving the Internet and social media. Promotional claims about a drug's safety or effectiveness are prohibited before the drug is approved. After approval, a drug product generally may not be promoted for uses that are not approved by the FDA, as reflected in the product's prescribing information. In the United States, health care professionals are generally permitted to prescribe drugs for such uses not described in the drug's labeling, known as off-label uses, because the FDA does not regulate the practice of medicine. However, FDA regulations impose rigorous restrictions on manufacturers' communications, prohibiting the promotion of off-label uses. It may be permissible, under very specific, narrow conditions, for a manufacturer to engage in nonpromotional, non-misleading communication regarding off-label information, such as distributing scientific or medical journal information.

If a company is found to have promoted off-label uses, it may become subject to adverse public relations and administrative and judicial enforcement by the FDA, the DOJ, or the Office of the Inspector General of the Department of Health and Human Services, as well as state authorities. This could subject a company to a range of penalties that could have a significant commercial impact, including civil and criminal fines and agreements that materially restrict the manner in which a company promotes or distributes drug products. The federal government has levied large civil and criminal fines against companies for alleged improper promotion, and has also requested that companies enter into consent decrees or permanent injunctions under which specified promotional conduct is changed or curtailed.

Orphan Drug Designation

Orphan drug designation in the United States is designed to encourage sponsors to develop products intended for rare diseases or conditions. In the United States, a rare disease or condition is statutorily defined as a condition that affects fewer than 200,000 individuals in the United States or that affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available the biologic for the disease or condition will be recovered from sales of the product in the United States.

Orphan drug designation qualifies a company for tax credits and market exclusivity for seven years following the date of the product's marketing approval if granted by the FDA. An application for designation as an orphan product can be made any time prior to the filing of an application for approval to market the product. A product becomes an

orphan when it receives orphan drug designation from the Office of Orphan Products Development at the FDA based on acceptable confidential requests made under the regulatory provisions. The product must then go through the review and approval process like any other product.

A sponsor may request orphan drug designation of a previously unapproved product or new orphan indication for an already marketed product. In addition, a sponsor of a product that is otherwise the same product as an already approved orphan drug may seek and obtain orphan drug designation for the subsequent product for the same rare disease or condition if it can present a plausible hypothesis that its product may be clinically superior to the first drug. More than one sponsor may receive orphan drug designation for the same product for the same rare disease or condition, but each sponsor seeking orphan drug designation must file a complete request for designation.

If a product with orphan designation receives the first FDA approval for the disease or condition for which it has such designation or for a select indication or use within the rare disease or condition for which it was designated, the product generally will receive orphan drug exclusivity. Orphan drug exclusivity means that the FDA may not approve another sponsor's marketing application for the same product for the same indication for seven years, except in certain limited circumstances. In particular, the concept of what constitutes the "same drug" for purposes of orphan drug exclusivity remains in flux in the context of gene therapies, and the FDA has issued recent draft guidance suggesting that it would not consider two gene therapy products to be different drugs solely based on minor differences in the transgenes or vectors. If a product designated as an orphan drug ultimately receives marketing approval for an indication broader than what was designated in its orphan drug application, it may not be entitled to exclusivity.

The period of exclusivity begins on the date that the marketing application is approved by the FDA and applies only to the indication for which the product has been designated. The FDA may approve a second application for the same product for a different use or a second application for a clinically superior version of the product for the same use. The FDA cannot, however, approve the same product made by another manufacturer for the same indication during the market exclusivity period unless it has the consent of the sponsor or the sponsor is unable to provide sufficient quantities.

Pediatric Exclusivity

Pediatric exclusivity is another type of non-patent marketing exclusivity in the United States and, if granted, provides for the attachment of an additional six months of marketing protection to the term of any existing regulatory exclusivity, including the non-patent and orphan exclusivity. This six-month exclusivity may be granted if a BLA sponsor submits pediatric data that fairly respond to a written request from the FDA for such data. The data do not need to show the product to be effective in the pediatric population studied; rather, if the clinical trial is deemed to fairly respond to the FDA's request, the additional protection is granted. If reports of requested pediatric studies are submitted to and accepted by the FDA within the statutory time limits, whatever statutory or regulatory periods of exclusivity or patent protection cover the product are extended by six months. This is not a patent term extension, but it effectively extends the regulatory period during which the FDA cannot approve another application.

Biosimilars and Exclusivity

The 2010 Patient Protection and Affordable Care Act, which was signed into law in March 2010, included a subtitle called the Biologics Price Competition and Innovation Act of 2009 ("BPCIA"). The BPCIA established a regulatory scheme authorizing the FDA to approve biosimilars and interchangeable biosimilars. A biosimilar is a biological product that is highly similar to an existing FDA-licensed "reference product." As of January 1, 2020, the FDA has approved 26 biosimilar products for use in the United States. No interchangeable biosimilars, however, have been approved. The FDA has issued several guidance documents outlining an approach to review and approval of biosimilars. Additional guidances are expected to be finalized by the FDA in the near term.

Under the BPCIA, a manufacturer may submit an application for licensure of a biologic product that is "biosimilar to" or "interchangeable with" a previously approved biological product or "reference product." In order for the FDA to approve a biosimilar product, it must find that there are no clinically meaningful differences between the reference product and proposed biosimilar product in terms of safety, purity, and potency. For the FDA to approve a

biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product, and (for products administered multiple times) that the biologic and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic.

Under the BPCIA, an application for a biosimilar product may not be submitted to the FDA until four years following the date of approval of the reference product. The FDA may not approve a biosimilar product until 12 years from the date on which the reference product was approved. Even if a product is considered to be a reference product eligible for exclusivity, another company could market a competing version of that product if the FDA approves a full BLA for such product containing the sponsor's own preclinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of their product. The BPCIA also created certain exclusivity periods for biosimilars approved as interchangeable products. At this juncture, it is unclear whether products deemed "interchangeable" by the FDA will, in fact, be readily substituted by pharmacies, which are governed by state pharmacy law. Since the passage of the BPCIA, many states have passed laws or amendments to laws, including laws governing pharmacy practices, which are state-regulated, to regulate the use of biosimilars.

Patent Term Restoration and Extension

A patent claiming a new biologic product, its method of use or its method of manufacture may be eligible for a limited patent term extension under the Hatch-Waxman Act, which permits a patent restoration of up to five years for patent term lost during product development and FDA regulatory review. The restoration period granted on a patent covering a product is typically one-half the time between the effective date of a clinical investigation involving human beings is begun and the submission date of an application, plus the time between the submission date of an application and the ultimate approval date. Patent term restoration cannot be used to extend the remaining term of a patent past a total of 14 years from the product's approval date. Only one patent applicable to an approved product is eligible for the extension, and the application for the extension must be submitted prior to the expiration of the patent in question. A patent that covers multiple products for which approval is sought can only be extended in connection with one of the approvals. The USPTO reviews and approves the application for any patent term extension or restoration in consultation with the FDA.

FDA Approval of Companion Diagnostics

In August 2014, the FDA issued final guidance clarifying the requirements that will apply to approval of therapeutic products and *in vitro* companion diagnostics. According to the guidance, for novel drugs, a companion diagnostic device and its corresponding therapeutic should be approved or cleared contemporaneously by the FDA for the use indicated in the therapeutic product's labeling. Approval or clearance of the companion diagnostic device will ensure that the device has been adequately evaluated and has adequate performance characteristics in the intended population. In July 2016, the FDA issued a draft guidance intended to assist sponsors of the drug therapeutic and *in vitro* companion diagnostic device on issues related to co-development of the products.

Under the FDCA, *in vitro* diagnostics, including companion diagnostics, are regulated as medical devices. In the United States, the FDCA and its implementing regulations, and other federal and state statutes and regulations govern, among other things, medical device design and development, preclinical and clinical testing, premarket clearance or approval, registration and listing, manufacturing, labeling, storage, advertising and promotion, sales and distribution, export and import, and post-market surveillance. Unless an exemption applies, diagnostic tests require marketing clearance or approval from the FDA prior to commercial distribution.

The FDA previously has required *in vitro* companion diagnostics intended to select the patients who will respond to the product candidate to obtain pre-market approval ("PMA") simultaneously with approval of the therapeutic product candidate. The PMA process, including the gathering of clinical and preclinical data and the submission to and review by the FDA, can take several years or longer. It involves a rigorous premarket review during which the applicant must prepare and provide the FDA with reasonable assurance of the device's safety and effectiveness and information about the device and its components regarding, among other things, device design, manufacturing and labeling. PMA

applications are subject to an application fee. For federal fiscal year 2020, the standard fee is $340,995 and the small business fee is $85,249.

A clinical trial is typically required for a PMA application and, in a small percentage of cases, the FDA may require a clinical study in support of a 510(k) submission. A manufacturer that wishes to conduct a clinical study involving the device is subject to the FDA's IDE regulation. The IDE regulation distinguishes between significant and non-significant risk device studies and the procedures for obtaining approval to begin the study differ accordingly. Also, some types of studies are exempt from the IDE regulations. A significant risk device presents a potential for serious risk to the health, safety, or welfare of a subject. Significant risk devices are devices that are substantially important in diagnosing, curing, mitigating, or treating disease or in preventing impairment to human health. Studies of devices that pose a significant risk require both FDA and an IRB approval prior to initiation of a clinical study. Non-significant risk devices are devices that do not pose a significant risk to the human subjects. A non-significant risk device study requires only IRB approval prior to initiation of a clinical study.

After a device is placed on the market, it remains subject to significant regulatory requirements. Medical devices may be marketed only for the uses and indications for which they are cleared or approved. Device manufacturers must also establish registration and device listings with the FDA. A medical device manufacturer's manufacturing processes and those of its suppliers are required to comply with the applicable portions of the Quality System Regulation, which covers the methods and documentation of the design, testing, production, processes, controls, quality assurance, labeling, packaging and shipping of medical devices. Domestic facility records and manufacturing processes are subject to periodic unscheduled inspections by the FDA. The FDA also may inspect foreign facilities that export products to the United States.

Regulation and Procedures Governing Approval of Medicinal Products in the European Union

In order to market any product outside of the United States, a company must also comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of products. Whether or not it obtains FDA approval for a product, an applicant will need to obtain the necessary approvals by the comparable foreign regulatory authorities before it can commence clinical trials or marketing of the product in those countries or jurisdictions. Specifically, the process governing approval of medicinal products in the European Union generally follows the same lines as in the United States. It entails satisfactory completion of preclinical studies and adequate and well-controlled clinical trials to establish the safety and efficacy of the product for each proposed indication. It also requires the submission to the relevant competent authorities of a marketing authorization application ("MAA") and granting of a marketing authorization by these authorities before the product can be marketed and sold in the European Union.

Clinical Trial Approval

Pursuant to the currently applicable Clinical Trials Directive 2001/20/EC and the Directive 2005/28/EC on GCP, a system for the approval of clinical trials in the European Union has been implemented through national legislation of the member states. Under this system, an applicant must obtain approval from the competent national authority of a European Union member state in which the clinical trial is to be conducted, or in multiple member states if the clinical trial is to be conducted in a number of member states. Furthermore, the applicant may only start a clinical trial at a specific study site after the competent ethics committee has issued a favorable opinion. The clinical trial application must be accompanied by an investigational medicinal product dossier with supporting information prescribed by Directive 2001/20/EC and Directive 2005/28/EC and corresponding national laws of the member states and further detailed in applicable guidance documents.

In April 2014, the European Union adopted a new Clinical Trials Regulation (EU) No 536/2014, but it has not yet become effective. It will overhaul the current system of approvals for clinical trials in the European Union. Specifically, the new legislation, which will be directly applicable in all member states, aims at simplifying and streamlining the approval of clinical trials in the European Union. For instance, the new Clinical Trials Regulation

provides for a streamlined application procedure via a single-entry point and strictly defined deadlines for the assessment of clinical trial applications.

As of January 1, 2020, the website of the European Commission reported that the implementation of the new Clinical Trials Regulation was dependent on the development of a fully functional clinical trials portal and database, which would be confirmed by an independent audit, and that the new legislation would come into effect six months after the European Commission publishes a notice of this confirmation. The website indicated that the audit was expected to commence in December 2020.

Parties conducting certain clinical studies must, as in the U.S., post clinical trial information in the European Union at the EudraCT website: https://eudract.ema.europa.eu.

PRIME Designation in the EU

In March 2016, the European Medicines Agency ("EMA") launched an initiative to facilitate development of product candidates in indications, often rare, for which few or no therapies currently exist. The PRIority Medicines ("PRIME") scheme is intended to encourage drug development in areas of unmet medical need and provides accelerated assessment of products representing substantial innovation reviewed under the centralized procedure. Products from small- and medium-sized enterprises may qualify for earlier entry into the PRIME scheme than larger companies. Many benefits accrue to sponsors of product candidates with PRIME designation, including but not limited to, early and proactive regulatory dialogue with the EMA, frequent discussions on clinical trial designs and other development program elements, and accelerated marketing authorization application assessment once a dossier has been submitted. Importantly, a dedicated EMA contact and rapporteur from the Committee for Human Medicinal Products ("CHMP") or Committee for Advanced Therapies are appointed early in the PRIME scheme facilitating increased understanding of the product at the EMA's Committee level. A kick-off meeting initiates these relationships and includes a team of multidisciplinary experts at the EMA to provide guidance on the overall development and regulatory strategies.

Marketing Authorization

To obtain a marketing authorization for a product under the European Union regulatory system, an applicant must submit an MAA, either under a centralized procedure administered by the EMA or one of the procedures administered by competent authorities in European Union Member States (decentralized procedure, national procedure, or mutual recognition procedure). A marketing authorization may be granted only to an applicant established in the European Union. Regulation (EC) No 1901/2006 provides that prior to obtaining a marketing authorization in the European Union, an applicant must demonstrate compliance with all measures included in an EMA-approved Pediatric Investigation Plan ("PIP"), covering all subsets of the pediatric population, unless the EMA has granted a product-specific waiver, class waiver, or a deferral for one or more of the measures included in the PIP.

The centralized procedure provides for the grant of a single marketing authorization by the European Commission that is valid for all EU member states. Pursuant to Regulation (EC) No. 726/2004, the centralized procedure is compulsory for specific products, including for medicines produced by certain biotechnological processes, products designated as orphan medicinal products, advanced therapy products and products with a new active substance indicated for the treatment of certain diseases, including products for the treatment of cancer. For products with a new active substance indicated for the treatment of other diseases and products that are highly innovative or for which a centralized process is in the interest of patients, the centralized procedure may be optional. Manufacturers must demonstrate the quality, safety, and efficacy of their products to the EMA, which provides an opinion regarding the MAA. The European Commission grants or refuses marketing authorization in light of the opinion delivered by the EMA.

Specifically, the grant of marketing authorization in the European Union for products containing viable human tissues or cells such as gene therapy medicinal products is governed by Regulation 1394/2007/EC on advanced therapy medicinal products, read in combination with Directive 2001/83/EC of the European Parliament and of the Council, commonly known as the Community code on medicinal products. Regulation 1394/2007/EC lays down specific rules concerning the authorization, supervision, and pharmacovigilance of gene therapy medicinal products, somatic cell therapy medicinal products, and tissue engineered products. Manufacturers of advanced therapy medicinal products must

demonstrate the quality, safety, and efficacy of their products to EMA which provides an opinion regarding the application for marketing authorization. The European Commission grants or refuses marketing authorization in light of the opinion delivered by EMA.

Under the centralized procedure, the CHMP established at the EMA is responsible for conducting an initial assessment of a product. Under the centralized procedure in the European Union, the maximum timeframe for the evaluation of an MAA is 210 days, excluding clock stops when additional information or written or oral explanation is to be provided by the applicant in response to questions of the CHMP. Accelerated evaluation may be granted by the CHMP in exceptional cases, when a medicinal product is of major interest from the point of view of public health and, in particular, from the viewpoint of therapeutic innovation. If the CHMP accepts such a request, the time limit of 210 days will be reduced to 150 days, but it is possible that the CHMP may revert to the standard time limit for the centralized procedure if it determines that it is no longer appropriate to conduct an accelerated assessment.

Specialized Procedures for Gene Therapies

The grant of marketing authorization in the European Union for gene therapy products is governed by Regulation 1394/2007/EC on advanced therapy medicinal products, read in combination with Directive 2001/83/EC of the European Parliament and of the Council, commonly known as the Community code on medicinal products. Regulation 1394/2007/EC includes specific rules concerning the authorization, supervision, and pharmacovigilance of gene therapy medicinal products. Manufacturers of advanced therapy medicinal products must demonstrate the quality, safety, and efficacy of their products to the EMA, which provides an opinion regarding the MAA. The European Commission grants or refuses marketing authorization in light of the opinion delivered by the EMA.

Regulatory Data Protection in the European Union

In the European Union, new chemical entities approved on the basis of a complete independent data package qualify for eight years of data exclusivity upon marketing authorization and an additional two years of market exclusivity pursuant to Regulation (EC) No 726/2004, as amended, and Directive 2001/83/EC, as amended. Data exclusivity prevents regulatory authorities in the European Union from referencing the innovator's data to assess a generic (abbreviated) application for a period of eight years. During the additional two-year period of market exclusivity, a generic marketing authorization application can be submitted, and the innovator's data may be referenced, but no generic medicinal product can be marketed until the expiration of the market exclusivity. The overall ten-year period will be extended to a maximum of eleven years if, during the first eight years of those ten years, the marketing authorization holder obtains an authorization for one or more new therapeutic indications which, during the scientific evaluation prior to authorization, is held to bring a significant clinical benefit in comparison with existing therapies. Even if a compound is considered to be a new chemical entity so that the innovator gains the prescribed period of data exclusivity, another company may market another version of the product if such company obtained marketing authorization based on an MAA with a complete independent data package of pharmaceutical tests, preclinical tests and clinical trials.

Patent Term Extensions in the European Union and Other Jurisdictions

The European Union also provides for patent term extension through Supplementary Protection Certificates, or SPCs. The rules and requirements for obtaining a SPC are similar to those in the United States. An SPC may extend the term of a patent for up to five years after its originally scheduled expiration date and can provide up to a maximum of fifteen years of marketing exclusivity for a drug. These periods can be extended for six additional months if pediatric exclusivity is obtained, which is described in detail below. Although SPCs are available throughout the European Union, sponsors must apply on a country-by-country basis. Similar patent term extension rights exist in certain other foreign jurisdictions outside the European Union.

Periods of Authorization and Renewals

A marketing authorization is valid for five years, in principle, and it may be renewed after five years on the basis of a reevaluation of the risk-benefit balance by the EMA or by the competent authority of the authorizing member

state. To that end, the marketing authorization holder must provide the EMA or the competent authority with a consolidated version of the file in respect of quality, safety and efficacy, including all variations introduced since the marketing authorization was granted, at least six months before the marketing authorization ceases to be valid. Once renewed, the marketing authorization is valid for an unlimited period, unless the European Commission or the competent authority decides, on justified grounds relating to pharmacovigilance, to proceed with one additional five-year renewal period. Any authorization that is not followed by the placement of the drug on the EU market (in the case of the centralized procedure) or on the market of the authorizing member state within three years after authorization ceases to be valid.

Regulatory Requirements after Marketing Authorization

Following approval, the holder of the marketing authorization is required to comply with a range of requirements applicable to the manufacturing, marketing, promotion and sale of the medicinal product. These include compliance with the European Union's stringent pharmacovigilance or safety reporting rules, pursuant to which post-authorization studies and additional monitoring obligations can be imposed. In addition, the manufacturing of authorized products, for which a separate manufacturer's license is mandatory, must also be conducted in strict compliance with the EMA's GMP requirements and comparable requirements of other regulatory bodies in the European Union, which mandate the methods, facilities, and controls used in manufacturing, processing and packing of drugs to assure their safety and identity. Finally, the marketing and promotion of authorized products, including industry-sponsored continuing medical education and advertising directed toward the prescribers of drugs and/or the general public, are strictly regulated in the European Union under Directive 2001/83EC, as amended.

Orphan Drug Designation and Exclusivity

Regulation (EC) No 141/2000 and Regulation (EC) No. 847/2000 provide that a product can be designated as an orphan drug by the European Commission if its sponsor can establish: that the product is intended for the diagnosis, prevention or treatment of (1) a life-threatening or chronically debilitating condition affecting not more than five in ten thousand persons in the European Union when the application is made, or (2) a life-threatening, seriously debilitating or serious and chronic condition in the European Union and that without incentives it is unlikely that the marketing of the drug in the European Union would generate sufficient return to justify the necessary investment. For either of these conditions, the applicant must demonstrate that there exists no satisfactory method of diagnosis, prevention, or treatment of the condition in question that has been authorized in the European Union or, if such method exists, the drug will be of significant benefit to those affected by that condition.

An orphan drug designation provides a number of benefits, including fee reductions, regulatory assistance, and the possibility to apply for a centralized European Union marketing authorization. Marketing authorization for an orphan drug leads to a ten-year period of market exclusivity. During this market exclusivity period, neither the EMA nor the European Commission or the member states can accept an application or grant a marketing authorization for a "similar medicinal product." A "similar medicinal product" is defined as a medicinal product containing a similar active substance or substances as contained in an authorized orphan medicinal product, and which is intended for the same therapeutic indication. The market exclusivity period for the authorized therapeutic indication may, however, be reduced to six years if, at the end of the fifth year, it is established that the product no longer meets the criteria for orphan drug designation because, for example, the product is sufficiently profitable not to justify market exclusivity.

Brexit and the Regulatory Framework in the United Kingdom

On June 23, 2016, the electorate in the United Kingdom voted in favor of leaving the European Union, commonly referred to as Brexit. Following protracted negotiations, the United Kingdom left the European Union on January 31, 2020. Under the withdrawal agreement, there is a transitional period until December 31, 2020 (extendable up to two years). Discussions between the United Kingdom and the European Union have so far mainly focused on finalizing withdrawal issues and transition agreements but have been extremely difficult to date. To date, only an outline of a trade agreement has been reached. Much remains open but the Prime Minister has indicated that the United Kingdom will not seek to extend the transitional period beyond the end of 2020. If no trade agreement has been reached

before the end of the transitional period, there may be significant market and economic disruption. The Prime Minister has also indicated that the United Kingdom will not accept high regulatory alignment with the European Union.

Since the regulatory framework for pharmaceutical products in the United Kingdom covering the quality, safety, and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales, and distribution of pharmaceutical products is derived from European Union directives and regulations, Brexit could materially impact the future regulatory regime that applies to products and the approval of product candidates in the United Kingdom.

General Data Protection Regulation

The collection, use, disclosure, transfer, or other processing of personal data regarding individuals in the EU, including personal health data, is subject to the EU General Data Protection Regulation ("GDPR"), which became effective on May 25, 2018. The GDPR is wide-ranging in scope and imposes numerous requirements on companies that process personal data, including requirements relating to processing health and other sensitive data, obtaining consent of the individuals to whom the personal data relates, providing information to individuals regarding data processing activities, implementing safeguards to protect the security and confidentiality of personal data, providing notification of data breaches, and taking certain measures when engaging third-party processors. The GDPR also imposes strict rules on the transfer of personal data to countries outside the EU, including the U.S., and permits data protection authorities to impose large penalties for violations of the GDPR, including potential fines of up to €20 million or 4% of annual global revenues, whichever is greater. The GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints with supervisory authorities, seek judicial remedies, and obtain compensation for damages resulting from violations of the GDPR. Compliance with the GDPR will be a rigorous and time-intensive process that may increase the cost of doing business or require companies to change their business practices to ensure full compliance.

Coverage, Pricing, and Reimbursement

Significant uncertainty exists as to the coverage and reimbursement status of any product candidates for which we may seek regulatory approval by the FDA or other government authorities. In the United States and markets in other countries, patients who are prescribed treatments for their conditions and providers performing the prescribed services generally rely on third-party payors to reimburse all or part of the associated healthcare costs. Patients are unlikely to use any product candidates we may develop unless coverage is provided and reimbursement is adequate to cover a significant portion of the cost of such product candidates. Even if any product candidates we may develop are approved, sales of such product candidates will depend, in part, on the extent to which third-party payors, including government health programs in the United States such as Medicare and Medicaid, commercial health insurers, and managed care organizations, provide coverage, and establish adequate reimbursement levels for, such product candidates. The process for determining whether a payor will provide coverage for a product may be separate from the process for setting the price or reimbursement rate that the payor will pay for the product once coverage is approved. Third-party payors are increasingly challenging the prices charged, examining the medical necessity, and reviewing the cost-effectiveness of medical products and services and imposing controls to manage costs. Third-party payors may limit coverage to specific products on an approved list, also known as a formulary, which might not include all of the approved products for a particular indication.

In order to secure coverage and reimbursement for any product that might be approved for sale, a company may need to conduct expensive pharmacoeconomic studies in order to demonstrate the medical necessity and cost-effectiveness of the product, in addition to the costs required to obtain FDA or other comparable marketing approvals. Nonetheless, product candidates may not be considered medically necessary or cost effective. A decision by a third-party payor not to cover any product candidates we may develop could reduce physician utilization of such product candidates once approved and have a material adverse effect on our sales, results of operations and financial condition. Additionally, a payor's decision to provide coverage for a product does not imply that an adequate reimbursement rate will be approved. Further, one payor's determination to provide coverage for a product does not assure that other payors will also provide coverage and reimbursement for the product, and the level of coverage and reimbursement can differ

significantly from payor to payor. Third-party reimbursement and coverage may not be available to enable us to maintain price levels sufficient to realize an appropriate return on our investment in product development.

The containment of healthcare costs also has become a priority of federal, state and foreign governments and the prices of pharmaceuticals have been a focus in this effort. Governments have shown significant interest in implementing cost-containment programs, including price controls, restrictions on reimbursement, and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit a company's revenue generated from the sale of any approved products. Coverage policies and third-party reimbursement rates may change at any time. Even if favorable coverage and reimbursement status is attained for one or more products for which a company or its collaborators receive marketing approval, less favorable coverage policies and reimbursement rates may be implemented in the future.

Outside the United States, ensuring adequate coverage and payment for any product candidates we may develop will face challenges. Pricing of prescription pharmaceuticals is subject to governmental control in many countries. Pricing negotiations with governmental authorities can extend well beyond the receipt of regulatory marketing approval for a product and may require us to conduct a clinical trial that compares the cost effectiveness of any product candidates we may develop to other available therapies. The conduct of such a clinical trial could be expensive and result in delays in our commercialization efforts.

In the European Union, pricing and reimbursement schemes vary widely from country to country. Some countries provide that products may be marketed only after a reimbursement price has been agreed. Some countries may require the completion of additional studies that compare the cost-effectiveness of a particular product candidate to currently available therapies (so called health technology assessments) in order to obtain reimbursement or pricing approval. For example, the European Union provides options for its member states to restrict the range of products for which their national health insurance systems provide reimbursement and to control the prices of medicinal products for human use. European Union member states may approve a specific price for a product or it may instead adopt a system of direct or indirect controls on the profitability of the company placing the product on the market. Other member states allow companies to fix their own prices for products, but monitor and control prescription volumes and issue guidance to physicians to limit prescriptions. Recently, many countries in the European Union have increased the amount of discounts required on pharmaceuticals and these efforts could continue as countries attempt to manage healthcare expenditures, especially in light of the severe fiscal and debt crises experienced by many countries in the European Union. The downward pressure on health care costs in general, particularly prescription products, has become intense. As a result, increasingly high barriers are being erected to the entry of new products. Political, economic, and regulatory developments may further complicate pricing negotiations, and pricing negotiations may continue after reimbursement has been obtained. Reference pricing used by various European Union member states, and parallel trade (arbitrage between low-priced and high-priced member states), can further reduce prices. There can be no assurance that any country that has price controls or reimbursement limitations for pharmaceutical products will allow favorable reimbursement and pricing arrangements for any of our products, if approved in those countries.

Healthcare Law and Regulation

Healthcare providers and third-party payors play a primary role in the recommendation and prescription of pharmaceutical products that are granted marketing approval. Arrangements with providers, consultants, third-party payors, and customers are subject to broadly applicable fraud and abuse, anti-kickback, false claims laws, reporting of payments to physicians and teaching physicians and patient privacy laws and regulations and other healthcare laws and regulations that may constrain our business and/or financial arrangements. Restrictions under applicable federal and state healthcare laws and regulations, include the following:

- the U.S. federal Anti-Kickback Statute, which prohibits, among other things, persons and entities from knowingly and willfully soliciting, offering, paying, receiving, or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order or recommendation of, any good or service, for which payment may be made, in whole or in part, under a federal healthcare program such as Medicare and Medicaid;

- the federal civil and criminal false claims laws, including the civil False Claims Act, and civil monetary penalties laws, which prohibit individuals or entities from, among other things, knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false, fictitious, or fraudulent or knowingly making, using, or causing to made or used a false record or statement to avoid, decrease, or conceal an obligation to pay money to the federal government;

- the federal civil monetary penalty and false statement laws and regulations relating to pricing and submission of pricing information for government programs, including penalties for knowingly and intentionally overcharging 340b eligible entities and the submission of false or fraudulent pricing information to government entities;

- the federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), which created additional federal criminal laws that prohibit, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;

- HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act, and their respective implementing regulations, including the Final Omnibus Rule published in January 2013, which impose obligations, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information;

- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing or covering up a material fact or making any materially false statement in connection with the delivery of or payment for health care benefits, items or services;

- the Foreign Corrupt Practices Act, which prohibits companies and their intermediaries from making, or offering or promising to make improper payments to non-U.S. officials for the purpose of obtaining or retaining business or otherwise seeking favorable treatment;

- the federal transparency requirements known as the federal Physician Payments Sunshine Act, under the Patient Protection and Affordable Care Act ("PPACA"), as amended by the Health Care Education Reconciliation Act, which requires certain manufacturers of drugs, devices, biologics and medical supplies to report annually to the Centers for Medicare & Medicaid Services ("CMS") within the U.S. Department of Health and Human Services, information related to payments and other transfers of value made by that entity to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members; and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to healthcare items or services that are reimbursed by non-governmental third-party payors, including private insurers.

Some state laws require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring pharmaceutical manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures. State and foreign laws also govern the privacy and security of health information in some circumstances, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts.

Healthcare Reform

A primary trend in the U.S. healthcare industry and elsewhere is cost containment. There have been a number of federal and state proposals during the last few years regarding the pricing of pharmaceutical and biopharmaceutical

products, limiting coverage and reimbursement for drugs and other medical products, government control and other changes to the healthcare system in the United States.

By way of example, the United States and state governments continue to propose and pass legislation designed to reduce the cost of healthcare. In March 2010, the United States Congress enacted the PPACA, which, among other things, includes changes to the coverage and payment for products under government health care programs. Among the provisions of the PPACA of importance to our potential product candidates are:

- an annual, nondeductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents, apportioned among these entities according to their market share in certain government healthcare programs, although this fee would not apply to sales of certain products approved exclusively for orphan indications;

- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to certain individuals with income at or below 133% of the federal poverty level, thereby potentially increasing a manufacturer's Medicaid rebate liability;

- expanded manufacturers' rebate liability under the Medicaid Drug Rebate Program by increasing the minimum rebate for both branded and generic drugs and revising the definition of "average manufacturer price" for calculating and reporting Medicaid drug rebates on outpatient prescription drug prices and extending rebate liability to prescriptions for individuals enrolled in Medicare Advantage plans;

- addressed a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for products that are inhaled, infused, instilled, implanted or injected;

- expanded the types of entities eligible for the 340B drug discount program;

- established the Medicare Part D coverage gap discount program by requiring manufacturers to provide a 50% point-of-sale-discount off the negotiated price of applicable products to eligible beneficiaries during their coverage gap period as a condition for the manufacturers' outpatient products to be covered under Medicare Part D;

- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research;

- the Independent Payment Advisory Board ("IPAB"), which has authority to recommend certain changes to the Medicare program to reduce expenditures by the program that could result in reduced payments for prescription products. However, the IPAB implementation has been not been clearly defined. The PPACA provided that under certain circumstances, IPAB recommendations will become law unless Congress enacts legislation that will achieve the same or greater Medicare cost savings; and

- established the Center for Medicare and Medicaid Innovation within CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription product spending. Funding has been allocated to support the mission of the Center for Medicare and Medicaid Innovation from 2011 to 2019.

Other legislative changes have been proposed and adopted in the United States since the PPACA was enacted. For example, in August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2012 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2029 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012, which was enacted in

January 2013, among other things, further reduced Medicare payments to several providers, including hospitals, imaging centers, and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Since enactment of the PPACA, there have been, and continue to be, numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the Tax Cuts and Jobs Act of 2017 (the "TCJA"), Congress repealed the "individual mandate," effective January 1, 2019. The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, became effective in 2019. Additionally, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the PPACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. Further, the Bipartisan Budget Act of 2018, among other things, amended the PPACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." In addition, the Trump administration has also taken executive actions to undermine or delay implementation of the PPACA. Since January 2017, President Trump has signed two Executive Orders designed to delay the implementation of certain provisions of the PPACA or otherwise circumvent some of the requirements for health insurance mandated by the PPACA. One Executive Order directs federal agencies with authorities and responsibilities under the PPACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the ACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second Executive Order terminates the cost-sharing subsidies that reimburse insurers under the PPACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. In addition, CMS has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than $12 billion in PPACA risk corridor payments to third-party payors who argued were owed to them. This decision is under review by the U.S. Supreme Court during its current term. The full effects of this gap in reimbursement on third-party payors, the viability of the PPACA marketplace, providers, and potentially our business, are not yet known.

In addition, on December 14, 2018, a U.S. District Court judge in the Northern District of Texas ruled that the individual mandate portion of the PPACA is an essential and inseverable feature of the PPACA, and therefore because the mandate was repealed as part of the TCJA, the remaining provisions of the ACA are invalid as well. The Trump administration and CMS have both stated that the ruling will have no immediate effect, and on December 30, 2018 the same judge issued an order staying the judgment pending appeal. The Trump administration recently represented to the Court of Appeals considering this judgment that it does not oppose the lower court's ruling. On July 10, 2019, the Court of Appeals for the Fifth Circuit heard oral argument in this case. On December 18, 2019, that court affirmed the lower court's ruling that the individual mandate portion of the PPACA is unconstitutional and it remanded the case to the district court for reconsideration of the severability question and additional analysis of the provisions of the PPACA. On January 21, 2020, the U.S Supreme Court declined to review this decision on an expedited basis. Litigation and legislation over the PPACA are likely to continue, with unpredictable and uncertain results.

Further, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. For example, there have been several recent U.S. congressional inquiries and proposed federal and proposed and enacted state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. At the federal level, Congress and the Trump administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. For example, on May 11, 2018, the Administration issued a plan to lower drug prices. Under this blueprint for action, the Administration indicated that the Department of Health and Human Services will take steps to end the gaming of regulatory and patent processes by drug makers to

unfairly protect monopolies; advance biosimilars and generics to boost price competition; evaluate the inclusion of prices in drug makers' ads to enhance price competition; speed access to and lower the cost of new drugs by clarifying policies for sharing information between insurers and drug makers; avoid excessive pricing by relying more on value-based pricing by expanding outcome-based payments in Medicare and Medicaid; work to give Part D plan sponsors more negotiation power with drug makers; examine which Medicare Part B drugs could be negotiated for a lower price by Part D plans, and improving the design of the Part B Competitive Acquisition Program; update Medicare's drug-pricing dashboard to increase transparency; prohibit Part D contracts that include "gag rules" that prevent pharmacists from informing patients when they could pay less out-of-pocket by not using insurance; and require that Part D plan members be provided with an annual statement of plan payments, out-of-pocket spending, and drug price increases. In addition, on December 23, 2019, the Trump administration published a proposed rulemaking that, if finalized, would allow states or certain other non-federal government entities to submit importation program proposals to the FDA for review and approval. Applicants would be required to demonstrate their importation plans pose no additional risk to public health and safety and will result in significant cost savings for consumers. At the same time, the FDA issued draft guidance that would allow manufacturers to import their own FDA-approved drugs that are authorized for sale in other countries (multi-market approved products).

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

There have been, and likely will continue to be, additional legislative and regulatory proposals at the foreign, federal, and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. Such reforms could have an adverse effect on anticipated revenues from product candidates that we may successfully develop and for which we may obtain marketing approval and may affect our overall financial condition and ability to develop product candidates.

Additional Regulations

In addition to the foregoing, state, and federal laws regarding environmental protection and hazardous substances, including the Occupational Safety and Health Act, the Resource Conservation and Recovery Act, and the Toxic Substances Control Act, affect our business. These and other laws govern the use, handling, and disposal of various biologic, chemical, and radioactive substances used in, and wastes generated by, operations. If our operations result in contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and governmental fines. Equivalent laws have been adopted in third countries that impose similar obligations.

Employees

As of February 1, 2020, we had 208 full-time employees, including 54 employees with M.D. or Ph.D. degrees. Of these full-time employees, 164 employees are engaged in research and development activities. None of our employees is represented by a labor union or covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Our Corporate Information

We were incorporated under the name Gengine, Inc. as a Delaware corporation in September 2013, and we changed our name to Editas Medicine, Inc. in November 2013. Our executive offices are located at 11 Hurley St., Cambridge, Massachusetts, 02141, and our telephone number is (617) 401-9000.

Available Information

We maintain an internet website at www.editasmedicine.com and make available free of charge through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Exchange Act of 1934, or the Exchange Act. We make these reports available through our website as soon as reasonably practicable after we electronically file such reports with, or furnish such reports to, the Securities and Exchange Commission, or the SEC. You can review our electronically filed reports and other information that we file with the SEC on the SEC's web site at http://www.sec.gov. We also make available, free of charge on our website, the reports filed with the SEC by our executive officers, directors and 10% stockholders pursuant to Section 16 under the Exchange Act as soon as reasonably practicable after copies of those filings are provided to us by those persons. In addition, we regularly use our website to post information regarding our business, product development programs and governance, and we encourage investors to use our website, particularly the information in the section entitled "Investors & Media," as a source of information about us.

The information on our website is not incorporated by reference into this Annual Report on Form 10-K and should not be considered to be a part of this Annual Report on Form 10-K. Our website address is included in this Annual Report on Form 10-K as an inactive technical reference only.

Item 1A. Risk Factors

Our business is subject to numerous risks. The following important factors, among others, could cause our actual results to differ materially from those expressed in forward-looking statements made by us or on our behalf in this Annual Report on Form 10-K and other filings with the Securities and Exchange Commission (the "SEC"), press releases, communications with investors, and oral statements. Actual future results may differ materially from those anticipated in our forward-looking statements. We undertake no obligation to update any forward-looking statements, whether as a result of new information, future events, or otherwise.

Risks Related to Our Financial Position and Need for Additional Capital

We have incurred significant losses since inception. We expect to incur losses for the foreseeable future and may never achieve or maintain profitability.

Since inception, we have incurred significant operating losses. Our net losses were $133.7 million, $110.0 million, and $120.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019, we had an accumulated deficit of $549.2 million. We have financed our operations primarily through public offerings of our common stock, private placements of our preferred stock, our collaboration with Juno Therapeutics, Inc., a wholly-owned subsidiary of Bristol-Myers Squibb Company ("Juno Therapeutics"), and payments under our strategic alliance with Allergan Pharmaceuticals International Limited (together with its affiliates, "Allergan"). We have devoted substantially all of our efforts to research and development. We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. The net losses we incur may fluctuate significantly from quarter to quarter. We anticipate that our expenses will increase substantially if and as we:

- continue our current research programs and our preclinical development of product candidates from our current research programs;
- seek to identify additional research programs and additional product candidates;
- initiate preclinical testing and clinical trials for any product candidates we identify and develop;
- progress the clinical development with Allergan of EDIT-101 (also known as AGN-151587) to treat Leber congenital amaurosis ("LCA") 10 ("LCA10");
- maintain, expand, and protect our intellectual property portfolio and provide reimbursement of third-party

expenses related to our patent portfolio;

- seek marketing approvals for any of our product candidates that successfully complete clinical trials;
- ultimately establish a sales, marketing, and distribution infrastructure to commercialize any medicines for which we may obtain marketing approval;
- further develop our genome editing platform;
- hire additional clinical, quality control, and scientific personnel;
- add operational, financial, and management information systems and personnel, including personnel to support our product development;
- acquire or in-license other medicines and technologies;
- validate a commercial-scale current Good Manufacturing Practices ("cGMP") manufacturing facility; and
- continue to operate as a public company.

We have only recently initiated clinical development with Allergan of EDIT-101 and expect that it will be many years, if ever, before we have a product candidate ready for commercialization. To become and remain profitable, we must develop and eventually commercialize a medicine or medicines with significant market potential. This will require us to be successful in a range of challenging activities, including identifying product candidates, completing preclinical testing and clinical trials of product candidates, obtaining marketing approval for these product candidates, manufacturing, marketing, and selling those medicines for which we may obtain marketing approval, and satisfying any post-marketing requirements. We may never succeed in these activities and, even if we do, may never generate revenues that are significant or large enough to achieve profitability. Other than EDIT-101, we are currently only in the preclinical testing stages for our most advanced research programs. If we do achieve profitability, we may not be able to sustain or increase profitability on a quarterly or annual basis. Our failure to become and remain profitable would decrease the value of our company and could impair our ability to raise capital, maintain our research and development efforts, expand our business, or continue our operations. A decline in the value of our company could cause our stockholders to lose all or part of their investments in us.

We will need substantial additional funding. If we are unable to raise capital when needed, we would be forced to delay, reduce, or eliminate our research and product development programs or commercialization efforts.

We expect our expenses to increase in connection with our ongoing activities, particularly as we identify, continue the research and development of, initiate clinical trials of, and seek marketing approval for, product candidates. In addition, if we obtain marketing approval for any product candidates we develop, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution to the extent that such sales, marketing, manufacturing, and distribution are not the responsibility of a collaborator. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce, or eliminate our research and product development programs or future commercialization efforts.

We expect that our existing cash, cash equivalents, and marketable securities at December 31, 2019 and anticipated interest income will enable us to fund our operating expenses and capital expenditure requirements for at least 24 months following the date of this Annual Report on Form 10-K. Our future capital requirements will depend on many factors, including:

- the scope, progress, results, and costs of drug discovery, preclinical development, laboratory testing, and clinical or natural history study trials for the product candidates we develop;

- the costs of progressing the clinical development with Allergan of EDIT-101 to treat LCA10;
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property and proprietary rights, and defending intellectual property-related claims;
- the costs, timing, and outcome of regulatory review of the product candidates we develop;
- the costs of future activities, including product sales, medical affairs, marketing, manufacturing, and distribution, for any product candidates for which we receive regulatory approval;
- the success of our collaboration with Juno Therapeutics and our strategic alliance with Allergan;
- whether Juno Therapeutics exercises any of its options to extend the research program term and/or to certain of the research programs under our collaboration;
- whether Allergan exercises any additional options under our strategic alliance;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the extent to which we acquire or in-license other medicines and technologies;
- the costs of reimbursing our licensors for the prosecution and maintenance of the patent rights in-licensed by us; and
- the costs of operating as a public company.

Identifying potential product candidates and conducting preclinical testing and clinical trials is a time-consuming, expensive, and uncertain process that takes years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, even if we successfully identify and develop product candidates and those are approved, we may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of medicines that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of public or private equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. We do not have any significant committed external source of funds. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interests of our stockholders may be materially diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends.

If we raise funds through additional collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or product candidates, or we may have to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Our short operating history may make it difficult for our stockholders to evaluate the success of our business to date and to assess our future viability.

We are an early-stage company. We were founded and commenced operations in the second half of 2013. Our operations to date have been limited to organizing and staffing our company, business planning, raising capital, acquiring and developing our technology, identifying potential product candidates, undertaking preclinical studies and preparing to undertake clinical trials. Except for EDIT-101 to treat LCA10, all of our research programs are still in the preclinical or research stage of development, and their risk of failure of all of our research programs is high. We have not yet demonstrated an ability to successfully complete any clinical trials, including large-scale, pivotal clinical trials, obtain marketing approvals, manufacture a commercial-scale medicine, or arrange for a third party to do so on our behalf, or conduct sales and marketing activities necessary for successful commercialization. Typically, it takes about 10 to 15 years to develop a new medicine from the time it is discovered to when it is available for treating patients. Consequently, any predictions about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, as a new business, we may encounter unforeseen expenses, difficulties, complications, delays, and other known and unknown factors. We will need to transition from a company with a research focus to a company capable of supporting commercial activities. We may not be successful in such a transition.

We expect that our financial condition and operating results will continue to fluctuate significantly from quarter-to-quarter and year-to-year due to a variety of factors, many of which are beyond our control. Accordingly, our stockholders should not rely upon the results of any quarterly or annual periods as indications of future operating performance.

We have never generated revenue from product sales and may never be profitable.

Our ability to generate revenue from product sales and achieve profitability depends on our ability, alone or with collaboration partners, to successfully complete the development of, and obtain the regulatory approvals necessary to commercialize, product candidates we may identify for development. We do not anticipate generating revenues from product sales for the next several years, if ever. Our ability to generate future revenues from product sales depends heavily on our, or our collaborators', ability to successfully:

- identify product candidates and complete research and preclinical and clinical development of any product candidates we may identify;
- seek and obtain regulatory and marketing approvals for any of our product candidates for which we complete clinical trials;
- launch and commercialize any of our product candidates for which we obtain regulatory and marketing approval by establishing a sales force, marketing, and distribution infrastructure;
- qualify for adequate coverage and reimbursement by government and third-party payors for any our product candidates for which we obtain regulatory and marketing approval;
- develop, maintain, and enhance a sustainable, scalable, reproducible, and transferable manufacturing process for the product candidates we develop;
- establish and maintain supply and manufacturing relationships with third parties that can provide adequate, in both amount and quality, products and services to support clinical development and the market demand for any of our product candidates for which we obtain regulatory and marketing approval;
- obtain market acceptance of any product candidates we develop as viable treatment options;

- address competing technological and market developments;
- implement internal systems and infrastructure, as needed;
- negotiate favorable terms in any collaboration, licensing, or other arrangements into which we may enter and performing our obligations in such arrangements;
- maintain, protect, and expand our portfolio of intellectual property rights, including patents, trade secrets, and know-how;
- avoid and defend against third-party interference or infringement claims; and
- attract, hire, and retain qualified personnel.

Even if one or more of the product candidates we develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond expectations if we are required by the U.S. Food and Drug Administration (the "FDA"), the European Medicines Agency (the "EMA"), or other regulatory authorities to perform clinical and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations.

Risks Related to Discovery, Development, and Commercialization

We intend to identify and develop product candidates based on a novel genome editing technology, which makes it difficult to predict the time and cost of product candidate development. No therapeutic products that utilize genome editing technology have been approved in the United States or in Europe, and there have only been a limited number of human clinical trials of a genome editing product candidate.

We have concentrated our research and development efforts on our genome editing platform, which uses CRISPR technology. Our future success depends on the successful development of this novel genome editing therapeutic approach. To date, no therapeutic product that utilizes genome editing, including CRISPR technology, has been approved in the United States or Europe and there have been only a limited number of clinical trials involving the use of a therapeutic utilizing genome editing technologies. As we have not yet been able to fully assess safety in humans, there may be long-term effects from treatment with any of our future product candidates that we cannot predict at this time. Any product candidates we develop will act at the level of DNA, and, because animal DNA differs from human DNA, it will be difficult for us to test our future product candidates in animal models for either safety or efficacy. Also, animal models do not exist for some of the diseases we expect to pursue in our programs. As a result of these factors, it is more difficult for us to predict the time and cost of product candidate development, and we cannot predict whether the application of our genome editing platform, or any similar or competitive genome editing platforms, will result in the identification, development, and regulatory approval of any medicines. There can be no assurance that any development problems we experience in the future related to our genome editing platform or any of our research programs will not cause significant delays or unanticipated costs, or that such development problems can be solved. We may also experience delays in developing a sustainable, reproducible, and scalable manufacturing process or transferring that process to commercial partners. Any of these factors may prevent us from completing our preclinical studies or any clinical trials that we may initiate or commercializing any product candidates we develop on a timely or profitable basis, if at all.

Because genome editing is novel and the regulatory landscape that will govern any product candidates we develop is uncertain and may change, we cannot predict the time and cost of obtaining regulatory approval, if we receive it at all, for any product candidates we develop.

The regulatory requirements that will govern any novel genome editing product candidates we develop are not entirely clear and may change. Within the broader genomic medicine field, we are aware of a limited number of gene

therapy products that have received marketing authorization from the FDA and the EMA. Even with respect to more established products that fit into the categories of gene therapies or cell therapies, the regulatory landscape is still developing. Regulatory requirements governing gene therapy products and cell therapy products have changed frequently and will likely continue to change in the future. Moreover, there is substantial, and sometimes uncoordinated, overlap in those responsible for regulation of existing gene therapy products and cell therapy products. For example, in the United States, the FDA has established the Office of Tissues and Advanced Therapies within its Center for Biologics Evaluation and Research ("CBER") to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. Gene therapy clinical trials are also subject to review and oversight by an institutional biosafety committee ("IBC"), a committee that reviews and oversees the use of biological agents. Although the FDA decides whether individual gene therapy protocols may proceed, the review process and determinations of other reviewing bodies can impede or delay the initiation of a clinical trial, even if the FDA has reviewed the trial and allowed its initiation. The same applies in the European Union. The EMA's Committee for Advanced Therapies ("CAT") is responsible for assessing the quality, safety, and efficacy of advanced-therapy medicinal products. The role of the CAT is to prepare a draft opinion on an application for marketing authorization for a gene therapy medicinal candidate that is submitted to the EMA. In the European Union, the development and evaluation of a gene therapy medicinal product must be considered in the context of the relevant European Union guidelines. The EMA may issue new guidelines concerning the development and marketing authorization for gene therapy medicinal products and require that we comply with these new guidelines. As a result, the procedures and standards applied to gene therapy products and cell therapy products may be applied to any CRISPR product candidates we develop, but that remains uncertain at this point.

Adverse developments in clinical trials conducted by others of gene therapy products, cell therapy products, or products developed through the application of a CRISPR or other genome editing technology may cause the FDA, the EMA, and other regulatory bodies to revise the requirements for approval of any product candidates we develop or limit the use of products utilizing genome editing technologies, either of which could materially harm our business. In addition, the clinical trial requirements of the FDA, the EMA, and other regulatory authorities and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty, and intended use and market of the potential products. The regulatory approval process for novel product candidates such as ours can be more expensive and take longer than for other, better known, or more extensively studied pharmaceutical or other product candidates. Regulatory agencies administering existing or future regulations or legislation may not allow production and marketing of products utilizing genome editing technology in a timely manner or under technically or commercially feasible conditions. In addition, regulatory action or private litigation could result in expenses, delays, or other impediments to our research programs or the commercialization of resulting products.

The regulatory review committees and advisory groups described above and the new guidelines they promulgate may lengthen the regulatory review process, require us to perform additional studies or trials, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these treatment candidates, or lead to significant post-approval limitations or restrictions. As we advance our research programs and develop future product candidates, we will be required to consult with these regulatory and advisory groups and to comply with applicable guidelines. If we fail to do so, we may be required to delay or discontinue development of any product candidates we identify and develop.

Adverse public perception of genomic medicines, and genome editing in particular, may negatively impact regulatory approval of, or demand for, our potential products.

Our potential therapeutic products involve editing the human genome. The clinical and commercial success of our potential products will depend in part on public understanding and acceptance of the use of genome editing therapy for the prevention or treatment of human diseases. Public attitudes may be influenced by claims that genome editing is unsafe, unethical, or immoral, and, consequently, our products may not gain the acceptance of the public or the medical community. Adverse public attitudes may adversely impact our ability to enroll clinical trials. Moreover, our success will depend upon physicians prescribing, and their patients being willing to receive, treatments that involve the use of product candidates we develop in lieu of, or in addition to, existing treatments with which they are already familiar and for which greater clinical data may be available.

In addition, genome editing technology is subject to public debate and heightened regulatory scrutiny due to ethical concerns relating to the application of genome editing technology to human embryos or the human germline. For example, academic scientists in several countries, including the United States, have reported on their attempts to edit the genome of human embryos as part of basic research and, in November 2018, Dr. Jiankui He, a Chinese biophysics researcher who was an associate professor in the Department of Biology of the Southern University of Science and Technology in Shenzhen, China, announced he had created the first human genetically edited babies, twin girls and helped create a second gene-edited pregnancy. The announcement was negatively received by the public, in particular by those in the scientific community. In the United States, germline editing for clinical application has been expressly prohibited since enactment of a December 2015 U.S. FDA ban on such activity. Prohibitions are also in place in the United Kingdom, across most of Europe, in China, and many other countries around the world. In the United States, the NIH has announced that it would not fund any use of genome editing technologies in human embryos, noting that there are multiple existing legislative and regulatory prohibitions against such work, including the Dickey-Wicker Amendment, which prohibits the use of appropriated funds for the creation of human embryos for research purposes or for research in which human embryos are destroyed. Laws in the United Kingdom prohibit genetically modified embryos from being implanted into women, but embryos can be altered in research labs under license from the Human Fertilisation and Embryology Authority. Basic research on embryos is more tightly controlled in many other European countries.

Moreover, in an annual worldwide threat assessment report delivered to the U.S. Congress in February 2016, the U.S. Director of National Intelligence stated that research into genome editing probably increases the risk of the creation of potentially harmful biological agents or products, including weapons of mass destruction. He noted that the broad distribution, low cost, and accelerated pace of development of genome editing technology could result in the deliberate or unintentional misuse of such technology.

Although we do not use our technologies to edit human embryos or the human germline, such public debate about the use of genome editing technologies in human embryos and heightened regulatory scrutiny could prevent or delay our development of product candidates. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition and may delay or impair our development and commercialization of product candidates or demand for any products we may develop. Adverse events in our preclinical studies or clinical trials or those of our competitors or of academic researchers utilizing genome editing technologies, even if not ultimately attributable to product candidates we may identify and develop, and the resulting publicity could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of potential product candidates we may identify and develop, stricter labeling requirements for those product candidates that are approved, and a decrease in demand for any such product candidates. Use of genome editing technology by a third party or government to develop biological agents or products that threaten the United States' national security could similarly result in such negative impacts to us.

We may not be successful in our efforts to identify, develop, or commercialize potential product candidates.

The success of our business depends primarily upon our ability to identify, develop, and commercialize products based on our genome editing platform. Other than EDIT-101 to treat LCA10, all of our product development programs are still in the preclinical or research stage of development. Our research programs, including those subject to our collaboration with Juno Therapeutics and our strategic alliance with Allergan, may fail to identify potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying potential product candidates, or our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products impractical to manufacture, unmarketable, or unlikely to receive marketing approval.

If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business, financial condition, results of operations, and prospects. Research programs to identify new product candidates require substantial technical, financial, and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful.

The genome editing field is relatively new and is evolving rapidly. We are focusing our research and development efforts on CRISPR gene editing technology using Cas9 and Cas12a enzymes, but other genome editing technologies may be discovered that provide significant advantages over CRISPR/Cas9 or CRISPR/Cas12a, which could materially harm our business.

To date, we have focused our efforts on genome editing technologies using CRISPR and the Cas9 and Cas12a (also known as Cpf1) enzymes. Other companies have previously undertaken research and development of genome editing technologies using zinc finger nucleases, engineered meganucleases, and transcription activator-like effector nucleases, but to date none has obtained marketing approval for a product candidate. There can be no certainty that the CRISPR/Cas9 or CRISPR/Cas12a technology will lead to the development of genomic medicines, that other genome editing technologies will not be considered better or more attractive for the development of medicines or that either Cas9 or Cas12a, the two CRISPR associated proteins that we use, may be useful or successful in developing therapeutics. For example, Cas9 or Cas12a may be determined to be less attractive than other CRISPR enzymes, including CRISPR enzymes that have yet to be discovered. Similarly, a new genome editing technology that has not been discovered yet may be determined to be more attractive than CRISPR. Moreover, if we decide to develop genome technologies other than CRISPR technology using a Cas9 or Cas12a enzyme, we cannot be certain we will be able to obtain rights to such technologies. Any of these factors could reduce or eliminate our commercial opportunity, and could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We depend heavily on the success of EDIT-101. Except for EDIT-101, all of our product development programs are at the preclinical or research stage. Preclinical testing and clinical trials of product candidates may not be successful. If we are unable to commercialize any product candidates we develop or experience significant delays in doing so, our business will be materially harmed.

We have invested a significant portion of our efforts and financial resources in the identification and development of EDIT-101 to treat LCA10. Our ability to generate product revenues, which we do not expect will occur for many years, if ever, will depend heavily on the successful development and eventual commercialization of EDIT-101 by Allergan for the treatment of LCA10 and other product candidates that we may identify in the future. The success of product candidates we identify and develop will depend on many factors, including the following:

- sufficiency of our financial and other resources to complete the necessary clinical trials for EDIT-101;
- successful completion of preclinical studies and investigational new drug (“IND”)-enabling studies;
- successful enrollment in, and completion of, clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and non-patent exclusivity for our medicines;
- launching commercial sales of the medicines, if and when approved, whether alone or in collaboration with others;
- acceptance of the medicines, if and when approved, by patients, the medical community, and third-party payors;
- effectively competing with other therapies and treatment options;
- a continued acceptable safety profile of the medicines following approval;

- enforcing and defending intellectual property and proprietary rights and claims; and
- achieving desirable medicinal properties for the intended indications.

The foregoing also applies to our collaborators to the extent we have partnered, sold or licensed any of our research programs to them. For instance, Allergan exercised its option to license EDIT-101 and, although we have entered into a profit-sharing arrangement to equally split the profits and costs of such program in the United States and we will continue to work with Allergan on the development and commercialization of such program, in the event a dispute arises, Allergan will have final decision making authority. If we or our collaborators do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully commercialize any product candidates we develop, which would materially harm our business.

Of the large number of biologics and drugs in development in the pharmaceutical industry, only a small percentage result in the submission of a Biologics License Application (a "BLA") to the FDA or a marketing authorization application (an "MAA") to the EMA. Not all BLAs or MAAs that are submitted to a regulatory agency are approved for commercialization. Furthermore, even if we do receive regulatory approval to market any product candidates that we may identify and develop, any such approval may be subject to limitations on the indicated uses for which we may market the product. Accordingly, even if we are able to obtain the requisite financing to continue to fund our research programs, we cannot assure you that we or our collaborators will successfully develop or commercialize EDIT-101, or any of our other research programs. If we or any of our collaborators and future development partners are unable to develop, or obtain regulatory approval for, or, if approved, successfully commercialize, any product candidates we may identify and develop, we may not be able to generate sufficient revenue to continue our business.

If serious adverse events, undesirable side effects, or unexpected characteristics are identified during the development of any product candidates we develop, we may need to abandon or limit our further clinical development of those product candidates.

We have not evaluated any product candidates in human clinical trials, and our proposed delivery modes, combined with CRISPR technology, have a limited history, if any, of being tested clinically. It is impossible to predict when or if any product candidates we develop will prove safe in humans. In the genomic medicine field, there have been several significant adverse events from gene therapy treatments in the past, including reported cases of leukemia and death. There can be no assurance that genome editing technologies will not cause severe or undesirable side effects.

A significant risk in any genome editing product is that the edit will be "off-target" and cause serious adverse events, undesirable side effects, or unexpected characteristics. For example, off-target cuts could lead to disruption of a gene or a genetic regulatory sequence at an unintended site in the DNA, or, in those instances where we also provide a segment of DNA to serve as a repair template, it is possible that following off-target cut events, DNA from such repair template could be integrated into the genome at an unintended site, potentially disrupting another important gene or genomic element. We cannot be certain that off-target editing will not occur in any of our clinical studies. There is also the potential risk of delayed adverse events following exposure to genome editing therapy due to the potential for persistent biological activity of the genetic material or other components of products used to carry the genetic material.

If any product candidates we develop are associated with serious adverse events, or undesirable side effects, or have characteristics that are unexpected, we may need to abandon their development or limit development to certain uses or subpopulations in which the serious adverse events, undesirable side effects or other characteristics are less prevalent, less severe, or more acceptable from a risk-benefit perspective, any of which would have a material adverse effect on our business, financial condition, results of operations, and prospects. Many product candidates that initially showed promise in early stage testing for treating cancer or other diseases have later been found to cause side effects that prevented further clinical development of the product candidates.

If any of the product candidates we develop or the delivery modes we rely on cause undesirable side effects, it could delay or prevent their regulatory approval, limit the commercial potential, or result in significant negative consequences following any potential marketing approval.

Product candidates we develop may be associated with off-target editing or other serious adverse events, undesirable side effects, or unexpected characteristics. There also is the potential risk of delayed adverse events following exposure to gene editing therapy due to persistent biologic activity of the genetic material or other components of products used to carry the genetic material. In addition to serious adverse events or side effects caused by any product candidate we develop, the administration process or related procedures also can cause undesirable side effects. If any such events occur, our clinical trials could be suspended or terminated.

If in the future we are unable to demonstrate that such adverse events were caused by factors other than our product candidate, the FDA, the EMA or other regulatory authorities could order us to cease further development of, or deny approval of, any product candidates we are able to develop for any or all targeted indications. Even if we are able to demonstrate that all future serious adverse events are not product-related, such occurrences could affect patient recruitment or the ability of enrolled patients to complete the trial. Moreover, if we elect, or are required, to delay, suspend or terminate any clinical trial of any product candidate we develop, the commercial prospects of such product candidates may be harmed and our ability to generate product revenues from any of these product candidates may be delayed or eliminated. Any of these occurrences may harm our ability to identify and develop product candidates, and may harm our business, financial condition, result of operations, and prospects significantly.

Additionally, if we successfully develop a product candidate and it receives marketing approval, the FDA could require us to adopt a Risk Evaluation and Mitigation Strategy (“REMS”) to ensure that the benefits of treatment with such product candidate outweighs the risks for each potential patient, which may include, among other things, a medication guide outlining the risks of the product for distribution to patients, a communication plan to health care practitioners, extensive patient monitoring, or distribution systems and processes that are highly controlled, restrictive, and more costly than what is typical for the industry. Furthermore, if we or others later identify undesirable side effects caused by any product candidate that we to develop, several potentially significant negative consequences could result, including:

- regulatory authorities may suspend or withdraw approvals of such product candidate;
- regulatory authorities may require additional warnings on the label;
- we may be required to change the way a product candidate is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of any product candidates we may identify and develop and could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We have not tested any of our proposed delivery modes and product candidates in clinical trials.

Our proposed delivery modes, combined with our product candidates, have a limited history, if any, of being evaluated in human clinical trials. Any product candidates we develop may fail to show the desired safety and efficacy in later stages of clinical development despite having successfully advanced through initial clinical trials.

There is a high failure rate for drugs and biologics proceeding through clinical trials. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later stage clinical trials even after

achieving promising results in earlier stage clinical trials. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit, or prevent regulatory approval. In addition, regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development.

Any such adverse events may cause us to delay, limit, or terminate planned clinical trials, any of which would have a material adverse effect on our business, financial condition, results of operations, and prospects.

Because we are developing product candidates for the treatment of diseases in which there is little clinical experience using new technologies, there is increased risk that the FDA, the EMA, or other regulatory authorities may not consider the endpoints of our clinical trials to provide clinically meaningful results and that these results may be difficult to analyze.

During the regulatory review process, we will need to identify success criteria and endpoints such that the FDA, the EMA, or other regulatory authorities will be able to determine the clinical efficacy and safety profile of any product candidates we develop. As we are initially seeking to identify and develop product candidates to treat diseases in which there is little clinical experience using new technologies, there is heightened risk that the FDA, the EMA, or other regulatory authorities may not consider the clinical trial endpoints that we propose to provide clinically meaningful results (reflecting a tangible benefit to patients). In addition, the resulting clinical data and results may be difficult to analyze. Even if the FDA does find our success criteria to be sufficiently validated and clinically meaningful, we may not achieve the pre-specified endpoints to a degree of statistical significance. This may be a particularly significant risk for many of the genetically defined diseases for which we plan to develop product candidates because many of these diseases have small patient populations, and designing and executing a rigorous clinical trial with appropriate statistical power is more difficult than with diseases that have larger patient populations. Further, even if we do achieve the pre-specified criteria, we may produce results that are unpredictable or inconsistent with the results of the non-primary endpoints or other relevant data. The FDA also weighs the benefits of a product against its risks, and the FDA may view the efficacy results in the context of safety as not being supportive of regulatory approval. Other regulatory authorities in the European Union and other countries, such as the CAT, may make similar comments with respect to these endpoints and data. Any product candidates we develop will be based on a novel technology that makes it difficult to predict the time and cost of development and of subsequently obtaining regulatory approval. No genome editing therapeutic product has been approved in the United States or in Europe.

If clinical trials of any product candidates we may identify and develop fail to demonstrate safety and efficacy to the satisfaction of regulatory authorities or do not otherwise produce positive results, we may incur additional costs or experience delays in completing, or ultimately be unable to complete, the development and commercialization of such product candidates.

Before obtaining marketing approval from regulatory authorities for the sale of any product candidates we may identify and develop, we must complete preclinical development and then conduct extensive clinical trials to demonstrate the safety and efficacy in humans of any such product candidates. Clinical testing is expensive, difficult to design and implement, can take many years to complete, and is uncertain as to outcome. A failure of one or more clinical trials can occur at any stage of testing. The outcome of preclinical testing and early clinical trials may not be predictive of the success of later clinical trials, and interim results of a clinical trial do not necessarily predict final results.

Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses. Many companies that have believed their product candidates performed satisfactorily in preclinical studies and clinical trials have nonetheless failed to obtain marketing approval of their product candidates.

We or our collaborators may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to receive marketing approval or commercialize any product candidates we may identify and develop, including:

- delays in reaching a consensus with regulators on trial design;

- regulators, institutional review boards (“IRBs”) or independent ethics committees (“IECs”) may not authorize us or our investigators to commence a clinical trial or conduct a clinical trial at a prospective trial site;
- delays in reaching or failing to reach agreement on acceptable clinical trial contracts or clinical trial protocols with prospective contract research organizations (“CROs”) and clinical trial sites;
- clinical trials of any product candidates we develop may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical trials or abandon product development or research programs;
- difficulty in designing well-controlled clinical trials due to ethical considerations which may render it inappropriate to conduct a trial with a control arm that can be effectively compared to a treatment arm;
- difficulty in designing clinical trials and selecting endpoints for diseases that have not been well-studied and for which the natural history and course of the disease is poorly understood;
- the number of patients required for clinical trials of any product candidates we develop may be larger than we anticipate; enrollment of suitable participants in these clinical trials, which may be particularly challenging for some of the rare genetically defined diseases we are targeting in our most advanced programs, may be delayed or slower than we anticipate; or patients may drop out of these clinical trials at a higher rate than we anticipate;
- our third-party contractors may fail to comply with regulatory requirements or meet their contractual obligations to us in a timely manner, or at all;
- regulators, IRBs, or IECs may require that we or our investigators suspend or terminate clinical research or clinical trials of any product candidates we develop for various reasons, including noncompliance with regulatory requirements, a finding of undesirable side effects or other unexpected characteristics, or that the participants are being exposed to unacceptable health risks or after an inspection of our clinical trial operations or trial sites;
- the cost of clinical trials of any product candidates we develop may be greater than we anticipate;
- the supply or quality of any product candidates we develop or other materials necessary to conduct clinical trials of any product candidates we develop may be insufficient or inadequate, including as a result of delays in the testing, validation, manufacturing, and delivery of any product candidates we develop to the clinical sites by us or by third parties with whom we have contracted to perform certain of those functions;
- delays in having patients complete participation in a trial or return for post-treatment follow-up;
- clinical trial sites dropping out of a trial;
- selection of clinical endpoints that require prolonged periods of clinical observation or analysis of the resulting data;
- occurrence of serious adverse events associated with any product candidates we develop that are viewed to outweigh their potential benefits;
- occurrence of serious adverse events in trials of the same class of agents conducted by other sponsors; and
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

If we or our collaborators are required to conduct additional clinical trials or other testing of any product candidates we develop beyond those that we currently contemplate, if we or our collaborators are unable to successfully complete clinical trials of any product candidates we develop or other testing, or if the results of these trials or tests are not positive or are only modestly positive or if there are safety concerns, we or our collaborators may:

- be delayed in obtaining marketing approval for any such product candidates we develop or not obtain marketing approval at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings, including boxed warnings;
- be subject to changes in the way the product is administered;
- be required to perform additional clinical trials to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw, or suspend, their approval of the product or impose restrictions on its distribution in the form of a modified risk evaluation and mitigation strategy;
- be sued; or
- experience damage to our reputation.

Product development costs will also increase if we or our collaborators experience delays in testing or marketing approvals. We do not know whether any clinical trials will begin as planned, will need to be restructured, or will be completed on schedule, or at all. Significant clinical trial delays also could shorten any periods during which we may have the exclusive right to commercialize any product candidates we develop, could allow our competitors to bring products to market before we do, and could impair our ability to successfully commercialize any product candidates we develop, any of which may harm our business, financial condition, results of operations, and prospects.

If we experience delays or difficulties in the enrollment of patients in clinical trials, our receipt of necessary regulatory approvals could be delayed or prevented.

We or our collaborators may not be able to initiate or continue clinical trials for any product candidates we identify or develop if we are unable to locate and enroll a sufficient number of eligible patients to participate in these trials as required by the FDA or analogous regulatory authorities outside the United States, or as needed to provide appropriate statistical power for a given trial. Enrollment may be challenging for the rare genetically defined diseases we are targeting. In addition, if patients are unwilling to participate in our genome editing trials because of negative publicity from adverse events related to the biotechnology, gene therapy, or genome editing fields, competitive clinical trials for similar patient populations, clinical trials in competing products, or for other reasons, the timeline for recruiting patients, conducting studies, and obtaining regulatory approval of any product candidates we develop may be delayed. Moreover, some of our competitors may have ongoing clinical trials for product candidates that would treat the same indications as any product candidates we develop, and patients who would otherwise be eligible for our clinical trials may instead enroll in clinical trials of our competitors' product candidates. For example, ProQR Therapeutics N.V. has already enrolled LCA10 patients in its clinical trial, which may limit the number of potential patients available to enroll in the ongoing Phase 1/2 clinical study for EDIT-101.

Patient enrollment is also affected by other factors, including:

- severity of the disease under investigation;

- size of the patient population and process for identifying patients;
- design of the trial protocol;
- availability and efficacy of approved medications for the disease under investigation;
- availability of genetic testing for potential patients;
- ability to obtain and maintain patient informed consent;
- risk that enrolled patients will drop out before completion of the trial;
- eligibility and exclusion criteria for the trial in question;
- perceived risks and benefits of the product candidate under trial;
- perceived risks and benefits of genome editing as a therapeutic approach;
- efforts to facilitate timely enrollment in clinical trials;
- patient referral practices of physicians;
- ability to monitor patients adequately during and after treatment; and
- proximity and availability of clinical trial sites for prospective patients.

In particular, EDIT-101 for the treatment of LCA10 has a limited patient pool from which to draw for enrollment in a clinical trial, as the global incidence of LCA10 is estimated to be two to three per 100,000 live births worldwide. The eligibility criteria of our clinical trials will further limit the pool of available trial participants. Additionally, the process of finding and diagnosing patients may prove costly.

Our ability to successfully initiate, enroll, and complete a clinical trial in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with CROs and physicians;
- different standards for the conduct of clinical trials;
- different standard-of-care for patients with a particular disease;
- inability to locate qualified local consultants, physicians, and partners; and
- potential burden of complying with a variety of foreign laws, medical standards, and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment.

Enrollment delays in our clinical trials may result in increased development costs for any product candidates we develop, which would cause the value of our company to decline and limit our ability to obtain additional financing. If we or our collaborators have difficulty enrolling a sufficient number of patients to conduct our clinical trials as planned, we may need to delay, limit, or terminate ongoing or planned clinical trials, any of which would have an adverse effect on our business, financial condition, results of operations, and prospects.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs and product candidates that we identify for specific indications among many potential options. As a result, we may forego or delay pursuit of opportunities with other product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial medicines or profitable market opportunities. Our spending on current and future research and development programs and product candidates for specific indications may not yield any commercially viable medicines. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing, or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate. Any such event could have a material adverse effect on our business, financial condition, results of operations, and prospects.

If we are unable to successfully identify patients who are likely to benefit from therapy with any medicines we develop, or experience significant delays in doing so, we may not realize the full commercial potential of any medicines we may develop.

Our success may depend, in part, on our ability to identify patients who are likely to benefit from therapy with any medicines we may develop, which requires those potential patients to have their DNA analyzed for the presence or absence of a particular sequence. For example, although LCA can be diagnosed based on a patient's symptoms and retinal scans, DNA samples are taken from LCA patients in order to test for the presence of the known gene mutations that cause LCA and, where possible, to identify the specific genetically defined disease, such as LCA10. If we, or any third parties that we engage to assist us, are unable to successfully identify such patients, or experience delays in doing so, then:

- our ability to develop any product candidates may be adversely affected if we are unable to appropriately select patients for enrollment in our clinical trials;
- any product candidates we develop may not receive marketing approval if safe and effective use of such product candidates depends on an *in vitro* diagnostic; and
- we may not realize the full commercial potential of any product candidates we develop that receive marketing approval if, among other reasons, we are unable to appropriately select patients who are likely to benefit from therapy with our medicines.

As a result, we may be unable to successfully develop and realize the commercial potential of any product candidates we may identify and develop, and our business, financial condition, results of operations, and prospects would be materially adversely affected.

Even if we complete the necessary clinical trials, we cannot predict when, or if, we will obtain regulatory approval to commercialize a product candidate we develop, and any such approval may be for a more narrow indication than we seek.

We cannot commercialize a product candidate until the appropriate regulatory authorities have reviewed and approved the product candidate. Even if any product candidates we develop meet their safety and efficacy endpoints in clinical trials, the regulatory authorities may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval. Additional delays may result if an FDA Advisory Committee or other regulatory authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory authority policy during the period of product development, clinical trials, and the review process.

Regulatory authorities also may approve a product candidate for more limited indications than requested or they may impose significant limitations in the form of narrow indications, warnings or a REMS. These regulatory authorities

may require precautions or contra-indications with respect to conditions of use, or they may grant approval subject to the performance of costly post-marketing clinical trials. In addition, regulatory authorities may not approve the labeling claims that are necessary or desirable for the successful commercialization of any product candidates we develop. Any of the foregoing scenarios could materially harm the commercial prospects for any product candidates we develop and materially adversely affect our business, financial condition, results of operations, and prospects.

Even if any product candidates we develop receive marketing approval, they may fail to achieve the degree of market acceptance by physicians, patients, healthcare payors, and others in the medical community necessary for commercial success.

The commercial success of any of our product candidates will depend upon its degree of market acceptance by physicians, patients, third-party payors, and others in the medical community. Ethical, social, and legal concerns about genomic medicines generally and genome editing technologies specifically could result in additional regulations restricting or prohibiting our products. Even if any product candidate we develop receives marketing approval, it may nonetheless fail to gain sufficient market acceptance by physicians, patients, healthcare payors, and others in the medical community. The degree of market acceptance of any product candidates we develop, if approved for commercial sale, will depend on a number of factors, including:

- the efficacy and safety of such product candidates as demonstrated in clinical trials;
- the potential and perceived advantages compared to alternative treatments;
- the limitation to our targeted patient population and limitations or warnings contained in approved labeling by the FDA or other regulatory authorities;
- the ability to offer our medicines for sale at competitive prices;
- convenience and ease of administration compared to alternative treatments;
- the clinical indications for which the product candidate is approved by the FDA, the European Commission, or other regulatory agencies;
- public attitudes regarding genomic medicine generally and genome editing technologies specifically;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies, as well as their willingness to accept a therapeutic intervention that involves the editing of the patient's genome;
- product labeling or product insert requirements of the FDA, the EMA, or other regulatory authorities, including any limitations or warnings contained in a product's approved labeling;
- relative convenience and ease of administration;
- the timing of market introduction of competitive products;
- publicity concerning our products or competing products and treatments;
- the strength of marketing and distribution support;
- sufficient third-party coverage or reimbursement; and
- the prevalence and severity of any side effects.

If any product candidates we develop do not achieve an adequate level of acceptance, we may not generate significant product revenues, and we may not become profitable.

If, in the future, we are unable to establish sales and marketing capabilities or enter into agreements with third parties to sell and market any product candidates we develop, we may not be successful in commercializing those product candidates if and when they are approved.

We do not have a sales or marketing infrastructure and have no experience in the sale, marketing, or distribution of pharmaceutical products. To achieve commercial success for any approved medicine for which we retain sales and marketing responsibilities, we must either develop a sales and marketing organization or outsource these functions to third parties. In the future, we may choose to build a focused sales, marketing, and commercial support infrastructure to sell, or participate in sales activities with our collaborators for, some of our product candidates if and when they are approved.

There are risks involved with both establishing our own commercial capabilities and entering into arrangements with third parties to perform these services. For example, recruiting and training a sales force or reimbursement specialists is expensive and time consuming and could delay any product launch. If the commercial launch of a product candidate for which we recruit a sales force and establish marketing and other commercialization capabilities is delayed or does not occur for any reason, we would have prematurely or unnecessarily incurred these commercialization expenses. This may be costly, and our investment would be lost if we cannot retain or reposition our commercialization personnel.

Factors that may inhibit our efforts to commercialize our medicines on our own include:

- our inability to recruit and retain adequate numbers of effective sales, marketing, reimbursement, customer service, medical affairs, and other support personnel;
- the inability of sales personnel to obtain access to physicians or persuade adequate numbers of physicians to prescribe any future medicines;
- the inability of reimbursement professionals to negotiate arrangements for formulary access, reimbursement, and other acceptance by payors;
- restricted or closed distribution channels that make it difficult to distribute our products to segments of the patient population;
- the lack of complementary medicines to be offered by sales personnel, which may put us at a competitive disadvantage relative to companies with more extensive product lines; and
- unforeseen costs and expenses associated with creating an independent commercialization organization.

If we enter into arrangements with third parties to perform sales, marketing, commercial support, and distribution services, our product revenues or the profitability of these product revenues to us may be lower than if we were to market and sell any medicines we may develop ourselves. In addition, we may not be successful in entering into arrangements with third parties to commercialize our product candidates or may be unable to do so on terms that are favorable to us. We may have little control over such third parties, and any of them may fail to devote the necessary resources and attention to sell and market our medicines effectively. If we do not establish commercialization capabilities successfully, either on our own or in collaboration with third parties, we will not be successful in commercializing our product candidates.

We face significant competition in an environment of rapid technological change, and there is a possibility that our competitors may achieve regulatory approval before us or develop therapies that are safer or more advanced or effective than ours, which may harm our financial condition and our ability to successfully market or commercialize any product candidates we develop.

The development and commercialization of new drug products is highly competitive. Moreover, the biotechnology and pharmaceutical industries, including in the gene therapy, genome editing and cell therapy fields, are characterized by rapidly advancing technologies, intense competition, and a strong emphasis on intellectual property and proprietary products. We will face competition with respect to any product candidates that we may seek to develop or commercialize in the future from major pharmaceutical companies, specialty pharmaceutical companies, and biotechnology companies worldwide. Potential competitors also include academic institutions, government agencies, and other public and private research organizations that conduct research, seek patent protection, and establish collaborative arrangements for research, development, manufacturing, and commercialization.

There are a number of large pharmaceutical and biotechnology companies that currently market and sell products or are pursuing the development of products for the treatment of the disease indications for which we have research programs. Some of these competitive products and therapies are based on scientific approaches that are the same as or similar to our approach, and others are based on entirely different approaches.

Our platform and product focus is the development of therapies using CRISPR technology. Other companies developing CRISPR technology or therapies using CRISPR technology include Arbor Biotechnologies, Caribou Biosciences, CRISPR Therapeutics, ERS Genomics, Intellia Therapeutics, Locus Biosciences, ToolGen Inc. (“ToolGen”), TRACR Hematology and Vertex Pharmaceuticals. In addition, there have been and may continue to be discoveries of new CRISPR-based gene editing technologies. There are additional companies developing therapies using other genome editing technologies, including base editing, prime editing, transcription activator-like effector nucleases, meganucleases, Mega-TALs, and zinc finger nucleases. These companies include Beam Therapeutics, Prime Medicine, bluebird bio, Cellectis, Poseida Therapeutics, Precision Biosciences and Sangamo Therapeutics. Additional companies developing gene therapy products include Abeona Therapeutics, Adverum Biotechnologies, AGTC Therapeutics, Audentes Therapeutics, Homology Medicines, REGENXBIO, Sarepta Therapeutics, Solid Biosciences, Spark Therapeutics, uniQure and Voyager Therapeutics. In addition to competition from other genome editing therapies, gene therapies or cell medicine therapies, any products that we may develop may also face competition from other types of therapies, such as small molecule, antibody, protein, oligonucleotide, or ribonucleic acid therapies. For example, ProQR Therapeutics N.V. is conducting a clinical trial for its experimental treatment using antisense oligonucleotide technology for LCA10.

Many of our current or potential competitors, either alone or with their collaboration partners, may have significantly greater financial resources and expertise in research and development, manufacturing, preclinical testing, conducting clinical trials, obtaining regulatory approvals, and marketing approved products than we do. Mergers and acquisitions in the pharmaceutical, biotechnology, and gene therapy industries may result in even more resources being concentrated among a smaller number of our competitors. Smaller or early-stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These competitors also compete with us in recruiting and retaining qualified scientific and management personnel and establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs. Our commercial opportunity could be reduced or eliminated if our competitors develop and commercialize products that are safer, more effective, have fewer or less severe side effects, are more convenient, or are less expensive than any products that we may develop or that would render any products that we may develop obsolete or non-competitive. Our competitors also may obtain FDA or other regulatory approval for their products more rapidly than we may obtain approval for ours, which could result in our competitors establishing a strong market position before we are able to enter the market. Additionally, technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing any product candidates we develop against competitors.

In addition, as a result of the expiration or successful challenge of our patent rights, we could face more litigation with respect to the validity and/or scope of patents relating to our competitors’ products. The availability of our

competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize.

Even if we are able to commercialize any product candidates, such products may become subject to unfavorable pricing regulations, third-party reimbursement practices, or healthcare reform initiatives, which would harm our business.

The regulations that govern marketing approvals, pricing, and reimbursement for new medicines vary widely from country to country. In the United States, recently enacted legislation may significantly change the approval requirements in ways that could involve additional costs and cause delays in obtaining approvals. Some countries require approval of the sale price of a medicine before it can be marketed. In many countries, the pricing review period begins after marketing or product licensing approval is granted. In some foreign markets, prescription pharmaceutical pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain marketing approval for a medicine in a particular country, but then be subject to price regulations that delay our commercial launch of the medicine, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the medicine in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if any product candidates we develop obtain marketing approval.

Our ability to commercialize any medicines successfully also will depend in part on the extent to which reimbursement for these medicines and related treatments will be available from government health administration authorities, private health insurers, and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which medications they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular medications. Increasingly, third-party payors are requiring that drug companies provide them with predetermined discounts from list prices and are challenging the prices charged for medical products. We cannot be sure that reimbursement will be available for any medicine that we commercialize and, if reimbursement is available, the level of reimbursement. Reimbursement may impact the demand for, or the price of, any product candidate for which we obtain marketing approval. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product candidate for which we obtain marketing approval.

There may be significant delays in obtaining reimbursement for newly approved medicines, and coverage may be more limited than the purposes for which the medicine is approved by the FDA or similar regulatory authorities outside the United States. Moreover, eligibility for reimbursement does not imply that any medicine will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution. Interim reimbursement levels for new medicines, if applicable, may also not be sufficient to cover our costs and may not be made permanent. Reimbursement rates may vary according to the use of the medicine and the clinical setting in which it is used, may be based on reimbursement levels already set for lower cost medicines and may be incorporated into existing payments for other services. Net prices for medicines may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of medicines from countries where they may be sold at lower prices than in the United States. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable payment rates from both government-funded and private payors for any approved medicines we may develop could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize medicines, and our overall financial condition.

Due to the novel nature of our technology and the potential for any product candidates we develop to offer therapeutic benefit in a single administration or limited number of administrations, we face uncertainty related to pricing and reimbursement for these product candidates.

Our initial target patient populations for some of our programs are relatively small, as a result of which the pricing and reimbursement of any product candidates we develop, if approved, must be adequate to support the necessary commercial infrastructure. If we are unable to obtain adequate levels of reimbursement, our ability to successfully market and sell any such product candidates will be adversely affected. The manner and level at which

reimbursement is provided for services related to any product candidates we develop, e.g., for administration of our product to patients, is also important. Inadequate reimbursement for such services may lead to physician resistance and adversely affect our ability to market or sell our products. In addition, it may be necessary for us to develop new reimbursement models in order to realize adequate value. Payors may not be able or willing to adopt such new models, and patients may be unable to afford that portion of the cost that such models may require them to bear. If we determine such new models are necessary but we are unsuccessful in developing them, or if such models are not adopted by payors, our business, financial condition, results of operations, and prospects could be adversely affected.

We expect the cost of a single administration of genomic medicine products, such as those we are seeking to develop, to be substantial, when and if they achieve regulatory approval. We expect that coverage and reimbursement by government and private payors will be essential for most patients to be able to afford these treatments. Accordingly, sales of any such product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of any product candidates we develop will be paid by health maintenance, managed care, pharmacy benefit, and similar healthcare management organizations, or will be reimbursed by government authorities, private health coverage insurers, and other third-party payors. Coverage and reimbursement by a third-party payor may depend upon several factors, including the third-party payor's determination that use of a product is:

- a covered benefit under its health plan;
- safe, effective, and medically necessary;
- appropriate for the specific patient;
- cost-effective; and
- neither experimental nor investigational.

Obtaining coverage and reimbursement for a product from third-party payors is a time-consuming and costly process that could require us to provide to the payor supporting scientific, clinical, and cost-effectiveness data. There is significant uncertainty related to third-party coverage and reimbursement of newly approved products. We may not be able to provide data sufficient to gain acceptance with respect to coverage and reimbursement. If coverage and reimbursement are not available, or are available only at limited levels, we may not be able to successfully commercialize any product candidates we develop. Even if coverage is provided, the approved reimbursement amount may not be adequate to realize a sufficient return on our investment.

Moreover, the downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become intense. As a result, increasingly high barriers are being erected to the entry of new products such as ours. If we are unable to obtain adequate levels of reimbursement, our ability to successfully market and sell any product candidates we develop will be harmed.

If the market opportunities for any product candidates we develop are smaller than we believe they are, our revenues may be adversely affected, and our business may suffer. Because the target patient populations for many of the product candidates we develop are small, we must be able to successfully identify patients and achieve a significant market share to maintain profitability and growth.

Some of our most advanced programs, including EDIT-101, focus on treatments for rare genetically defined diseases. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with product candidates we develop, are based on estimates. These estimates may prove to be incorrect and new studies may change the estimated incidence or prevalence of these diseases. The number of patients in the United States, Europe, and elsewhere may turn out to be lower than expected, and patients may not be amenable to treatment with our products, or may become increasingly difficult to identify or gain access to, all of which would adversely affect our business, financial condition, results of operations, and prospects.

Product liability lawsuits against us could cause us to incur substantial liabilities and could limit commercialization of any medicines that we may develop.

We face an inherent risk of product liability exposure related to the testing in human clinical trials of any product candidates we develop and will face an even greater risk if we commercially sell any medicines that we may develop. If we cannot successfully defend ourselves against claims that our product candidates or medicines caused injuries, we could incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for any product candidates or medicines that we may develop;
- injury to our reputation and significant negative media attention;
- withdrawal of clinical trial participants;
- significant time and costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- the inability to commercialize any medicines that we may develop.

Although we maintain product liability insurance coverage, it may not be adequate to cover all liabilities that we may incur. We anticipate that we will need to increase our insurance coverage if we successfully commercialize any medicine. Insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

If we or any contract manufacturers and suppliers we engage fail to comply with environmental, health, and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We and any contract manufacturers and suppliers we engage are subject to numerous federal, state, and local environmental, health, and safety laws, regulations, and permitting requirements, including those governing laboratory procedures; the generation, handling, use, storage, treatment, and disposal of hazardous and regulated materials and wastes; the emission and discharge of hazardous materials into the ground, air, and water; and employee health and safety. Our operations involve the use of hazardous and flammable materials, including chemicals and biological and radioactive materials. Our operations also produce hazardous waste. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. Under certain environmental laws, we could be held responsible for costs relating to any contamination at our current or past facilities and at third-party facilities. We also could incur significant costs associated with civil or criminal fines and penalties.

Compliance with applicable environmental laws and regulations may be expensive, and current or future environmental laws and regulations may impair our research and product development efforts. In addition, we cannot entirely eliminate the risk of accidental injury or contamination from these materials or wastes. Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials, this insurance may not provide adequate coverage against potential liabilities. We do not carry specific biological or hazardous waste insurance coverage, and our commercial general liability and umbrella liability policies (under which we currently have an aggregate of $7.0 million in coverage) specifically exclude coverage for damages and fines arising from biological or hazardous waste exposure or contamination. Accordingly, in the event of contamination or injury, we could be held liable for damages or be penalized with fines in an amount exceeding our resources, and our clinical trials or regulatory approvals could be suspended,

which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

In addition, we may incur substantial costs in order to comply with current or future environmental, health, and safety laws, regulations, and permitting requirements. These current or future laws, regulations, and permitting requirements may impair our research, development, or production efforts. Failure to comply with these laws, regulations, and permitting requirements also may result in substantial fines, penalties, or other sanctions or business disruption, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Any third-party contract manufacturers and suppliers we engage will also be subject to these and other environmental, health, and safety laws and regulations. Liabilities they incur pursuant to these laws and regulations could result in significant costs or an interruption in operations, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Genomic medicines are novel, and any product candidates we develop may be complex and difficult to manufacture. We could experience production problems that result in delays in our development or commercialization programs, limit the supply of our products, or otherwise harm our business.

Any product candidates we develop will likely require processing steps that are more complex than those required for most chemical pharmaceuticals. Moreover, unlike chemical pharmaceuticals, the physical and chemical properties of a biologic such as the product candidates we intend to develop generally cannot be fully characterized. As a result, assays of the finished product may not be sufficient to ensure that the product will perform in the intended manner. Problems with the manufacturing process, even minor deviations from the normal process, could result in product defects or manufacturing failures that result in lot failures, product recalls, product liability claims, or insufficient inventory. If we successfully develop product candidates, we may encounter problems achieving adequate quantities and quality of clinical-grade materials that meet FDA, EMA or other comparable applicable foreign standards or specifications with consistent and acceptable production yields and costs.

In addition, the FDA, the EMA, and other regulatory authorities may require us to submit samples of any lot of any approved product together with the protocols showing the results of applicable tests at any time. Under some circumstances, the FDA, the EMA, or other regulatory authorities may require that we not distribute a lot until the agency authorizes its release. Slight deviations in the manufacturing process, including those affecting quality attributes and stability, may result in unacceptable changes in the product that could result in lot failures or product recalls. Lot failures or product recalls could cause us to delay clinical trials, including the ongoing Phase 1/2 clinical trial for EDIT-101, or product launches, which could be costly to us and otherwise harm our business, financial condition, results of operations, and prospects.

We also may encounter problems hiring and retaining the experienced scientific, quality control, and manufacturing personnel needed to manage our manufacturing process, which could result in delays in our production or difficulties in maintaining compliance with applicable regulatory requirements.

Given the nature of biologics manufacturing, there is a risk of contamination during manufacturing. Any contamination could materially harm our ability to produce product candidates on schedule and could harm our results of operations and cause reputational damage. Some of the raw materials that we anticipate will be required in our manufacturing process are derived from biologic sources. Such raw materials are difficult to procure and may be subject to contamination or recall. A material shortage, contamination, recall, or restriction on the use of biologically derived substances in the manufacture of any product candidates we develop could adversely impact or disrupt the commercial manufacturing or the production of clinical material, which could materially harm our development timelines and our business, financial condition, results of operations, and prospects.

Any problems in our manufacturing process or the facilities with which we contract could make us a less attractive collaborator for potential partners, including larger pharmaceutical companies and academic research institutions, which could limit our access to additional attractive development programs. Problems in third-party manufacturing process or facilities also could restrict our ability to ensure sufficient clinical material for any clinical

trials we may be conducting or are planning to conduct and meet market demand for any products we develop and commercialize.

Risks Related to Our Dependence on Third Parties

We expect to depend on collaborations with third parties for the research, development, and commercialization of certain of the product candidates we develop or for development of certain of our research programs. If any such collaborations are not successful, we may not be able to capitalize on the market potential of those product candidates or research programs.

We anticipate seeking third-party collaborators for the research, development, and commercialization of certain of the product candidates we develop or for development of certain of our research programs. For example, in March 2017, we entered into a strategic alliance with Allergan focused on discovering, developing, and commercializing new gene editing medicines for a range of ocular disorders. Our likely collaborators for any other collaboration arrangements include large and mid-size pharmaceutical companies, regional and national pharmaceutical companies, and biotechnology companies. If we enter into any such arrangements with any third parties, we will likely have limited control over the amount and timing of resources that our collaborators dedicate to the development or commercialization of any product candidates we may seek to develop with them and, in the case of our strategic alliance with Allergan, whether they exercise any additional options to commercialize a product. Our ability to generate revenues from these arrangements will depend on our collaborators' abilities to successfully perform the functions assigned to them in these arrangements. We cannot predict the success of any collaboration that we enter into.

Collaborations involving our research programs or any product candidates we develop and alliance arrangements we may enter into under which our research programs may be involved and potential product candidates may be developed, including our strategic alliance with Allergan, pose the following risks to us:

- Collaborators may have significant discretion in determining the efforts and resources that they will apply to these collaborations.
- Collaborators may not pursue development and commercialization of any product candidates we develop or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in the collaborator's strategic focus or available funding or external factors such as an acquisition that diverts resources or creates competing priorities.
- Collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials, or require a new formulation of a product candidate for clinical testing.
- Collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our medicines or product candidates if the collaborators believe that competitive products are more likely to be successfully developed or can be commercialized under terms that are more economically attractive than ours.
- Collaborators with marketing and distribution rights to one or more medicines may not commit sufficient resources to the marketing and distribution of such medicine or medicines.
- Collaborators may not properly obtain, maintain, enforce, or defend our intellectual property or proprietary rights or may use our proprietary information in such a way as to invite litigation that could jeopardize or invalidate our proprietary information or expose us to potential litigation.
- Disputes may arise between the collaborators and us that result in the delay or termination of the research, development, or commercialization of our medicines or product candidates or that result in costly litigation or arbitration that diverts management attention and resources.

- We may lose certain valuable rights under circumstances identified in our collaborations, including if we undergo a change of control.

- Collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates.

- Collaboration agreements may not lead to development or commercialization of product candidates in the most efficient manner or at all. If a present or future collaborator of ours were to be involved in a business combination, the continued pursuit and emphasis on our product development or commercialization program under such collaboration could be delayed, diminished, or terminated.

If our collaborations do not result in the successful development and commercialization of products, or if one of our collaborators terminates its agreement with us, we may not receive any milestone or royalty payments under such collaborations. If we do not receive the funding we expect under these agreements, our development of product candidates could be delayed, and we may need additional resources to develop product candidates. In addition, if one of our collaborators terminates its agreement with us, we may find it more difficult to find a suitable replacement collaborator or attract new collaborators, and our development programs may be delayed or the perception of us in the business and financial communities could be adversely affected. All of the risks relating to product development, regulatory approval, and commercialization described in this Annual Report on Form 10-K apply to the activities of our collaborators.

We may in the future decide to collaborate with pharmaceutical and biotechnology companies for the development and potential commercialization of any product candidates we develop. These relationships, or those like them, may require us to incur non-recurring and other charges, increase our near- and long-term expenditures, issue securities that dilute our existing stockholders, or disrupt our management and business. In addition, we could face significant competition in seeking appropriate collaborators, and the negotiation process is time-consuming and complex. Our ability to reach a definitive collaboration agreement will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of several factors. If we license rights to any product candidates we or our collaborators may develop, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture.

If we are not able to establish collaborations on commercially reasonable terms, we may have to alter our development and commercialization plans.

Our product development and research programs and the potential commercialization of any product candidates we develop will require substantial additional cash to fund expenses. For some of the product candidates we develop or certain of our research programs, we may decide to collaborate with other pharmaceutical and biotechnology companies for the development and potential commercialization of those product candidates or programs.

We face significant competition in seeking appropriate collaborators. Whether we reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration, and the proposed collaborator's evaluation of a number of factors. Those factors may include the design or results of clinical trials, the likelihood of approval by the FDA or similar regulatory authorities outside the United States, the potential market for the subject product candidate, the costs and complexities of manufacturing and delivering such product candidate to patients, the potential of competing products, the existence of uncertainty with respect to our ownership of technology, which can exist if there is a challenge to such ownership without regard to the merits of the challenge, and industry and market conditions generally. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us.

We may also be restricted under existing collaboration agreements from entering into future agreements on certain terms with potential collaborators or allies. For example, under our amended and restated collaboration with Juno Therapeutics, we may not use directly or indirectly, or license others to use, genome editing technology in connection

with any research, development, manufacture, commercialization or other exploration of certain T cells, subject to certain exceptions, as more fully described in "Part I—Business—Our Collaborations and Licensing Strategy." Collaborations are also complex and time-consuming to negotiate and document. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies, including the acquisition of Juno Therapeutics' parent entity, Celgene Corporation by Bristol-Myers Squibb Company, and the impending acquisition of Allergan by AbbVie Inc., that have resulted in a reduced number of potential future collaborators.

We may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of the product candidate for which we are seeking to collaborate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of any sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop product candidates or bring them to market and generate product revenue.

We expect to rely on third parties to conduct our clinical trials and some aspects of our research and preclinical testing, and those third parties may not perform satisfactorily, including failing to meet deadlines for the completion of such trials, research, or testing.

We expect to rely on third parties, such as CROs, clinical data management organizations, medical institutions, and clinical investigators, to conduct our clinical trials. We currently rely and expect to continue to rely on third parties to conduct some aspects of our research and preclinical testing. Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it would delay our product development activities.

Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibilities. For example, we will remain responsible for ensuring that each of our clinical trials is conducted in accordance with the general investigational plan and protocols for the trial. Moreover, the FDA requires us to comply with standards, commonly referred to as Good Clinical Practices, for conducting, recording, and reporting the results of clinical trials to assure that data and reported results are credible and accurate and that the rights, integrity, and confidentiality of trial participants are protected. We also are required to register ongoing clinical trials and post the results of completed clinical trials on a government-sponsored database, ClinicalTrials.gov, within certain timeframes. Failure to do so can result in fines, adverse publicity, and civil and criminal sanctions.

Furthermore, these third parties may also have relationships with other entities, some of which may be our competitors. If these third parties do not successfully carry out their contractual duties, meet expected deadlines, or conduct our clinical trials in accordance with regulatory requirements or our stated protocols, we will not be able to obtain, or may be delayed in obtaining, marketing approvals for any product candidates we develop and will not be able to, or may be delayed in our efforts to, successfully commercialize our medicines.

We also expect to rely on other third parties to store and distribute drug supplies for our clinical trials. Any performance failure on the part of our distributors could delay clinical development or marketing approval of any product candidates we develop or commercialization of our medicines, producing additional losses and depriving us of potential product revenue.

We contract with third parties for the manufacture of materials for our research programs and preclinical studies and expect to continue to do so for clinical trials and for commercialization of any product candidates that we develop. This reliance on third parties increases the risk that we will not have sufficient quantities of such materials, product candidates, or any medicines that we may develop and commercialize, or that such supply will not be available to us at an acceptable cost, which could delay, prevent, or impair our development or commercialization efforts.

We have a limited ability to manufacture materials for our research programs and preclinical studies and we do

not operate any significant manufacturing facilities. We primarily rely on third-party manufacturers for the manufacture of our materials for preclinical studies and expect to continue to do so for clinical testing and for commercial supply of any product candidates that we develop and for which we or our collaborators obtain marketing approval. We do not have a long-term supply agreement with any of the third-party manufacturers, and we purchase our required supply on a purchase order basis.

We may be unable to establish any agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- the possible breach of the manufacturing agreement by the third party;
- the possible termination or nonrenewal of the agreement by the third party at a time that is costly or inconvenient for us; and
- reliance on the third party for regulatory compliance, quality assurance, safety, and pharmacovigilance and related reporting.

Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside the United States. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocations, seizures or recalls of product candidates or medicines, operating restrictions, and criminal prosecutions, any of which could significantly and adversely affect supplies of our medicines and harm our business, financial condition, results of operations, and prospects.

Any medicines that we may develop may compete with other product candidates and products for access to manufacturing facilities. There are a limited number of manufacturers that operate under cGMP regulations and that might be capable of manufacturing for us.

Any performance failure on the part of our existing or future manufacturers could delay clinical development or marketing approval. We do not currently have arrangements in place for redundant supply for bulk drug substances. If any one of our current contract manufacturer cannot perform as agreed, we may be required to replace that manufacturer. Although we believe that there are several potential alternative manufacturers who could manufacture any product candidates we develop, we may incur added costs and delays in identifying and qualifying any such replacement.

Our current and anticipated future dependence upon others for the manufacture of any product candidates we develop may adversely affect our future profit margins and our ability to commercialize any product candidates that receive marketing approval on a timely and competitive basis.

Risks Related to Our Intellectual Property

If we are unable to obtain and maintain patent protection for any products we develop and for our technology, or if the scope of the patent protection obtained is not sufficiently broad, our competitors could develop and commercialize products and technology similar or identical to ours, and our ability to successfully commercialize any product candidates we develop, and our technology may be adversely affected.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our CRISPR platform technology and any proprietary product candidates and technology we develop. We seek to protect our proprietary position by in-licensing intellectual property relating to our platform technology and filing patent applications in the United States and abroad related to our technologies and product candidates that are important to our business. If we or our licensors and/or collaborators are unable to obtain or maintain patent protection with respect to our CRISPR platform technology and any proprietary products and technology we develop, our business, financial condition, results of operations, and prospects could be materially harmed.

No consistent policy regarding the scope of claims allowable in the field of genome editing, including CRISPR technology, has emerged in the United States. The scope of patent protection outside of the United States is also uncertain. Changes in either the patent laws or their interpretation in the United States and other countries may diminish our ability to protect our inventions, obtain, maintain, and enforce our intellectual property rights and, more generally, could affect the value of our intellectual property or narrow the scope of our owned and licensed patents. With respect to both in-licensed and owned intellectual property, we cannot predict whether the patent applications we and our licensors are currently pursuing will issue as patents in any particular jurisdiction or whether the claims of any issued patents will provide sufficient protection from competitors.

The patent prosecution process is expensive, time-consuming, and complex, and we may not be able to file, prosecute, maintain, enforce, or license all necessary or desirable patent applications at a reasonable cost or in a timely manner. It is also possible that we will fail to identify patentable aspects of our research and development output in time to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to confidential or patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, CROs, contract manufacturers, consultants, advisors, and other third parties, any of these parties may breach the agreements and disclose such output before a patent application is filed, thereby jeopardizing our ability to seek patent protection. In addition, publications of discoveries in the scientific literature often lag behind the actual discoveries, and patent applications in the United States and other jurisdictions are typically not published until 18 months after filing, or in some cases not at all. Therefore, we cannot be certain that we were the first to make the inventions claimed in our owned or any licensed patents or pending patent applications, or that we were the first to file for patent protection of such inventions.

The patent position of biotechnology and pharmaceutical companies generally is highly uncertain, involves complex legal and factual questions, and has been the subject of much litigation in recent years. As a result, the issuance, scope, validity, enforceability, and commercial value of our patent rights are highly uncertain. Our pending and future patent applications may not result in patents being issued which protect our technology or product candidates or which effectively prevent others from commercializing competitive technologies and product candidates.

Moreover, the coverage claimed in a patent application can be significantly reduced before the patent is issued, and its scope can be reinterpreted after issuance. Even if patent applications we license or own issue as patents, they may not issue in a form that will provide us with any meaningful protection, prevent competitors or other third parties from competing with us, or otherwise provide us with any competitive advantage. Any patents that we hold or in-license may be challenged, narrowed, circumvented, or invalidated by third parties. Consequently, we do not know whether any of our platform advances and product candidates will be protectable or remain protected by valid and enforceable patents. Our competitors or other third parties may be able to circumvent our patents by developing similar or alternative technologies or products in a non-infringing manner. For example, we are aware that third parties have suggested the use of the CRISPR technology in conjunction with a protein other than Cas9 or Cas12a. Our owned and in-licensed patents may not cover CRISPR technology in conjunction with a protein other than Cas9 or Cas12a. If our competitors commercialize the CRISPR technology in conjunction with a protein other than Cas9 or Cas12a, our business, financial condition, results of operations, and prospects could be materially adversely affected.

The issuance of a patent is not conclusive as to its inventorship, scope, validity, or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. Our licensors are currently, and we or our licensors may in the future become, subject to a third party pre-issuance submission of prior art to the United States Patent and Trademark Office (the “USPTO”) or opposition, derivation, revocation, re-examination, post-grant and *inter partes* review, or interference proceedings and other similar proceedings challenging our patent rights or the patent rights of others. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights. Moreover, we, or one of our licensors, may have to participate in interference proceedings declared by the USPTO to determine priority of invention or in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge priority of invention or other features of patentability. Such challenges may result in loss of patent rights, loss of exclusivity, or in patent claims being narrowed, invalidated, or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit

the duration of the patent protection of our technology and product candidates. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us. As discussed below, some of our in-licensed patents are subject to interference, opposition and *ex parte* re-examination proceedings and therefore subject to these risks.

In addition, given the amount of time required for the development, testing, and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. As a result, our intellectual property may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours. Moreover, some of our owned and in-licensed patents and patent applications are, and may in the future be, co-owned with third parties. If we are unable to obtain an exclusive license to any such third party co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we or our licensors may need the cooperation of any such co-owners of our owned and in-licensed patents in order to enforce such patents against third parties, and such cooperation may not be provided to us or our licensors. Any of the foregoing could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Furthermore, our owned and in-licensed patents and patent applications may be subject to a reservation of rights by one or more third parties. For example, the research resulting in certain of our owned and in-licensed patent rights and technology was funded in part by the U.S. government. As a result, the U.S. government has certain rights, including march-in rights, to such patent rights and technology. When new technologies are developed with government funding, the government generally obtains certain rights in any resulting patents, including a non-exclusive license authorizing the government to use the invention. For example, our licensors, including The Broad Institute, Inc. ("Broad"), have granted the U.S. government non-exclusive, non-transferable, irrevocable, paid-up licenses to practice or have practiced for or on behalf of the United States, the inventions described in certain of our in-licensed patents and patent applications, including certain aspects of our in-licensed CRISPR technology. If the government decides to exercise these rights, it is not required to engage us as its contractor in connection with doing so. These rights may permit the U.S. government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology. The U.S. government can exercise its march-in rights if it determines that action is necessary because we fail to achieve practical application of the government-funded technology, because action is necessary to alleviate health or safety needs, to meet requirements of federal regulations, or to give preference to U.S. industry. In addition, our rights in such inventions may be subject to certain requirements to manufacture products embodying such inventions in the United States. Any exercise by the government of any of the foregoing rights could harm our competitive position, business, financial condition, results of operations, and prospects.

Our rights to develop and commercialize our technology and product candidates are subject, in part, to the terms and conditions of licenses granted to us by others.

We are heavily reliant upon licenses to certain patent rights and proprietary technology from third parties that are important or necessary to the development of our genome editing technology, including our CRISPR technology, and product candidates. These and other licenses may not provide exclusive rights to use such intellectual property and technology in all relevant fields of use and in all territories in which we may wish to develop or commercialize our technology and products in the future. As a result, we may not be able to prevent competitors from developing and commercializing competitive products in territories included in all of our licenses. For example, pursuant to our license agreements with Broad, and Broad and the President and Fellows of Harvard College ("Harvard"), the licensors may, under certain circumstances, grant a license to the patents that are the subject of such license agreements to a third party. Such third party would have full rights to the patent rights that are the subject of such licenses, which could impact our competitive position and enable a third party to commercialize products similar to our future product candidates and technology. Furthermore, under these license agreements, Broad has the right, after specified periods of time and subject to certain limitations, to designate gene targets for which Broad, whether alone or together with an affiliate or third party, has an interest in researching and developing products that would otherwise be covered by rights licensed to us under the agreements. Any of the foregoing would narrow the scope of our exclusive rights to the patents and patent applications we have in-licensed from Broad. The terms of these license agreements are described more fully under "Part I—Business—Our Collaborations and Licensing Strategy" in this Annual Report on Form 10-K. In addition, our rights

to our in-licensed patents and patent applications are dependent, in part, on inter-institutional or other operating agreements between the joint owners of such in-licensed patents and patent applications. If one or more of such joint owners breaches such inter-institutional or operating agreements, our rights to such in-licensed patents and patent applications may be adversely affected, which could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

In addition, we may not have the right to control the preparation, filing, prosecution, maintenance, enforcement, and defense of patents and patent applications covering the technology that we license from third parties. For example, pursuant to each of our intellectual property licenses with Broad, Harvard, and The General Hospital Corporation, d/b/a Massachusetts General Hospital, our licensors retain control of preparation, filing, prosecution, and maintenance, and, in certain circumstances, enforcement and defense of their patents and patent applications. Therefore, we cannot be certain that these patents and patent applications will be prepared, filed, prosecuted, maintained, enforced, and defended in a manner consistent with the best interests of our business. If our licensors fail to prosecute, maintain, enforce, and defend such patents, or lose rights to those patents or patent applications, the rights we have licensed may be reduced or eliminated, and our right to develop and commercialize any of our products that are subject of such licensed rights could be adversely affected. Additionally, given that we are required to reimburse our licensors for all of their expenses related to the prosecution, maintenance, enforcement and defense of patents and patent applications that we in-license from them, given the ongoing nature of the interference, opposition and re-examination proceedings involving the patents licensed to us under our license agreement with Harvard and Broad, and given that our obligation to make such reimbursements are not subject to any limitations, we anticipate that our obligation to reimburse our licensors for expenses related to these matters will continue to be substantial. In connection with these reimbursement obligations, we incurred expenses in aggregate amounts of $14.0 million, $14.2 million, and $18.7 million during the years ended December 31, 2019, 2018 and 2017.

Our licensors may have relied on third party consultants or collaborators or on funds from third parties such that our licensors are not the sole and exclusive owners of the patents and patent applications we in-license. For example, certain patent applications licensed to us by Broad are co-owned with NIH. Broad does not and does not purport to grant any rights in NIH's interest in these patent applications under our agreement. If other third parties have ownership rights to our in-licensed patents and patent applications, they may be able to license such patents and patent applications to our competitors, and our competitors could market competing products and technology. This could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

In spite of our best efforts, our licensors might conclude that we have materially breached our license agreements and might therefore terminate the license agreements, thereby removing our ability to develop and commercialize products and technology covered by these license agreements. If these in-licenses are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products identical to ours. In addition, we may seek to obtain additional licenses from our licensors and, in connection with obtaining such licenses, we may agree to amend our existing licenses in a manner that may be more favorable to the licensors, including by agreeing to terms that could enable third parties (potentially including our competitors) to receive licenses to a portion of the intellectual property that is subject to our existing licenses. Any of these events could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

Some of our in-licensed patents are subject to priority and validity disputes. In addition, our owned and in-licensed patents, patent applications and other intellectual property may be subject to further priority and validity disputes, and other similar intellectual property proceedings including inventorship disputes. If we or our licensors are unsuccessful in any of these proceedings, we may be required to obtain licenses from third parties, which may not be available on commercially reasonable terms or at all, or to cease the development, manufacture, and commercialization of one or more of the product candidates we develop, which could have a material adverse impact on our business.

Certain U.S. patents (U.S. Patent Nos. 8,697,359; 8,771,945; 8,795,965; 8,865,406; 8,871,445; 8,889,356; 8,895,308; 8,906,616; 8,932,814; 8,945,839; 8,993,233; and 8,999,641) and a U.S. patent application (U.S. Serial No. 14/704,551) that are co-owned by Broad and the Massachusetts Institute of Technology ("MIT"), and in some cases

Harvard, and in-licensed by us were involved in a first interference with a U.S. patent application (U.S. Serial No. 13/842,859, now U.S. Patent No. 10,266,850) that is co-owned by the University of California, the University of Vienna, and Emmanuelle Charpentier. An interference is a proceeding before the Patent Trial and Appeal Board of the USPTO ("PTAB") to determine priority of invention of the subject matter of patent claims filed by different parties.

During the preliminary motions phase of the proceeding, the PTAB held that there was no interference-in-fact, meaning that no interference was needed to resolve priority between the parties because the in-licensed claims are directed to subject matter that is patentably distinct from those of the University of California, the University of Vienna, and Emmanuelle Charpentier. The interference proceeding was therefore ended without reaching the priority phase. On appeal, the Court of Appeals for the Federal Circuit (the "CAFC") affirmed the PTAB's holding and the University of California, the University of Vienna, and Emmanuelle Charpentier did not appeal to the U.S. Supreme Court for review of this decision. The judgment of no interference-in-fact is therefore final and bars any further interference between the same parties for claims to the same invention that was considered in the interference. The invention that was considered in this first interference was related to a method that involves contacting a target DNA in a eukaryotic cell with certain defined CRISPR/Cas9 components for the purpose of cleaving or editing a target DNA molecule or modulating transcription of at least one gene encoded thereon.

As a result, the 12 U.S. patents and one U.S. patent application that we have in-licensed from Broad, acting on behalf of itself, MIT, and Harvard, with respect to which the PTAB had declared an interference were not modified or revoked as a result of this first interference proceeding. However, as discussed below, these 12 U.S. patents and one U.S. patent application are, and may in the future be, subject to further intellectual property proceedings and disputes, including interference proceedings.

On June 24, 2019, the PTAB declared a second interference between 10 pending U.S. patent applications (U.S. Serial No. 15/947,680; 15/947,700; 15/947,718; 15/981,807; 15/981,808; 15/981,809; 16/136,159; 16/136,165; 16/136,168; and 16/136,175) that are co-owned by the University of California, the University of Vienna, and Emmanuelle Charpentier and the same 12 U.S. patents and one U.S. patent application involved in the first interference that are co-owned by Broad and MIT, and in some cases Harvard, and in-licensed by us. One additional U.S. patent (U.S. Patent No. 9,840,713) that is co-owned by Broad and MIT and in-licensed by us and not involved in the first interference is also included in this second interference. On August 26, 2019, the PTAB re-declared the interference to add four pending U.S. patent applications (U.S. Serial No. 16/276,361; 16/276,365; 16/276,368; and 16/276,374) that are co-owned by the University of California, the University of Vienna, and Emmanuelle Charpentier. The declaration of interference described the interfering subject matter as related to a eukaryotic cell that comprises a target DNA and certain defined CRISPR/Cas9 components including a single-molecule guide RNA that are capable of cleaving or editing the target DNA molecule or modulating transcription of at least one gene encoded thereon.

Although we cannot predict with any certainty how long the second interference will actually take, each phase may take approximately a year or longer before a decision is made by the PTAB. It is possible for motions filed in the preliminary motions phase to be dispositive of the interference proceeding, such that the second priority phase is not reached. It is also possible that other third parties may seek to become a party to this interference.

The University of California, the University of Vienna, and Emmanuelle Charpentier or other third parties may file a separate Suggestion of Interference against the Broad patents and patent application that are subject to the interference or other U.S. patents and patent applications that we own or in-license. For example, ToolGen filed Suggestions of Interference in the USPTO on April 13, 2015 suggesting that they believe some of the claims in pending U.S. applications owned by ToolGen (U.S. Serial No. 14/685,568 and U.S. Serial No. 14/685,510) interfere with certain claims in five U.S. patents, which we have in-licensed from Broad, acting on behalf of itself, MIT, and Harvard. These five U.S. patents are among the 13 U.S. patents with respect to which the PTAB has declared a second interference. The Suggestions of Interference that were filed by ToolGen are still pending and it is uncertain when and in what manner the USPTO will act on them.

Our owned and in-licensed patents and patent applications are, or may in the future become, subject to validity disputes in the USPTO and other foreign patent offices. For example, a request for *ex parte* re-examination was filed with the USPTO on February 16, 2016 against one U.S. patent that we have in-licensed from Broad, acting on behalf of

itself and MIT (U.S. Patent No. 8,771,945), which is part of the second interference and referenced in the Suggestions of Interference filed by ToolGen. *Ex parte* re-examination is a procedure through which a third party can anonymously request the USPTO to re-examine a granted patent because the third party believes the granted patent may not be patentable over prior art in the form of a printed publication or another patent. Before the USPTO will re-examine a granted patent, the third party requestor must establish that the submitted prior art establishes a substantial and new question of patentability. If the USPTO determines there is a substantial and new question of patentability, it grants the re-examination request and re-examines the patent after giving the patent owner the option of filing an initial statement. The request for *ex parte* re-examination of U.S. Patent No. 8,771,945 was granted on May 9, 2016 thereby initiating a re-examination procedure between the USPTO and Broad, acting on behalf of itself and MIT. The third party requestor does not participate in the re-examination procedure after filing the request except that it has the option of responding if the patent owner chooses to file an initial statement. On May 12, 2016, the PTAB suspended the re-examination noting that it has jurisdiction over any file that involves a patent involved in an interference. On January 3, 2019, the PTAB lifted the suspension in light of the CAFC's affirmance of the PTAB's no interference-in-fact holding in the first interference. On June 24, 2019, when the PTAB declared the second interference it re-suspended the re-examination. It is uncertain when the PTAB will lift the suspension. If Broad is unsuccessful during the re-examination, U.S. Patent No. 8,771,945 may be revoked or narrowed, which could have a material adverse effect on the scope of our rights under such patent.

The 13 in-licensed U.S. patents and one in-licensed U.S. patent application that are the subject of the second interference (which includes the five in-licensed U.S. patents that are the subject of the Suggestions of Interference filed by ToolGen and the one in-licensed U.S. patent that is the subject of the re-examination) relate generally to the CRISPR/Cas9 system and its use in eukaryotic cells. The claims of the 13 in-licensed U.S. patents and one in-licensed U.S. patent application vary in scope and coverage and include claims that are directed to CRISPR/Cas9 systems that employ viral vectors for delivery, single guide RNAs, modified guide RNAs, *S. aureus* Cas9, or a Cas9 nickase and are relevant to our genome editing platform technology. The loss or narrowing in scope of one or more of these in-licensed patents could have a material adverse effect on the conduct of our business, financial condition, results of operations, and prospects.

We or our licensors may also be subject to claims that former employees, collaborators, or other third parties have an interest in our owned or in-licensed patents or patent applications, or other intellectual property rights as an inventor or co-inventor. If we are unable to obtain an exclusive license to any such third party co-owners' interest in such patents, patent applications or other intellectual property rights, such co-owners may be able to license their rights to other third parties, including our competitors. In addition, we may need the cooperation of any such co-owners to enforce any patents, including any patents that issue from patent applications, against third parties, and such cooperation may not be provided to us. Any of the foregoing could have a material adverse effect on the conduct of our business, financial condition, results of operations, and prospects.

We or our licensors are subject to and may in the future become a party to similar proceedings or priority disputes in Europe or other foreign jurisdictions. For example, four European patents that we have in-licensed from Broad, acting on behalf of itself and MIT, or itself, MIT and Harvard (European Patent Nos. EP 2,764,103 B1, EP 2,771,468 B1, EP 2,784,162 B1, and EP 2,931,898 B1) have been revoked in their entirety by the European Patent Office Opposition Division (the "Opposition Division"). Broad, acting on behalf of itself and MIT, or itself, MIT and Harvard filed notices of appeal to the Boards of Appeal of the EPO for review of the Opposition Division's decisions to revoke these four patents. On January 16, 2020, the Boards of Appeal dismissed the appeal filed for European Patent No. 2,771,468 B1, which means this European patent remains revoked in its entirety. On January 30, 2020, Broad acting on behalf of itself, MIT and Harvard withdrew the appeal filed for European Patent No. EP 2,931,898 B1, which means this European patent will remain revoked in its entirety. It is uncertain when or in what manner the Boards of Appeal will act on the two remaining appeals. It is uncertain when or in what manner the Boards of Appeal will act on these appeals. Two other European patents that we have in-licensed from Broad, acting on behalf of itself, MIT and Harvard (European Patent Nos. EP 2,896,697 B1 and EP 2,898,075 B1) were maintained with amended patent claims. Broad, acting on behalf of itself, MIT and Harvard has filed notices of appeal to the Boards of Appeal of the EPO for review of the Opposition Division's decisions to maintain these two patents with amended patent claims. Two of the opponents also filed a notice of appeal for European Patent No. EP 2,896,697 B1. It is uncertain when or in what manner the Boards of Appeal will act on these appeals. The Opposition Division has also initiated opposition proceedings against seven other

European patents that we have in-licensed from Broad, acting on behalf of itself, MIT and Harvard, or itself, MIT, Harvard and The Rockefeller University ("Rockefeller") (European Patent Nos. EP 2,825,654 B1, EP 2,840,140 B1, EP 2,921,557 B1, EP 2,931,892 B1, EP 2,931,897 B1, EP 2,940,140 B1, and EP 3,009,511 B1), and one European patent that we co-own and in-license from Broad, acting on behalf of itself, MIT and The University of Iowa Research Foundation (European Patent No. EP 3,066,201 B1). The EPO opposition proceedings may involve issues including, but not limited to, procedural formalities related to filing the European patent application, priority, and the patentability of the involved claims. The loss of priority for, or the loss of, these European patents could have a material adverse effect on the conduct of our business. One or more of the third parties that have filed oppositions against these European patents or other third parties may file future oppositions against other European patents that we in-license or own. For example, we are aware that oppositions have been filed against two European patents that we have in-licensed from Broad, acting on behalf of itself, MIT and Harvard (European Patent Nos. EP 3,494,997 B1 and EP 3,064,585 B1). The deadlines for filing oppositions against these European patents are June 18, 2020 and November 5, 2020, respectively. There may be other oppositions against these European patents that have not yet been filed or that have not yet been made available to the public.

If we or our licensors are unsuccessful in any patent related disputes, including interference proceedings, patent oppositions, re-examinations, or other priority, inventorship, or validity disputes to which we or they are subject (including any of the proceedings discussed above), we may lose valuable intellectual property rights through the loss of one or more patents owned or licensed or our owned or licensed patent claims may be narrowed, invalidated, or held unenforceable. In addition, if we or our licensors are unsuccessful in any inventorship disputes to which we or they are subject, we may lose valuable intellectual property rights, such as exclusive ownership of, or the exclusive right to use, our owned or in-licensed patents and patent applications. If we or our licensors are unsuccessful in any interference proceeding or other priority or inventorship dispute, we may be required to obtain and maintain licenses from third parties, including parties involved in any such interference proceedings or other priority or inventorship disputes. Such licenses may not be available on commercially reasonable terms or at all, or may be non-exclusive. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture, and commercialization of one or more of the product candidates we develop. The loss of exclusivity or the narrowing of our owned and in-licensed patent claims could limit our ability to stop others from using or commercializing similar or identical technology and products. Any of the foregoing could result in a material adverse effect on our business, financial condition, results of operations, or prospects. Even if we are successful in any interference proceeding or other priority, inventorship, or validity disputes, it could result in substantial costs and be a distraction to our management and other employees.

We may not be able to protect our intellectual property and proprietary rights throughout the world.

Filing, prosecuting, and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and the laws of foreign countries may not protect our rights to the same extent as the laws of the United States. In addition, our intellectual property license agreements may not always include worldwide rights. For example, certain U.S. patent applications licensed to us by Broad include The University of Tokyo ("Tokyo") and NIH as joint applicants. Broad has only granted a license to us with respect to its interests and to Tokyo's interests in these U.S. patent applications but not to any foreign equivalents thereof. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and, further, may export otherwise infringing products to territories where we have patent protection or licenses but enforcement is not as strong as that in the United States. These products may compete with our products, and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets, and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents and our intellectual property rights or marketing of competing products in violation of our intellectual property and proprietary rights generally. Proceedings to enforce our intellectual property and proprietary rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of

being invalidated or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate, and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property and proprietary rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Many countries have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, many countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of such patent. If we or any of our licensors is forced to grant a license to third parties with respect to any patents relevant to our business, our competitive position may be impaired, and our business, financial condition, results of operations, and prospects may be adversely affected.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment, and other requirements imposed by government patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees, and various other government fees on patents and applications will be due to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our owned or licensed patents and applications. In certain circumstances, we rely on our licensing partners to pay these fees due to U.S. and non-U.S. patent agencies. The USPTO and various non-U.S. government agencies require compliance with several procedural, documentary, fee payment, and other similar provisions during the patent application process. We are also dependent on our licensors to take the necessary action to comply with these requirements with respect to our licensed intellectual property. In some cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in a partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market with similar or identical products or technology, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We have entered into license agreements with third parties and may need to obtain additional licenses from our existing licensors and others to advance our research or allow commercialization of product candidates we develop. It is possible that we may be unable to obtain any additional licenses at a reasonable cost or on reasonable terms, if at all. In that event, we may be required to expend significant time and resources to redesign our technology, product candidates, or the methods for manufacturing them or to develop or license replacement technology, all of which may not be feasible on a technical or commercial basis. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could harm our business, financial condition, results of operations, and prospects significantly. We cannot provide any assurances that third party patents do not exist which might be enforced against our current technology, including CRISPR genome editing technology, manufacturing methods, product candidates, or future methods or products resulting in either an injunction prohibiting our manufacture or sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties, which could be significant.

In each of our license agreements, and we expect in our future agreements, we are responsible for bringing any actions against any third party for infringing on the patents we have licensed. Certain of our license agreements also require us to meet development thresholds to maintain the license, including establishing a set timeline for developing and commercializing products. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;

- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the inventorship and ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

In addition, the agreements under which we currently license intellectual property or technology from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, or increase what we believe to be our financial or other obligations under the relevant agreement, including the amount, if any, that may become due and payable to our licensors in connection with sublicense income. If these events were to occur, they could have a material adverse effect on our business, financial condition, results of operations, and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates, which could have a material adverse effect on our business, financial conditions, results of operations, and prospects.

We may not be successful in obtaining necessary rights to any product candidates we develop through acquisitions and in-licenses.

We currently have rights to intellectual property, through licenses from third parties, to identify and develop product candidates. Many pharmaceutical companies, biotechnology companies, and academic institutions are competing with us in the field of genome editing technology and filing patent applications potentially relevant to our business. For example, we are aware of third party patents and patent applications that may be construed to cover our CRISPR technology and product candidates. In order to avoid infringing these third party patents, or patents that issue from these third party patent applications, we may find it necessary or prudent to obtain licenses from such third party intellectual property holders. We may also require licenses from third parties for certain non-CRISPR technologies including certain delivery methods that we are evaluating for use with product candidates we develop. In addition, with respect to any patents we co-own with third parties, we may require licenses to such co-owners' interest in such patents. However, we may be unable to secure such licenses or otherwise acquire or in-license any compositions, methods of use, processes, or other intellectual property rights from third parties that we identify as necessary for our CRISPR technology and product candidates we develop. The licensing or acquisition of third party intellectual property rights is a competitive area, and several more established companies may pursue strategies to license or acquire third party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. For example, certain methods for editing immune cells, guide RNA modifications and delivery modes, including certain adeno-associated virus vector technologies, that we are evaluating for use are covered by patents held by third parties. If we are unable to successfully obtain rights to required third party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant program or product candidate, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith America Invents Act (the "America Invents Act") enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by the USPTO administered post-grant proceedings, including post-grant review, *inter partes* review, and derivation proceedings. The America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

In addition, the patent positions of companies in the development and commercialization of biologics and pharmaceuticals are particularly uncertain. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. This combination of events has created uncertainty with respect to the validity and enforceability of patents, once obtained. Depending on future actions by the U.S. Congress, the federal courts, and the USPTO, the laws and regulations governing patents could change in unpredictable ways that could have a material adverse effect on our existing patent portfolio and our ability to protect and enforce our intellectual property in the future.

Issued patents covering our technology and product candidates could be found invalid or unenforceable if challenged in court or before administrative bodies in the United States or abroad.

If we or one of our licensors or our collaborators were to initiate legal proceedings against a third party to enforce a patent covering a product candidate we develop or our technology, including CRISPR genome editing technology, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness, or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO, or made a misleading statement, during prosecution. Third parties have raised challenges to the validity of certain of our in-licensed patent claims and may in the future raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). For example, as discussed above, 13 of our in-licensed U.S. patents and one of our in-licensed U.S. patent applications are involved in an interference, and Suggestions of Interference have been filed against certain of our in-licensed U.S. patents, one of these U.S. patents is subject to a re-examination proceeding, opposition proceedings have been initiated against several of our in-licensed European patents and additional interference, re-examination, post-grant review, *inter partes* review, opposition, and other intellectual property proceedings may be initiated in the future. The opposition proceedings have so far resulted in the revocation of four of our in-licensed European patents while maintaining two of our in-licensed European patents with amended claims. In view of certain arguments made by the third parties against the revoked patents and similar arguments made by the third parties against other in-licensed European patents under opposition, and in view of the Boards of Appeal's dismissal of the appeal filed for European Patent No. 2,771,468 B1, the opposition proceedings will likely lead to the revocation of additional in-licensed European patents. These and other proceedings could result in the revocation or cancellation of, or amendment to our patents in such a way that they no longer cover our technology or platform, or any product candidates that we develop. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity

question, for example, we cannot be certain that there is no invalidating prior art, of which we or our licensing partners and the patent examiner were unaware during prosecution. If a third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our technology or platform, or any product candidates that we develop. Such a loss of patent protection would have a material adverse impact on our business, financial condition, results of operations, and prospects.

The intellectual property landscape around genome editing technology, including CRISPR, is highly dynamic, and third parties may initiate legal proceedings alleging that we are infringing, misappropriating, or otherwise violating their intellectual property rights, the outcome of which would be uncertain and could have a material adverse effect on the success of our business.

The field of genome editing, especially in the area of CRISPR technology, is still in its infancy, and no such products have reached the market. Due to the intense research and development that is taking place by several companies, including us and our competitors, in this field, the intellectual property landscape is in flux, and it may remain uncertain for the coming years. There may be significant intellectual property related litigation and proceedings relating to our owned and in-licensed, and other third party, intellectual property and proprietary rights in the future.

Our commercial success depends upon our ability and the ability of our collaborators to develop, manufacture, market, and sell any product candidates that we develop and use our proprietary technologies without infringing, misappropriating, or otherwise violating the intellectual property and proprietary rights of third parties. The biotechnology and pharmaceutical industries are characterized by extensive litigation regarding patents and other intellectual property rights. We are subject to and may in the future become party to, or threatened with, adversarial proceedings or litigation regarding intellectual property rights with respect to our technology and any product candidates we develop, including interference, re-examination, post-grant review, *inter partes* review, and derivation proceedings before the USPTO and similar proceedings in foreign jurisdictions such as oppositions before the EPO. Third parties may assert infringement claims against us based on existing patents or patents that may be granted in the future, regardless of their merit. We are aware of certain third party patents and patent applications in this landscape that may be asserted to encompass our CRISPR/Cas9 technology. In particular, we are aware of several separate families of U.S. patents and/or U.S. patent applications and foreign counterparts which relate to CRISPR/Cas9 technology, where the earliest priority dates of each family pre-date the priority dates of our in-licensed patents and patent applications, including PCT Publication No. WO 2013/141680 (and its related U.S. Patent No. 9,637,739 and other related U.S. patent applications and foreign counterparts including European Patent No. EP 2,828,386 B1, which is being opposed by at least one party) filed by Vilnius University (which is reported to have exclusively licensed its rights to DuPont Pioneer, which is reported to have licensed certain rights to Caribou Biosciences, which is reported to have non-exclusively licensed certain rights to Intellia Therapeutics and CRISPR Therapeutics), WO 2013/176772 (and its related U.S. Patents including U.S. Patent Nos. 10,000,772, 10,113,167, 10,227,611, and 10,266,850, 10,301,651, 10,308,961, 10,337,029, 10,351,878, 10,358,658, and 10,358,659 among others, and other related U.S. patent applications and foreign counterparts including European Patent Nos. EP 2,800,811 B1, EP 3,241,902 B1, and EP 3,401,400 B1 which are being opposed by several parties) filed by the University of California, the University of Vienna (both of which are reported to have exclusively licensed their rights to Caribou Biosciences, which is reported to have exclusively licensed certain rights to Intellia Therapeutics), and Emmanuelle Charpentier (who is reported to have exclusively licensed her rights to CRISPR Therapeutics, ERS Genomics and TRACR Hematology), WO 2014/065596 (and its related U.S. patent applications and foreign counterparts including European Patent No. EP 2,912,175 B1 which is being opposed by several parties) filed by ToolGen, and WO 2014/089290 (and its related U.S. patent applications and foreign counterparts including European Patent Nos. EP 2,928,496 B1, EP 3,138,910 B1, EP 3,138,911 B1, EP 3,138,912 B1, EP 3,360,964 B1 and EP 3,363,902 B1, which are being opposed by several parties) filed by Sigma-Aldrich Co. LLC. Each of these patent families are owned by a different third party and contain claims that may be construed to cover components and uses of CRISPR/Cas9 technology. If we are not able to obtain or maintain a license on commercially reasonable terms to any third-party patents that cover our product candidates or activities, such third parties could potentially assert infringement claims against us, which could have a material adverse effect on the conduct of our business.

Even if we believe third-party intellectual property claims are without merit, there is no assurance that a court would find in our favor on questions of infringement, validity, enforceability, or priority. A court of competent

jurisdiction could hold that these third party patents are valid, enforceable, and infringed, which could materially and adversely affect our ability to commercialize any product candidates we develop and any other product candidates or technologies covered by the asserted third party patents. In order to successfully challenge the validity of any such U.S. patent in federal court, we would need to overcome a presumption of validity. As this burden is a high one requiring us to present clear and convincing evidence as to the invalidity of any such U.S. patent claim, there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. If we are found to infringe a third party's intellectual property rights, and we are unsuccessful in demonstrating that such patents are invalid or unenforceable, we could be required to obtain a license from such third party to continue developing, manufacturing, and marketing any product candidates we develop and our technology. However, we may not be able to obtain any required license on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors and other third parties access to the same technologies licensed to us, and it could require us to make substantial licensing and royalty payments. We also could be forced, including by court order, to cease developing, manufacturing, and commercializing the infringing technology or product candidates. In addition, we could be found liable for significant monetary damages, including treble damages and attorneys' fees, if we are found to have willfully infringed a patent or other intellectual property right. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar material adverse effect on our business, financial condition, results of operations, and prospects.

We may be subject to claims that our employees, consultants, or advisors have wrongfully used or disclosed alleged trade secrets of their current or former employers or claims asserting ownership of what we regard as our own intellectual property.

Many of our employees, consultants, and advisors are currently or were previously employed at universities or other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants, and advisors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or these individuals have used or disclosed intellectual property, including trade secrets or other proprietary information, of any such individual's current or former employer. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

We may become involved in lawsuits to protect or enforce our patents and other intellectual property rights, which could be expensive, time consuming, and unsuccessful.

Competitors may infringe our patents or the patents of our licensing partners, or we may be required to defend against claims of infringement. In addition, our patents or the patents of our licensing partners also are, and may in the future become, involved in inventorship, priority, or validity disputes. To counter or defend against such claims can be expensive and time consuming. In an infringement proceeding, a court may decide that a patent owned or in-licensed by us is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our owned and in-licensed patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our owned or in-licensed patents at risk of being invalidated or interpreted narrowly. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation.

Even if resolved in our favor, litigation or other legal proceedings relating to intellectual property claims may

cause us to incur significant expenses and could distract our personnel from their normal responsibilities. In addition, there could be public announcements of the results of hearings, motions, or other interim proceedings or developments, and if securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing, or distribution activities. We may not have sufficient financial or other resources to conduct such litigation or proceedings adequately. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to seeking patents for some of our technology and product candidates, we also rely on trade secrets and confidentiality agreements to protect our unpatented know-how, technology, and other proprietary information and to maintain our competitive position. With respect to our technology platform, we consider trade secrets and know-how to be one of our primary sources of intellectual property. Trade secrets and know-how can be difficult to protect. In particular, we anticipate that with respect to our technology platform, these trade secrets and know-how will over time be disseminated within the industry through independent development, the publication of journal articles describing the methodology, and the movement of personnel from academic to industry scientific positions.

We seek to protect these trade secrets and other proprietary technology, in part, by entering into non-disclosure and confidentiality agreements with parties who have access to them, such as our employees, collaborators, CROs, contract manufacturers, consultants, advisors, and other third parties. We also enter into confidentiality and invention or patent assignment agreements with our employees and consultants. We cannot guarantee that we have entered into such agreements with each party that may have or have had access to our trade secrets or proprietary technology and processes. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive, and time-consuming, and the outcome is unpredictable. In addition, some courts inside and outside the United States are less willing or unwilling to protect trade secrets. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. If any of our trade secrets were to be disclosed to or independently developed by a competitor or other third party, our competitive position would be materially and adversely harmed.

If we do not obtain patent term extension and data exclusivity for any product candidates we develop, our business may be materially harmed.

Depending upon the timing, duration and specifics of any FDA marketing approval of any product candidates we develop, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Action of 1984 (the “Hatch-Waxman Amendments”). The Hatch-Waxman Amendments permit a patent extension term of up to five years as compensation for patent term lost during the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, only one patent may be extended and only those claims covering the approved drug, a method for using it, or a method for manufacturing it may be extended. However, we may not be granted an extension because of, for example, failing to exercise due diligence during the testing phase or regulatory review process, failing to apply within applicable deadlines, failing to apply prior to expiration of relevant patents, or otherwise failing to satisfy applicable requirements. Moreover, the applicable time period or the scope of patent protection afforded could be less than we request. If we are unable to obtain patent term extension or term of any such extension is less than we request, our competitors may obtain approval of competing products following our patent expiration, and our business, financial condition, results of operations, and prospects could be materially harmed.

Intellectual property rights do not necessarily address all potential threats.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make products that are similar to any product candidates we develop or utilize similar technology but that are not covered by the claims of the patents that we license or may own in the future;
- we, or our license partners or current or future collaborators, might not have been the first to make the inventions covered by the issued patent or pending patent application that we license or may own in the future;
- we, or our license partners or current or future collaborators, might not have been the first to file patent applications covering certain of our or their inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our owned or licensed intellectual property rights;
- it is possible that our pending licensed patent applications or those that we may own in the future will not lead to issued patents;
- issued patents that we hold rights to may be held invalid or unenforceable, including as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- the patents of others may harm our business; and
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property.

Should any of these events occur, they could have a material adverse effect on our business, financial condition, results of operations, and prospects.

Risks Related to Regulatory Approval and Other Legal Compliance Matters

Even if we complete the necessary preclinical studies and clinical trials, the marketing approval process is expensive, time-consuming, and uncertain and may prevent us from obtaining approvals for the commercialization of any product candidates we develop. If we are not able to obtain, or if there are delays in obtaining, required regulatory approvals, we will not be able to commercialize, or will be delayed in commercializing, product candidates we develop, and our ability to generate revenue will be materially impaired.

Any product candidates we develop and the activities associated with their development and commercialization, including their design, testing, manufacture, safety, efficacy, recordkeeping, labeling, storage, approval, advertising, promotion, sale, and distribution, are subject to comprehensive regulation by the FDA and other regulatory authorities in the United States and by comparable authorities in other countries. Failure to obtain marketing approval for a product candidate will prevent us from commercializing the product candidate in a given jurisdiction. We have not received approval to market any product candidates from regulatory authorities in any jurisdiction. We have only limited

experience in filing and supporting the applications necessary to gain marketing approvals and expect to rely on third-party CROs to assist us in this process. Securing regulatory approval requires the submission of extensive preclinical and clinical data and supporting information to the various regulatory authorities for each therapeutic indication to establish the biologic product candidate's safety, purity, and potency. Securing regulatory approval also requires the submission of information about the product manufacturing process to, and inspection of manufacturing facilities by, the relevant regulatory authority. Any product candidates we develop may not be effective, may be only moderately effective, or may prove to have undesirable or unintended side effects, toxicities, or other characteristics that may preclude our obtaining marketing approval or prevent or limit commercial use.

The process of obtaining marketing approvals, both in the United States and abroad, is expensive, may take many years if additional clinical trials are required, if approval is obtained at all, and can vary substantially based upon a variety of factors, including the type, complexity, and novelty of the product candidates involved. Changes in marketing approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application. The FDA and comparable authorities in other countries have substantial discretion in the approval process and may refuse to accept any application or may decide that our data is insufficient for approval and require additional preclinical, clinical, or other studies. In addition, varying interpretations of the data obtained from preclinical and clinical testing could delay, limit, or prevent marketing approval of a product candidate. Any marketing approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved medicine not commercially viable.

If we experience delays in obtaining approval or if we fail to obtain approval of any product candidates we develop, the commercial prospects for those product candidates may be harmed, and our ability to generate revenues will be materially impaired.

Failure to obtain marketing approval in foreign jurisdictions would prevent any product candidates we develop from being marketed in such jurisdictions, which, in turn, would materially impair our ability to generate revenue.

In order to market and sell any product candidates we develop in the European Union and many other foreign jurisdictions, we or our collaborators must obtain separate marketing approvals and comply with numerous and varying regulatory requirements. The approval procedure varies among countries and can involve additional testing. The time required to obtain approval may differ substantially from that required to obtain FDA approval. The regulatory approval process outside the United States generally includes all of the risks associated with obtaining FDA approval. In addition, in many countries outside the United States, it is required that the product be approved for reimbursement before the product can be approved for sale in that country. We or these third parties may not obtain approvals from regulatory authorities outside the United States on a timely basis, if at all. Approval by the FDA does not ensure approval by regulatory authorities in other countries or jurisdictions, and approval by one regulatory authority outside the United States does not ensure approval by regulatory authorities in other countries or jurisdictions or by the FDA. We may not be able to file for marketing approvals and may not receive necessary approvals to commercialize our medicines in any jurisdiction, which would materially impair our ability to generate revenue.

Additionally, on June 23, 2016, the electorate in the United Kingdom voted in favor of leaving the European Union, commonly referred to as Brexit. Following protracted negotiations, the United Kingdom left the European Union on January 31, 2020. Under the withdrawal agreement, there is a transitional period until December 31, 2020 (extendable up to two years). Discussions between the United Kingdom and the European Union have so far mainly focused on finalizing withdrawal issues and transition agreements but have been extremely difficult to date. To date, only an outline of a trade agreement has been reached. Much remains open but the Prime Minister has indicated that the United Kingdom will not seek to extend the transitional period beyond the end of 2020. If no trade agreement has been reached before the end of the transitional period, there may be significant market and economic disruption. The Prime Minister has also indicated that the United Kingdom will not accept high regulatory alignment with the European Union.

Since the regulatory framework for pharmaceutical products in the United Kingdom covering the quality, safety, and efficacy of pharmaceutical products, clinical trials, marketing authorization, commercial sales, and distribution of pharmaceutical products is derived from European Union directives and regulations, Brexit could

materially impact the future regulatory regime that applies to products and the approval of product candidates in the United Kingdom. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, may force us to restrict or delay efforts to seek regulatory approval in the United Kingdom for our product candidates, which could significantly and materially harm our business.

Even if we, or any collaborators we may have, obtain marketing approvals for any product candidates we develop, the terms of approvals and ongoing regulation of our products could require the substantial expenditure of resources and may limit how we, or they, manufacture and market our products, which could materially impair our ability to generate revenue.

Any product candidate for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising, and promotional activities for such medicine, will be subject to continual requirements of and review by the FDA and other regulatory authorities. These requirements include submissions of safety and other post-marketing information and reports, registration and listing requirements, cGMP requirements relating to quality control, quality assurance and corresponding maintenance of records and documents, and requirements regarding the distribution of samples to physicians and recordkeeping. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the medicine may be marketed or to the conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the medicine.

Accordingly, assuming we, or any collaborators we may have, receive marketing approval for one or more product candidates we develop, we, and such collaborators, and our and their contract manufacturers will continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, production, product surveillance, and quality control. If we and such collaborators are not able to comply with post-approval regulatory requirements, we and such collaborators could have the marketing approvals for our products withdrawn by regulatory authorities and our, or such collaborators', ability to market any future products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our business, operating results, financial condition, and prospects.

Any product candidate for which we obtain marketing approval could be subject to restrictions or withdrawal from the market, and we may be subject to substantial penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our medicines, when and if any of them are approved.

The FDA and other regulatory agencies closely regulate the post-approval marketing and promotion of medicines to ensure that they are marketed only for the approved indications and in accordance with the provisions of the approved labeling. The FDA and other regulatory agencies impose stringent restrictions on manufacturers' communications regarding off-label use, and if we do not market our medicines for their approved indications, we may be subject to enforcement action for off-label marketing by the FDA and other federal and state enforcement agencies, including the Department of Justice. Violation of the Federal Food, Product, and Cosmetic Act and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription products may also lead to investigations or allegations of violations of federal and state health care fraud and abuse laws and state consumer protection laws.

In addition, later discovery of previously unknown problems with our medicines, manufacturers, or manufacturing processes, or failure to comply with regulatory requirements, may yield various results, including:

- restrictions on such medicines, manufacturers, or manufacturing processes;
- restrictions on the labeling or marketing of a medicine;
- restrictions on the distribution or use of a medicine;
- requirements to conduct post-marketing clinical trials;

- receipt of warning or untitled letters;
- withdrawal of the medicines from the market;
- refusal to approve pending applications or supplements to approved applications that we submit;
- recall of medicines;
- fines, restitution, or disgorgement of profits or revenue;
- suspension or withdrawal of marketing approvals;
- suspension of any ongoing clinical trials;
- refusal to permit the import or export of our medicines;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize any product candidates we develop and adversely affect our business, financial condition, results of operations, and prospects.

Our relationships with healthcare providers, physicians, and third-party payors will be subject to applicable anti-kickback, fraud and abuse, and other healthcare laws and regulations, which could expose us to criminal sanctions, civil penalties, contractual damages, reputational harm, and diminished profits and future earnings.

Healthcare providers, physicians, and third-party payors play a primary role in the recommendation and prescription of any product candidates that we develop for which we obtain marketing approval. Our future arrangements with third-party payors and customers may expose us to broadly applicable fraud and abuse and other healthcare laws and regulations that may constrain the business or financial arrangements and relationships through which we market, sell, and distribute our medicines for which we obtain marketing approval. Restrictions under applicable federal and state healthcare laws and regulations include the following:

- the federal healthcare anti-kickback statute prohibits, among other things, persons from knowingly and willfully soliciting, offering, receiving, or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward either the referral of an individual for, or the purchase, order, or recommendation of, any good or service, for which payment may be made under federal and state healthcare programs such as Medicare and Medicaid;
- the federal False Claims Act imposes criminal and civil penalties, including civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment or approval from Medicare, Medicaid, or other government payors that are false or fraudulent or making a false statement to avoid, decrease, or conceal an obligation to pay money to the federal government, with potential liability including mandatory treble damages and significant per-claim penalties, currently set at $11,181 to $22,363 per false claim;
- the federal Health Insurance Portability and Accountability Act of 1996, as further amended by the Health Information Technology for Economic and Clinical Health Act, which imposes certain requirements, including mandatory contractual terms, with respect to safeguarding the privacy, security, and transmission of individually identifiable health information without appropriate authorization by entities subject to the

rule, such as health plans, health care clearinghouses, and health care providers;

- the federal false statements statute, which prohibits knowingly and willfully falsifying, concealing, or covering up a material fact or making any materially false statement in connection with the delivery of or payment for healthcare benefits, items, or services;

- the federal transparency requirements under the federal Physician Payment Sunshine Act, which requires manufacturers of drugs, devices, biologics, and medical supplies to report to the Department of Health and Human Services information related to payments and other transfers of value to physicians and teaching hospitals, and ownership and investment interests held by physicians and other healthcare providers and their immediate family members and applicable group purchasing organizations; and

- analogous state laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers, and certain state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government in addition to requiring drug manufacturers to report information related to payments to physicians and other health care providers or marketing expenditures.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available, it is possible that some of our business activities could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines, exclusion from participation in government health care programs, such as Medicare and Medicaid, imprisonment, and the curtailment or restructuring of our operations, any of which could adversely affect our business, financial condition, results of operations, and prospects.

The provision of benefits or advantages to physicians to induce or encourage the prescription, recommendation, endorsement, purchase, supply, order, or use of medicinal products is prohibited in the European Union. The provision of benefits or advantages to physicians is also governed by the national anti-bribery laws of European Union Member States, such as the UK Bribery Act 2010. Infringement of these laws could result in substantial fines and imprisonment.

Payments made to physicians in certain European Union Member States must be publicly disclosed. Moreover, agreements with physicians often must be the subject of prior notification and approval by the physician's employer, his or her competent professional organization, and/or the regulatory authorities of the individual European Union Member States. These requirements are provided in the national laws, industry codes, or professional codes of conduct applicable in the European Union Member States. Failure to comply with these requirements could result in reputational risk, public reprimands, administrative penalties, fines, or imprisonment.

Efforts to ensure that our business arrangements with third parties will comply with applicable healthcare laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations, or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of these laws or any other governmental regulations that may apply to us, we may be subject to significant civil, criminal, and administrative penalties, damages, fines, exclusion from government funded healthcare programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business are found to be not in compliance with applicable laws, they may be subject to criminal, civil, or administrative sanctions, including exclusions from government funded healthcare programs. Liabilities they incur pursuant to these laws could result in significant costs or an interruption in operations, which could have a material adverse effect on our business, financial condition, results of operations, and prospects.

The efforts of the current presidential administration to pursue regulatory reform may limit the FDA's ability to engage in oversight and implementation activities in the normal course, and that could negatively impact our business.

The current presidential administration has taken several executive actions, including the issuance of a number of executive orders, that could impose significant burdens on, or otherwise materially delay, the FDA's ability to engage in routine regulatory and oversight activities such as implementing statutes through rulemaking, issuance of guidance, and review and approval of marketing applications. On January 30, 2017, the president issued an executive order, applicable to all executive agencies, including the FDA, that requires that for each notice of proposed rulemaking or final regulation to be issued in fiscal year 2017, the agency shall identify at least two existing regulations to be repealed, unless prohibited by law. These requirements are referred to as the "two-for-one" provisions. This executive order includes a budget neutrality provision that requires the total incremental cost of all new regulations in the 2017 fiscal year, including repealed regulations, to be no greater than zero, except in limited circumstances. For fiscal years 2018 and beyond, the executive order requires agencies to identify regulations to offset any incremental cost of a new regulation. In interim guidance issued by the Office of Information and Regulatory Affairs within the Office of Management and on February 2, 2017, the administration indicates that the "two-for-one" provisions may apply not only to agency regulations, but also to significant agency guidance documents. It is difficult to predict how these requirements will be implemented, and the extent to which they will impact the FDA's ability to exercise its regulatory authority. If these executive actions impose constraints on FDA's ability to engage in oversight and implementation activities in the normal course, our business may be negatively impacted.

Recently enacted and future legislation may increase the difficulty and cost for us and any future collaborators to obtain marketing approval of and commercialize our product candidates and affect the prices we, or they, may obtain.

In the United States and some foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the healthcare system that could, among other things, prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability, or the ability of any future collaborators, to profitably sell any products for which we, or they, obtain marketing approval. We expect that current laws, as well as other healthcare reform measures that may be adopted in the future, may result in more rigorous coverage criteria and in additional downward pressure on the price that we, or any future collaborators, may receive for any approved products.

In the United States, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (the "Medicare Modernization Act"), changed the way Medicare covers and pays for pharmaceutical products. The legislation expanded Medicare coverage for drug purchases by the elderly and introduced a new reimbursement methodology based on average sales prices for physician administered drugs. In addition, this legislation provided authority for limiting the number of drugs that will be covered in any therapeutic class. Cost reduction initiatives and other provisions of this legislation could decrease the coverage and price that we receive for any approved products. While the Medicare Modernization Act applies only to drug benefits for Medicare beneficiaries, private payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates. Therefore, any reduction in reimbursement that results from the Medicare Modernization Act may result in a similar reduction in payments from private payors.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (the "PPACA"), which became law in 2010, contains provisions of importance to our business, including, without limitation, our ability to commercialize and the prices we may obtain for any of our product candidates and that are approved for sale, the following:

- an annual, non-deductible fee on any entity that manufactures or imports specified branded prescription drugs and biologic agents;

- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program;

- expansion of federal healthcare fraud and abuse laws, including the False Claims Act and the Anti-Kickback Statute, new government investigative powers and enhanced penalties for noncompliance;
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% point-of-sale discounts off negotiated prices;
- extension of manufacturers' Medicaid rebate liability;
- expansion of eligibility criteria for Medicaid programs;
- expansion of the entities eligible for discounts under the Public Health Service pharmaceutical pricing program new requirements to report financial arrangements with physicians and teaching hospitals;
- a new requirement to annually report drug samples that manufacturers and distributors provide to physicians; and
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research.

In addition, other legislative changes have been proposed and adopted since the PPACA was enacted. In August 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. These changes included aggregate reductions to Medicare payments to providers of up to 2% per fiscal year, which went into effect in April 2013 and will remain in effect through 2029 unless additional Congressional action is taken. The American Taxpayer Relief Act of 2012, among other things, reduced Medicare payments to several providers and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. These new laws may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any of our product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used.

Since enactment of the PPACA, there have been, and continue to be, numerous legal challenges and Congressional actions to repeal and replace provisions of the law. For example, with enactment of the Tax Cuts and Jobs Act of 2017 (the "TCJA"), Congress repealed the "individual mandate." The repeal of this provision, which requires most Americans to carry a minimal level of health insurance, became effective in 2019. Additionally, the 2020 federal spending package permanently eliminated, effective January 1, 2020, the PPACA-mandated "Cadillac" tax on high-cost employer-sponsored health coverage and medical device tax and, effective January 1, 2021, also eliminates the health insurer tax. Further, the Bipartisan Budget Act of 2018, among other things, amended the PPACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the "donut hole." Congress may consider other legislation to replace elements of the PPACA during the next Congressional session.

Further, each chamber of Congress has put forth multiple bills designed to repeal or repeal and replace portions of the PPACA. Although none of these measures has been enacted by Congress to date, Congress may consider other legislation to repeal and replace elements of the PPACA. Congress will likely consider other legislation to replace elements of the PPACA, during the next Congressional session. It is possible that repeal and replacement initiatives, if enacted into law, could ultimately result in fewer individuals having health insurance coverage or in individuals having insurance coverage with less generous benefits. While the timing and scope of any potential future legislation to repeal and replace PPACA provisions is highly uncertain in many respects, it is also possible that some of the PPACA provisions that generally are not favorable for the research-based pharmaceutical industry could also be repealed along with PPACA coverage expansion provision.

We expect that these healthcare reforms, as well as other healthcare reform measures that may be adopted in the future, may result in additional reductions in Medicare and other healthcare funding, more rigorous coverage criteria, new payment methodologies and additional downward pressure on the price that we receive for any approved product and/or the level of reimbursement physicians receive for administering any approved product we might bring to market. Reductions in reimbursement levels may negatively impact the prices we receive or the frequency with which our potential products are prescribed or administered. Any reduction in reimbursement from Medicare or other government programs may result in a similar reduction in payments from private payors.

The current presidential administration has also taken executive actions to undermine or delay implementation of the PPACA. Since January 2017, the president has signed two executive orders designed to delay the implementation of certain provisions of the PPACA or otherwise circumvent some of the requirements for health insurance mandated by the PPACA. One executive order directs federal agencies with authorities and responsibilities under the PPACA to waive, defer, grant exemptions from, or delay the implementation of any provision of the PPACA that would impose a fiscal or regulatory burden on states, individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices. The second executive order terminates the cost-sharing subsidies that reimburse insurers under the PPACA. Several state Attorneys General filed suit to stop the administration from terminating the subsidies, but their request for a restraining order was denied by a federal judge in California on October 25, 2017. In addition, CMS has recently proposed regulations that would give states greater flexibility in setting benchmarks for insurers in the individual and small group marketplaces, which may have the effect of relaxing the essential health benefits required under the ACA for plans sold through such marketplaces. Further, on June 14, 2018, U.S. Court of Appeals for the Federal Circuit ruled that the federal government was not required to pay more than $12 billion in PPACA risk corridor payments to third-party payors who argued were owed to them. This decision is under review by the U.S. Supreme Court during its current term. The full effects of this gap in reimbursement on third-party payors, the viability of the PPACA marketplace, providers, and potentially our business, are not yet known.

The costs of prescription pharmaceuticals has also been the subject of considerable discussion in the United States, and members of Congress and the executive branch have stated that they will address such costs through new legislative and administrative measures. To date, there have been several recent U.S. congressional inquiries and proposed and enacted state and federal legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, reduce the costs of drugs under Medicare and reform government program reimbursement methodologies for drug products. At the federal level, the current presidential administration has pressed for drug price control measures that could be enacted during the 2019 budget process or in other future legislation, including, for example, measures to permit Medicare Part D plans to negotiate the price of certain drugs under Medicare Part B, to allow some states to negotiate drug prices under Medicaid, and to eliminate cost sharing for generic drugs for low-income patients. While any proposed measures will require authorization through additional legislation to become effective, Congress and the current presidential administration have each indicated that it will continue to seek new legislative and/or administrative measures to control drug costs. In addition, on December 23, 2019, the Trump Administration published a proposed rulemaking that, if finalized, would allow states or certain other non-federal government entities to submit importation program proposals to the FDA for review and approval. Applicants would be required to demonstrate their importation plans pose no additional risk to public health and safety and will result in significant cost savings for consumers. At the same time, the FDA issued draft guidance that would allow manufacturers to import their own FDA-approved drugs that are authorized for sale in other countries (multi-market approved products).

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

Fast track designation by the FDA may not actually lead to a faster development or regulatory review or approval process, and does not assure FDA approval of our product candidates.

If a product candidate is intended for the treatment of a serious or life threatening condition and the product candidate demonstrates the potential to address unmet medical need for this condition, the sponsor may apply for FDA fast track designation. However, a fast track designation does not ensure that the product candidate will receive marketing approval or that approval will be granted within any particular timeframe. As a result, while we may seek and receive fast track designation for our product candidates, we may not experience a faster development process, review or approval compared to conventional FDA procedures. In addition, the FDA may withdraw fast track designation if it believes that the designation is no longer supported by data from our clinical development program. Fast track designation alone does not guarantee qualification for the FDA's priority review procedures.

Priority review designation by the FDA may not lead to a faster regulatory review or approval process and, in any event, does not assure FDA approval of our product candidates.

If the FDA determines that a product candidate offers major advances in treatment or provides a treatment where no adequate therapy exists, the FDA may designate the product candidate for priority review. A priority review designation means that the goal for the FDA to review an application is six months, rather than the standard review period of ten months. We may request priority review for certain of our product candidates. The FDA has broad discretion with respect to whether or not to grant priority review status to a product candidate, so even if we believe a particular product candidate is eligible for such designation or status, the FDA may decide not to grant it. Moreover, a priority review designation does not necessarily mean a faster regulatory review process or necessarily confer any advantage with respect to approval compared to conventional FDA procedures. Receiving priority review from the FDA does not guarantee approval within the six-month review cycle or thereafter.

We may not be able to obtain orphan drug exclusivity for one or more of our product candidates, and even if we do, that exclusivity may not prevent the FDA or the EMA from approving other competing products.

Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug or biologic intended to treat a rare disease or condition. A similar regulatory scheme governs approval of orphan products by the EMA in the European Union. Generally, if a product candidate with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA or the EMA from approving another marketing application for the same product for the same therapeutic indication for that time period. The applicable period is seven years in the United States and ten years in the European Union. The exclusivity period in the European Union can be reduced to six years if a product no longer meets the criteria for orphan drug designation, in particular if the product is sufficiently profitable so that market exclusivity is no longer justified.

In order for the FDA to grant orphan drug exclusivity to one of our products, the agency must find that the product is indicated for the treatment of a condition or disease with a patient population of fewer than 200,000 individuals annually in the United States. The FDA may conclude that the condition or disease for which we seek orphan drug exclusivity does not meet this standard. Even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different products can be approved for the same condition. In particular, the concept of what constitutes the "same drug" for purposes of orphan drug exclusivity remains in flux in the context of gene therapies, and the FDA has issued recent draft guidance suggesting that it would not consider two gene therapy products to be different drugs solely based on minor differences in the transgenes or vectors. In addition, even after an orphan drug is approved, the FDA can subsequently approve the same product for the same condition if the FDA concludes that the later product is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care. Orphan drug exclusivity may also be lost if the FDA or EMA determines that the request for designation was materially defective or if the manufacturer is unable to assure sufficient quantity of the product to meet the needs of the patients with the rare disease or condition.

On August 3, 2017, Congress passed the FDA Reauthorization Act of 2017 ("FDARA"). FDARA, among other things, codified the FDA's pre-existing regulatory interpretation, to require that a drug sponsor demonstrate the clinical

superiority of an orphan drug that is otherwise the same as a previously approved drug for the same rare disease in order to receive orphan drug exclusivity. The new legislation reverses prior precedent holding that the Orphan Drug Act unambiguously requires that the FDA recognize the orphan exclusivity period regardless of a showing of clinical superiority. The FDA may further reevaluate the Orphan Drug Act and its regulations and policies. We do not know if, when, or how the FDA may change the orphan drug regulations and policies in the future, and it is uncertain how any changes might affect our business. Depending on what changes the FDA may make to its orphan drug regulations and policies, our business could be adversely impacted.

Our employees, principal investigators, consultants, and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, consultants, and partners, and, if we commence clinical trials, our principal investigators. Misconduct by these parties could include intentional failures to comply with FDA regulations or the regulations applicable in the European Union and other jurisdictions, provide accurate information to the FDA, the European Commission, and other regulatory authorities, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately, or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Such misconduct also could involve the improper use of information obtained in the course of clinical trials or interactions with the FDA or other regulatory authorities, which could result in regulatory sanctions and cause serious harm to our reputation. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from government investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, financial condition, results of operations, and prospects, including the imposition of significant fines or other sanctions.

Laws and regulations governing any international operations we may have in the future may preclude us from developing, manufacturing and selling certain product candidates outside of the United States and require us to develop and implement costly compliance programs.

We are subject to numerous laws and regulations in each jurisdiction outside the United States in which we operate. The creation, implementation and maintenance of international business practices compliance programs is costly and such programs are difficult to enforce, particularly where reliance on third parties is required.

The Foreign Corrupt Practices Act (“FCPA”) prohibits any U.S. individual or business from paying, offering, authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations. The anti-bribery provisions of the FCPA are enforced primarily by the Department of Justice. The SEC is involved with enforcement of the books and records provisions of the FCPA.

Compliance with the FCPA is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals are operated by the government, and doctors and other hospital employees are considered foreign officials. Certain payments to hospitals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. Our expansion outside of the United States has required, and will continue to require, us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain drugs and drug candidates outside of the United States, which could limit our growth potential and increase our development costs. The failure to comply with laws governing international business practices may result in substantial penalties, including suspension or debarment from government contracting. Violation of the FCPA can result in significant civil and criminal penalties. Indictment alone under the FCPA can lead to suspension of the right to do business with the U.S. government until the pending claims are resolved. Conviction of a violation of the FCPA can result in long-term disqualification as a government contractor. The termination of a government contract or relationship as a result of our failure to satisfy any of our obligations under laws governing international business practices would have a negative impact on our operations and harm our reputation and ability to procure government contracts. The SEC also may suspend or bar issuers from trading securities on U.S. exchanges for violations of the FCPA's accounting provisions.

Risks Related to Employee Matters, Managing Growth and Information Technology

Our future success depends on our ability to attract and retain key executives and to attract, retain, and motivate qualified personnel.

We are highly dependent on the principal members of our management and scientific teams. Each of these individuals is employed "at will," meaning we or the individual may terminate the employment relationship at any time. We do not maintain "key person" insurance for any of our executives or other employees. The loss of the services of any of these persons could impede the achievement of our research, development, and commercialization objectives.

Recruiting and retaining qualified scientific, clinical, manufacturing, and sales and marketing personnel will also be critical to our success. We may not be able to attract and retain these personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for similar personnel. We also experience competition for the hiring of scientific and clinical personnel from universities and research institutions. In addition, we rely on consultants and advisors, including scientific and clinical advisors, to assist us in formulating our research and development and commercialization strategy. Our consultants and advisors may be employed by employers other than us and may have commitments under consulting or advisory contracts with other entities that may limit their availability to us. The inability to recruit or loss of services of certain executives, other key employees, consultants, or advisors may impede the progress of our research, development, and commercialization objectives and have a material adverse effect on our business, financial condition, results of operations, and prospects.

We have expanded and expect to further expand our development, regulatory, clinical, manufacturing and future sales and marketing capabilities, and as a result, we may encounter difficulties in managing our growth, which could disrupt our operations.

We expect to experience significant growth in the number of our employees and the scope of our operations, particularly in the areas of drug development, regulatory affairs, clinical development, manufacturing, and sales and marketing. For example, our total number of employees grew from 132 as of January 1, 2019 to 208 as of February 1, 2020. To manage our anticipated future growth, we must continue to implement and improve our managerial, operational, and financial systems, expand our facilities, and continue to recruit and train additional qualified personnel. Due to our limited financial resources and the limited experience of our management team in managing a company with such anticipated growth, we may not be able to effectively manage the expected expansion of our operations or recruit and train additional qualified personnel. Moreover, the expected physical expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

Security breaches and other disruptions to our information technology structure could compromise our information, disrupt our business and expose us to liability, which would cause our business and reputation to suffer.

In the ordinary course of our business, we collect, process and store sensitive data, including intellectual property, as well as our proprietary business information and that of our suppliers and business partners, employee data, and we may collect personally identifiable information of clinical trial participants in connection with clinical trials. We also rely to a large extent on information technology systems to operate our business, including our financial systems. We have outsourced elements of our confidential information processing and information technology structure, and as a result, we are managing independent vendor relationships with third parties who may or could have access to our confidential information. Similarly, our business partners and other third-party providers possess certain of our sensitive data. The secure maintenance of this information is important to our operations and business strategy. Despite our security measures, our information technology infrastructure (and those of our partners, vendors and third-party providers) may be vulnerable to attacks by hackers or breached due to employee error, malfeasance or other disruptions. We, our partners, vendors, and other third-party providers could be susceptible to third party attacks on our, and their, information security systems, which attacks are of ever-increasing levels of sophistication and are made by groups and individuals with a wide range of motives and expertise, including organized criminal groups, hacktivists, nation states and others. While we have invested in information technology security measures and the protection of confidential information, there can be no assurance that our efforts will prevent service interruptions or security breaches. Any such interruptions or breach may substantially impair our ability to operate our business and would compromise our, and their, networks and the information stored could be accessed, publicly disclosed, lost, or stolen. Any such access, disclosure, or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, disrupt our operations, and damage our reputation, any of which could adversely affect our business.

Risks Related to Our Common Stock

An active trading market for our common stock may not be sustained.

Our shares of common stock began trading on The Nasdaq Global Select Market in February 2016. Given the limited trading history of our common stock, there is a risk that an active trading market for our shares will not be sustained, which could put downward pressure on the market price of our common stock and thereby affect the ability of our stockholders to sell their shares.

The market price of our common stock may be volatile, which could result in substantial losses for our stockholders.

Our stock price has been, and is likely to remain, volatile. Some of the factors that may cause the market price of our common stock to fluctuate include:

- the success of existing or new competitive products or technologies;
- the timing and results of clinical trials for EDIT-101 and any preclinical studies and clinical trials of any other product candidates that we develop;
- commencement or termination of collaborations for our product development and research programs;
- failure or discontinuation of any of our product development and research programs;
- results of preclinical studies, clinical trials, or regulatory approvals of product candidates of our competitors, or announcements about new research programs or product candidates of our competitors;
- developments or changing views regarding the use of genomic medicines, including those that involve genome editing;

- regulatory or legal developments in the United States and other countries;
- developments or disputes concerning patent applications, issued patents, or other proprietary rights;
- the recruitment or departure of key personnel;
- the level of expenses related to any of our research programs, clinical development programs, or product candidates that we develop;
- the results of our efforts to develop additional product candidates or products;
- actual or anticipated changes in estimates as to financial results, development timelines, or recommendations by securities analysts;
- announcement or expectation of additional financing efforts;
- sales of our common stock by us, our insiders, or other stockholders;
- variations in our financial results or those of companies that are perceived to be similar to us;
- changes in estimates or recommendations by securities analysts, if any, that cover our stock;
- changes in the structure of healthcare payment systems;
- market conditions in the pharmaceutical and biotechnology sectors;
- general economic, industry, and market conditions; and
- the other factors described in this “Risk Factors” section.

In recent years, the stock market in general, and the market for pharmaceutical and biotechnology companies in particular, has experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to changes in the operating performance of the companies whose stock is experiencing those price and volume fluctuations. Broad market and industry factors may seriously affect the market price of our common stock, regardless of our actual operating performance. Following periods of such volatility in the market price of a company’s securities, securities class action litigation has often been brought against that company. Because of the potential volatility of our stock price, we may become the target of securities litigation in the future. Securities litigation could result in substantial costs and divert management’s attention and resources from our business.

If securities analysts do not publish research or reports about our business or if they publish negative evaluations of our stock, the price of our stock and trading volume could decline.

The trading market for our common stock depends, in part, on the research and reports that industry or financial analysts publish about us or our business. If one or more of the analysts covering our business downgrade their evaluations of our stock, the price of our stock could decline. If one or more of these analysts cease to cover our stock or fail to regularly publish reports on us, we could lose visibility in the market for our stock, which in turn could cause our stock price to decline.

A portion of our total outstanding shares may be sold into the market in the near future, which could cause the market price of our common stock to decline significantly, even if our business is doing well.

Sales of a significant number of shares of our common stock in the public market could occur at any time. These sales, or the perception in the market that the holders of a large number of shares of common stock intend to sell

shares, could reduce the market price of our common stock.

We have registered substantially all shares of common stock that we may issue under our equity compensation plans. These shares can be freely sold in the public market upon issuance and once vested, subject to volume limitations applicable to affiliates. If any of these additional shares are sold, or if it is perceived that they will be sold, in the public market, the market price of our common stock could decline.

In addition, certain of our employees, executive officers, directors, and affiliated stockholders have entered or may enter into Rule 10b5-1 plans providing for sales of shares of our common stock from time to time. Under a Rule 10b5-1 plan, a broker executes trades pursuant to parameters established by the participant establishing the plan when entering into the plan, without further direction from such participant. A Rule 10b5-1 plan may be amended or terminated in some circumstances. Our employees, executive officers, directors, and affiliated stockholders also may buy or sell additional shares outside of a Rule 10b5-1 plan when they are not in possession of material, nonpublic information.

We incur increased costs as a result of operating as a public company, and our management is required to devote substantial time to new compliance initiatives and corporate governance practices.

As a public company we have incurred, and will continue to incur, significant legal, accounting, and other expenses that we did not incur as a private company. The Sarbanes-Oxley Act of 2002, the Dodd-Frank Wall Street Reform and Consumer Protection Act, the listing requirements of The Nasdaq Global Select Market, and other applicable securities rules and regulations impose various requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. We have had to hire additional accounting, finance, and other personnel in connection with our becoming, and our efforts to comply with the requirements of being, a public company, and our management and other personnel devote a substantial amount of time towards maintaining compliance with these requirements. These requirements increase our legal and financial compliance costs and make some activities more time-consuming and costly. These rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

Pursuant to SOX Section 404, we are required to furnish a report by our management on our internal control over financial reporting and are required to include an attestation report on internal control over financial reporting issued by our independent registered public accounting firm. To maintain compliance with SOX Section 404, we will continue to document and evaluate our internal control over financial reporting, which is both costly and challenging. In this regard, we will need to dedicate internal resources, engage outside consultants, adopt a detailed work plan to assess and document the adequacy of internal control over financial reporting, continue steps to improve control processes as appropriate, validate through testing that controls are functioning as documented, and implement a continuous reporting and improvement process for internal control over financial reporting. Despite our efforts, there is a risk that neither we nor our independent registered public accounting firm will be able to conclude, within the prescribed timeframe or at all, that our internal control over financial reporting is effective as required by SOX Section 404. If we identify one or more material weaknesses, it could result in an adverse reaction in the financial markets due to a loss of confidence in the reliability of our consolidated financial statements.

We have broad discretion in the use of our cash reserves and may not use them effectively.

Our management has broad discretion to use our cash reserves and could use our cash reserves in ways that do not improve our results of operations or enhance the value of our common stock. The failure by our management to apply these funds effectively could result in financial losses that could have a material adverse effect on our business, cause the price of our common stock to decline, and delay the development of our product candidates. Pending their use, we may invest our cash reserves in a manner that does not produce income or that loses value.

We do not expect to pay any dividends for the foreseeable future. Accordingly, stockholders must rely on capital appreciation, if any, for any return on their investments.

We have never declared or paid cash dividends on our common stock. We currently intend to retain all of our future earnings, if any, to finance the growth and development of our business. In addition, the terms of any future debt agreements may preclude us from paying dividends. As a result, capital appreciation, if any, of our common stock will be stockholders' sole source of gain for the foreseeable future.

Provisions in our restated certificate of incorporation and amended and restated bylaws or Delaware law might discourage, delay, or prevent a change in control of our company or changes in our management and, therefore, depress the trading price of our common stock.

Provisions in our restated certificate of incorporation and amended and restated bylaws or Delaware law may discourage, delay, or prevent a merger, acquisition, or other change in control that stockholders may consider favorable, including transactions in which you might otherwise receive a premium for your shares of our common stock. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management. These provisions include:

- limitations on the removal of directors;
- a classified board of directors so that not all members of our board of directors are elected at one time;
- advance notice requirements for stockholder proposals and nominations;
- the inability of stockholders to act by written consent or to call special meetings;
- the requirement that at least 75% of the votes cast by all our stockholders approve the amendment or repeal of certain provisions of our amended and restated bylaws or restated certificate of incorporation;
- the ability of our board of directors to make, alter, or repeal our amended and restated bylaws; and
- the ability of our board of directors to designate the terms of and issue new series of preferred stock without stockholder approval, which could be used to institute a rights plan, or a poison pill, that would work to dilute the stock ownership of a potential hostile acquirer, likely preventing acquisitions that have not been approved by our board of directors.

In addition, Section 203 of the General Corporation Law of the State of Delaware prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder, generally a person which together with its affiliates owns, or within the last three years has owned, 15% of our voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner.

The existence of the foregoing provisions could deter potential acquirers of our company, thereby reducing the likelihood that our stockholders could receive a premium for their shares of common stock in an acquisition.

Our restated certificate of incorporation designates the state courts in the State of Delaware or, if no state court located within the State of Delaware has jurisdiction, the federal court for the District of Delaware, as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could discourage lawsuits against the company and our directors and officers.

Our restated certificate of incorporation provides that, unless our board of directors otherwise determines, the state courts in the State of Delaware or, if no state court located within the State of Delaware has jurisdiction, the federal court for the District of Delaware, will be the sole and exclusive forum for any derivative action or proceeding brought on our behalf, any action asserting a claim of breach of a fiduciary duty owed by any of our directors or officers to our

company or our stockholders, any action asserting a claim against us or any of our directors or officers arising pursuant to any provision of the General Corporation Law of the State of Delaware or our restated certificate of incorporation or amended and restated bylaws, or any action asserting a claim against us or any of our directors or officers governed by the internal affairs doctrine. This exclusive forum provision may limit the ability of our stockholders to bring a claim in a judicial forum that such stockholders find favorable for disputes with us or our directors or officers, which may discourage such lawsuits against us and our directors and officers. This exclusive forum provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act of 1934, which provides for exclusive jurisdiction of the federal courts. It could apply, however, to a suit that falls within one or more of the categories enumerated in the exclusive forum provision and asserts claims under the Securities Act of 1933, as amended (the "Securities Act"), inasmuch as Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. There is uncertainty as to whether a court would enforce such provision with respect to claims under the Securities Act, and our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Properties.

We lease 59,783 square feet of office and laboratory space in Cambridge, Massachusetts under a lease that expires in November 2023. We believe that our facilities are sufficient to meet our current needs and that suitable additional space will be available as and when needed.

Item 3. Legal Proceedings.

From time to time, we may become involved in litigation or other legal proceedings relating to claims arising from the ordinary course of business. There can be no assurance that any proceedings that result from these third-party actions will be resolved in our favor. In addition, if they are not resolved in our favor, there can be no assurance that the result will not have a material adverse effect on our business, financial condition, results of operations, or prospects. Certain of our intellectual property rights, including ones licensed to us under our licensing agreements, are subject to, and from time to time may be subject to, priority and validity disputes. For additional information regarding these matters, see "Item 1A. Risk Factors—Risks Related to Our Intellectual Property." Regardless of outcome, litigation or other legal proceedings can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

Item 4. Mine Safety Disclosures.

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Market Information

Our common stock trades on the Nasdaq Global Select Market under the symbol "EDIT." Trading of our common stock commenced on February 3, 2016 in connection with our initial public offering. Prior to that time, there was no established public trading market for our common stock.

Holders

As of February 14, 2020, we had approximately 12 holders of record of our common stock. This number does not include beneficial owners whose shares were held in street name.

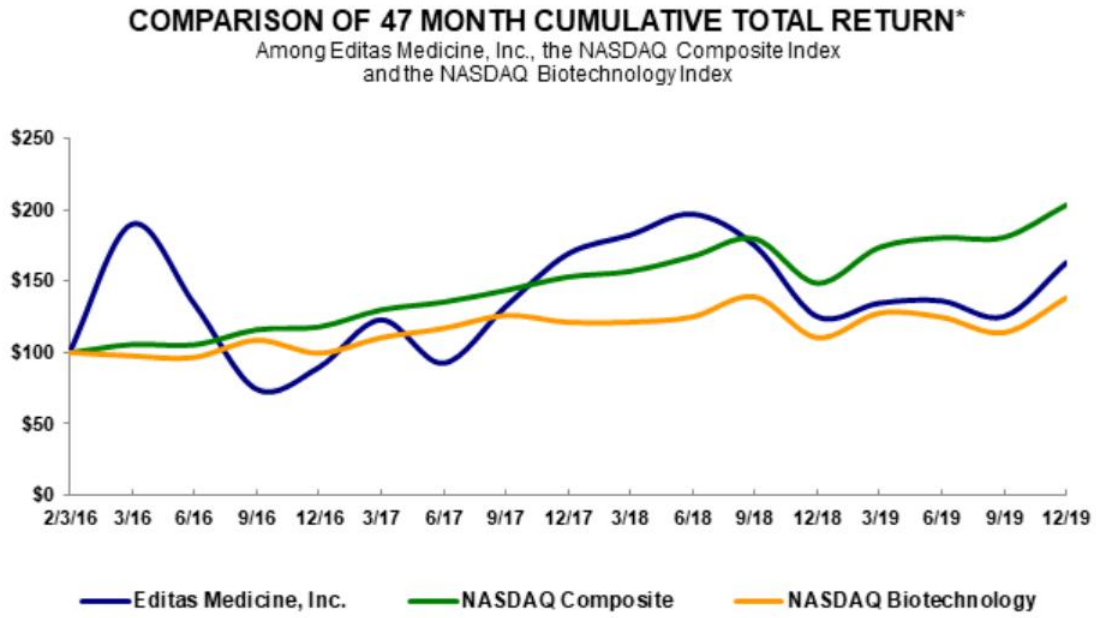
Dividend Policy

We have never declared or paid any cash dividends on our common stock. We currently intend to retain future earnings to fund the development and growth of our business. We do not expect to pay any cash dividends in the foreseeable future. In addition, the terms of any future debt agreements that we may enter into may preclude us from paying dividends without the lenders' consent or at all.

Performance Graph

The following performance graph and related information shall not be deemed to be "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liabilities under that Section, nor shall such information be incorporated by reference into any future filing under the Exchange Act or the Securities Act of 1933, as amended (the "Securities Act"), except to the extent that we specifically incorporate it by reference into such filing.

The following graph compares the performance of our common stock to The Nasdaq Composite Index and to The Nasdaq Biotechnology Index from February 3, 2016 (the first date on which shares of our common stock were publicly traded) through December 31, 2019. The comparison assumes $100 was invested after the market closed on February 3, 2016 in our common stock and in each of the foregoing indices, and it assumes reinvestment of dividends, if any. The stock price performance included in this graph is not necessarily indicative of future stock price performance.



Recent Sales of Unregistered Securities

On October 28, 2019, we granted our chief medical officer an option to purchase 150,000 shares of our common stock and a restricted stock unit award of 25,000 shares and, on January 9, 2020, we granted our chief financial officer an option to purchase 120,000 shares of our common stock and a restricted stock unit award of 20,000 shares, each as an inducement to employment in accordance with Nasdaq Listing Rule 5635(c)(4). No underwriters were involved in the foregoing issuances of securities. The securities were issued pursuant to Section 4(a)(2) under the Securities Act of 1933, as amended, relating to transactions by an issuer not involving any public offering. All recipients either received adequate information about us or had access, through other relationships, to such information.

The stock options are scheduled to become exercisable as to 25% of the shares underlying the options on the first anniversary of the date of grant, and as to an additional 2.0833% of the shares underlying the option at the end of each successive month following such date, subject to the recipient's continued service. The options granted to our chief medical officer have an exercise price of $21.61 per share, and the options granted to our chief financial officer have an exercise price of $30.65 per share. The restricted stock unit awards are scheduled to vest as to one-fourth of the shares on each anniversary of the date of grant until the fourth anniversary of the date of grant, subject to the recipient's continued service.

Purchases of Equity Securities by the Issuer and Affiliates Purchasers

Neither we nor any affiliated purchaser or anyone acting on behalf of us or an affiliated purchaser made any purchases of shares of our common stock during the fourth quarter of 2019.

Item 6. Selected Consolidated Financial Data.

You should read the following selected consolidated financial data together with our consolidated financial statements and accompanying notes appearing elsewhere in this Annual Report on Form 10-K and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this Annual Report on Form 10-K. The following selected consolidated financial data are derived from our audited consolidated financial statements. Our historical results for any prior period are not necessarily indicative of the results that may be expected in any future period. Our consolidated statements of operations are summarized as follows (in thousands, except share and per share amounts):

	Year Ended December 31,				
	2019	2018	2017	2016	2015
Consolidated Statements of Operations Data:					
Collaboration and other research and development revenues	$ 20,531	$ 31,937	$ 13,728	$ 6,053	$ 1,629
Operating expenses:					
Research and development	96,898	90,654	83,159	56,979	18,846
General and administrative	64,555	55,010	50,502	46,262	18,095
Total operating expenses	161,453	145,664	133,661	103,241	36,941
Operating loss	(140,922)	(113,727)	(119,933)	(97,188)	(35,312)
Other (expense) income, net	(137)	328	587	(57)	(37,445)
Interest income (expense), net	7,313	3,445	(978)	62	(143)
Total other income (expense), net	7,176	3,773	(391)	5	(37,588)
Net loss	$ (133,746)	$ (109,954)	$ (120,324)	$ (97,183)	$ (72,900)
Reconciliation of net loss to net loss attributable to common stockholders:					
Net loss	$ (133,746)	$ (109,954)	$ (120,324)	$ (97,183)	$ (72,900)
Accretion of redeemable convertible preferred stock to redemption value	—	—	—	(47)	(394)
Net loss attributable to common stockholders [1]	$ (133,746)	$ (109,954)	$ (120,324)	$ (97,230)	$ (73,294)
Net loss per share attributable to common stockholders, basic and diluted [1]	$ (2.68)	$ (2.33)	$ (2.98)	$ (3.02)	$ (28.55)
Weighted-average common shares outstanding, basic and diluted [1]	49,983,329	47,097,735	40,323,631	32,219,717	2,566,916

(1) See Note 15 to our consolidated financial statements for further details on the calculation of net loss per share, basic and diluted, attributable to common stockholders and the weighted-average number of shares used in the computation of the per share amounts.

Our consolidated balance sheets are summarized as follows (in thousands, except share and per share amounts):

	December 31,				
	2019	2018	2017	2016	2015
Consolidated Balance Sheet Data:					
Cash, cash equivalents and marketable securities	$ 457,140	$ 368,955	$ 329,139	$ 185,323	$ 143,180
Working capital	403,881	338,876	295,492	154,100	138,060
Total assets	508,885	420,386	373,260	229,182	149,363
Deferred revenue, net of current portion	163,207	115,614	94,725	26,000	25,321
Construction financing lease obligation, net of current portion	—	32,417	33,431	35,096	—
Redeemable convertible preferred stock	—	—	—	—	199,915
Total stockholders' equity (deficit)	262,437	236,162	208,080	134,607	(83,114)

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

The following discussion and analysis of our financial condition and results of operations should be read together with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K.

Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K contains forward-looking statements that involve substantial risks and uncertainties. The words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. There are a number of important risks and uncertainties that could cause our actual results to differ materially from those indicated by forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. We have included important factors in the cautionary statements included in this Annual Report on Form 10-K, particularly in the section entitled "Risk Factors" in Part I, Item 1A that could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures or investments that we may make.

You should read this Annual Report on Form 10-K and the documents that we have filed as exhibits to this Annual Report on Form 10-K completely and with the understanding that our actual future results may be materially different from what we expect. The forward-looking statements contained in this Annual Report on Form 10-K are made as of the date of this Annual Report on Form 10-K,and we do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

Overview

We are a leading, clinical stage genome editing company dedicated to developing potentially transformative genomic medicines to treat a broad range of serious diseases. We have developed a proprietary genome editing platform based on CRISPR technology and we continue to expand its capabilities. Our product development strategy is to target diseases of high unmet need where we aim to make differentiated, transformational medicines using our gene editing platform. We are advancing both *in vivo* CRISPR medicines, in which the medicine is injected or infused into the patient to edit the cells inside their body, and engineered cell medicines, in which cells are edited with our technology and then administered to the patient. While our discovery efforts have ranged across several diseases and therapeutic areas, the two areas where our programs are more mature are ocular diseases and engineered cell medicines to treat hemoglobinopathies and cancer.

In ocular diseases, our most advanced program is designed to address a specific genetic form of retinal degeneration called Leber congenital amaurosis 10 ("LCA10"), a disease for which we are not aware of any available therapies and only one other potential treatment in clinical trials in the United States and Europe. In mid-2019, we initiated a Phase 1/2 clinical trial for EDIT-101 (also known as AGN-151587), an experimental medicine to treat LCA10, pursuant to an investigational new drug application ("IND") that we filed in October 2018 and which was accepted by the United States Food and Drug Administration ("FDA") in November 2018. We and our partner Allergan Pharmaceuticals International Limited (together with its affiliates, "Allergan") have begun patient screening and expect to announce patient dosing by the end of the first quarter of 2020. We plan to enroll approximately 18 patients in the United States and Europe.

In May 2015, we entered into a collaboration with Juno Therapeutics, Inc., a wholly-owned subsidiary of Bristol-Myers Squibb Company ("Juno Therapeutics"), a leader in the emerging field of immuno-oncology, to develop novel engineered alpha-beta T cell therapies for cancer and autoimmune diseases, which was amended and restated in each of May 2018 and November 2019, at which time we also entered into a related license agreement with Juno Therapeutics, which we collectively refer to as our collaboration with them. In March 2017, we entered into a strategic alliance and option agreement with Allergan a leading global pharmaceutical company, to discover, develop, and

commercialize new gene editing medicines for a range of ocular disorders. In July 2018, Allergan exercised its option to develop and commercialize EDIT-101 and paid us $15.0 million in connection with such exercise (the "EDIT-101 Option Exercise Payment"). We and Allergan subsequently entered into a co-development and commercialization agreement under which we will co-develop and equally split profits and losses for EDIT-101 in the United States. In December 2018, we also received a $25.0 million payment from Allergan in connection with the acceptance of the IND for EDIT-101 (the "EDIT-101 Milestone Payment").

Since our inception in September 2013, our operations have focused on organizing and staffing our company, business planning, raising capital, establishing our intellectual property portfolio, assembling our core capabilities in genome editing, seeking to identify potential product candidates, and undertaking preclinical studies. Except for EDIT-101, all of our research programs are still in the preclinical or research stage of development and the risk of failure of all of our research programs is high. We have not generated any revenue from product sales. We have funded our operations primarily through the initial public offering of our common stock, follow-on public offerings of our common stock including through at-the-market offerings, private placements of our preferred stock, payments received under our collaboration with Juno Therapeutics and payments received under our strategic alliance and co-development and commercialization agreements with Allergan. From inception through December 31, 2019, we raised an aggregate of $870.8 million to fund our operations.

Since inception, we have incurred significant operating losses. Our net losses were $133.7 million, $110.0 million and $120.3 million for the years ended December 31, 2019, 2018 and 2017, respectively. As of December 31, 2019, we had an accumulated deficit of $549.2 million. We expect to continue to incur significant expenses and operating losses for the foreseeable future. Our net losses may fluctuate significantly from quarter to quarter and from year to year. We anticipate that our expenses will increase substantially as we continue our current research programs and our preclinical development activities; progress the clinical development of EDIT-101 with Allergan; seek to identify additional research programs and additional product candidates; initiate preclinical testing and clinical trials for other product candidates we identify and develop; maintain, expand, and protect our intellectual property portfolio, including reimbursing our licensors for such expenses related to the intellectual property that we in-license from such licensors; further develop our genome editing platform; hire additional clinical, quality control, and scientific personnel; and incur additional costs associated with operating as a public company. We do not expect to be profitable for the year ending December 31, 2020 or the foreseeable future.

Financial Operations Overview

Revenue

To date, we have not generated any revenue from product sales and we do not expect to generate any revenue from product sales for the foreseeable future. In connection with entering into our collaboration with Juno Therapeutics in May 2015, we received an upfront payment of $25.0 million, and in each of May 2016 and July 2017, we received a milestone payment of $2.5 million. In May 2018, in connection with the amendment and restatement of our collaboration agreement with Juno Therapeutics to expand our collaboration to add an additional research program, we received $5.0 million for amending the agreement and two $2.5 million milestone payments for technical progress in a research program. In November 2019, we further amended and restated our collaboration with Juno Therapeutics. Pursuant to the amended and restated collaboration, we received a $70.0 million payment from Juno Therapeutics and will no longer receive research support under such collaboration. Through December 31, 2019 and prior to amending and restating our collaboration in November 2019, we had recognized an aggregate of $23.9 million of research support from Juno Therapeutics since entering into the collaboration. During the year ended December 31, 2019, we recognized $6.2 million of research support from Juno Therapeutics. As of December 31, 2019, we recorded $96.3 million of deferred revenue, all of which is classified as long-term on our consolidated balance sheet, related to the collaboration.

In connection with entering into our strategic alliance with Allergan in March 2017, we received an upfront payment of $90.0 million from Allergan (such payment, the "Allergan Upfront"). In addition, we received $15.0 million related to the EDIT-101 Option Exercise Payment in July 2018 and $25.0 million related to the EDIT-101 Milestone Payment in December 2018. Through December 31, 2019, we had recognized an aggregate of $44.4 million in revenue related to our strategic alliance with Allergan, which includes all of the EDIT-101 Option Exercise Payment and a

portion of the EDIT-101 Milestone Payment. For the year ended December 31, 2019, we recognized $13.6 million in revenue in connection with the Allergan Upfront, which includes a portion of the EDIT-101 Milestone Payment. As of December 31, 2019, we recorded $85.6 million of deferred revenue, of which $63.8 million is classified as long-term on the consolidated balance sheet. For additional information about our revenue recognition policy related to the Juno Therapeutics collaboration or the Allergan alliance, see "—Critical Accounting Policies and Estimates—Revenue Recognition."

For the foreseeable future, we expect substantially all of our revenue will be generated from our collaboration with Juno Therapeutics, our strategic alliance with Allergan, any other collaborations or agreements we may enter into and anticipated interest income.

Expenses

Research and Development Expenses

Research and development expenses consist primarily of costs incurred for our research and development activities, including our drug discovery efforts and preclinical studies under our research programs, which include:

- employee-related expenses including salaries, benefits, and stock-based compensation expense;
- costs of funding research performed by third parties that conduct research and development and preclinical activities on our behalf;
- costs of purchasing lab supplies and non-capital equipment used in our preclinical activities and in manufacturing preclinical study materials;
- consultant fees;
- facility costs including rent, depreciation, and maintenance expenses; and
- fees for acquiring and maintaining licenses under our third-party licensing agreements, including any sublicensing or success payments made to our licensors.

Research and development costs are expensed as incurred. At this time, we cannot reasonably estimate or know the nature, timing, and estimated costs of the efforts that will be necessary to complete the development of any product candidates we may identify and develop. This is due to the numerous risks and uncertainties associated with developing such product candidates, including the uncertainty of:

- successful completion of preclinical studies, IND-enabling studies and natural history studies;
- successful enrollment in, and completion of, clinical trials;
- receipt of marketing approvals from applicable regulatory authorities;
- establishing commercial manufacturing capabilities or making arrangements with third-party manufacturers;
- obtaining and maintaining patent and trade secret protection and non-patent exclusivity;
- launching commercial sales of a product, if and when approved, whether alone or in collaboration with others;
- acceptance of a product, if and when approved, by patients, the medical community, and third-party payors;

- effectively competing with other therapies and treatment options;
- a continued acceptable safety profile following approval;
- enforcing and defending intellectual property and proprietary rights and claims; and
- achieving desirable medicinal properties for the intended indications.

A change in the outcome of any of these variables with respect to the development of any product candidates we develop would significantly change the costs, timing, and viability associated with the development of that product candidate. As a result of Allergan's exercise of its option to license EDIT-101 and our entry into a profit-sharing arrangement with Allergan in the United States for EDIT-101, our obligations to fund such program in the United States will represent 50% of the total costs related to developing and commercializing the program in the United States.

We do not track research and development costs on a program-by-program basis except for reimbursable amounts that relate to third-party arrangements.

Research and development activities are central to our business model. We expect research and development costs to increase significantly for the foreseeable future as our development programs progress, including as we continue to progress the clinical development of EDIT-101 with Allergan as well as supporting preclinical studies for our other research programs.

General and Administrative Expenses

General and administrative expenses consist primarily of salaries and other related costs, including stock-based compensation for personnel in executive, finance, investor relations, business development, legal, corporate affairs, information technology, facilities and human resource functions. Other significant costs include corporate facility costs not otherwise included in research and development expenses, legal fees related to intellectual property and corporate matters, and fees for accounting and consulting services.

We anticipate that our general and administrative expenses will increase in the future to support continued research and development activities and potential commercialization of any product candidates we identify and develop. These increases will include increased costs related to the hiring of additional personnel and fees to outside consultants. We also anticipate increased expenses related to reimbursement of third-party patent-related expenses and expenses associated with operating as a public company, including costs for audit, legal, regulatory, and tax-related services, director and officer insurance premiums, and investor relations costs. With respect to reimbursement of third-party intellectual property-related expenses specifically, given the ongoing nature of the opposition and interference proceedings involving the patents licensed to us under our license agreement with The Broad Institute, Inc. ("Broad") and the President and Fellows of Harvard College ("Harvard"), we anticipate general and administrative expenses will continue to be significant.

Other Income (Expense), Net

For the year ended December 31, 2019, other income (expense), net consisted primarily of interest income and accretion of discounts associated with marketable securities.

For the year ended December 31, 2018, other income (expense), net consisted primarily of interest income, accretion of discounts associated with marketable securities, and rental income from our former subtenant, partially offset by interest expense on our construction financing lease obligation.

For the year ended December 31, 2017, other income (expense), net consisted primarily of interest expense on our construction financing lease obligation and promissory notes, and amortization of premiums associated with

marketable securities, partially offset by rental income from our former subtenant, interest income, and accretion of discounts associated with marketable securities.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of our financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with United States generally accepted accounting principles. The preparation of our consolidated financial statements requires us to make judgments and estimates that affect the reported amounts of assets, liabilities, revenues, and expenses, and the disclosure of contingent assets and liabilities in our consolidated financial statements. We base our estimates on historical experience, known trends and events, and various other factors that we believe to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. On an ongoing basis, we evaluate our judgments and estimates in light of changes in circumstances, facts, and experience. The effects of material revisions in estimates, if any, will be reflected in the consolidated financial statements prospectively from the date of change in estimates.

While our significant accounting policies are described in more detail in the notes to our consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K, we believe the following accounting policy used in the preparation of our consolidated financial statements requires the most significant judgments and estimates.

Revenue Recognition

We recognize revenue in accordance with Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC"), Topic 606, *Revenue Recognition* ("ASC 606"). Accordingly, we recognize revenue following the five step model prescribed under Accounting Standards Updates No. 2014-09, *Revenue from Contracts with Customers*: (i) identify contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenues when (or as) we satisfy the performance obligation. We only apply the five-step model to contracts when it is probable that we will collect the consideration we are entitled to in exchange for the goods or services we transfer to the customer. At contract inception, once the contract is determined to be within the scope of ASC 606, we assess the goods or services promised within each contract and determine those that are performance obligations, and whether each promised good or service is distinct. We then recognize as revenue the amount of the transaction price that is allocated to the respective performance obligation when (or as) the performance obligation is satisfied. As part of the accounting for these arrangements, we must develop assumptions that require judgment to determine the standalone selling price for each performance obligation identified in the contract. A significant portion of revenue recognized from our strategic alliance with Allergan is related to research services performed for each clinical development program whereby revenue is recognized as the underlying services are performed using a proportional performance model. We measure proportional performance based on full time employee hours incurred relative to projected full time employee hours to complete the research services for each clinical development program. We evaluate the measure of progress each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

Amounts received prior to satisfying the revenue recognition criteria are recorded as deferred revenue in our consolidated balance sheets.

Results of Operations

Comparison of Years ended December 31, 2019 and 2018

The following table summarizes our results of operations for the years ended December 31, 2019 and 2018, together with the changes in those items in dollars (in thousands) and the respective percentages of change:

	Year Ended December 31,			
	2019	2018	Dollar Change	Percentage Change
Collaboration and other research and development revenues	$ 20,531	$ 31,937	$ (11,406)	(36)%
Operating expenses:				
Research and development	96,898	90,654	6,244	7 %
General and administrative	64,555	55,010	9,545	17 %
Total operating expenses	161,453	145,664	15,789	11 %
Other income (expense), net				
Other (expense) income, net	(137)	328	(465)	n/m
Interest income, net	7,313	3,445	3,868	n/m
Total other income, net	7,176	3,773	3,403	90 %
Net loss	$ (133,746)	$ (109,954)	$ (23,792)	(22)%

For our results of operations, we have included the respective percentage of changes, unless greater than 100% or less than (100)%, in which case we have denoted such changes as not meaningful (n/m).

Collaboration and Other Research and Development Revenues

Collaboration and other research and development revenues decreased by $11.4 million, to $20.5 million for the year ended December 31, 2019 from $31.9 million for the year ended December 31, 2018. This decrease was primarily attributable to a $7.9 million decrease in revenue recognized pursuant to our strategic alliance with Allergan, $3.9 million in revenue recognized during the second quarter of 2018 related to a one time upfront payment in connection with an out-license arrangement and a $0.2 million decrease in revenue recognized pursuant to our collaboration with Juno Therapeutics.

Research and Development Expenses

Research and development expenses increased by $6.2 million, to $96.9 million for the year ended December 31, 2019 from $90.7 million for the year ended December 31, 2018. The following table summarizes our research and development expenses for the years ended December 31, 2019 and December 31, 2018, together with the changes in those items in dollars (in thousands) and the respective percentages of change:

	Year Ended December 31,			
	2019	2018	Dollar Change	Percentage Change
Process and platform development expenses	$ 33,242	$ 25,466	$ 7,776	31 %
Employee related expenses	24,249	19,771	4,478	23 %
Stock-based compensation expenses	13,538	14,734	(1,196)	(8)%
Licensing and sublicensing payment expenses	11,731	8,707	3,024	35 %
Facility expenses	9,131	6,058	3,073	51 %
Other expenses	5,007	3,418	1,589	46 %
Success payment expenses	—	12,500	(12,500)	n/m
Total research and development expenses	$ 96,898	$ 90,654	$ 6,244	7 %

The increase in research and development expenses for the year ended December 31, 2019 compared to the year ended December 31, 2018 was primarily attributable to:

- approximately $7.8 million in increased process and platform development expenses due to increased research activity, mostly relating to external research and development costs that we expect will increase further as we continue to progress the clinical development of EDIT-101;
- approximately $4.5 million in increased employee related expenses due to an increase in the size of our workforce;
- approximately $4.7 million in increased facility and other related expenses due to increased office and professional service expenses; and
- approximately $3.0 million in increased licensing and sublicensing payment expenses, primarily due to sublicense expense recorded during the fourth quarter of 2019 in connection with receiving $70.0 million related to our amended and restated collaboration agreement with Juno Therapeutics, partially offset by sublicense fees owed to certain of our licensors in 2018 in connection with receiving milestone and other payments from our licensees.

These increases were partially offset by the following decreases in research and development expenses:

- approximately $12.5 million in decreased success payment expenses resulting from notes payable that were issued to Broad and settled during the second quarter of 2018 in connection with us entering into a sponsored research agreement with Broad; and
- approximately $1.2 million in decreased stock-based compensation expenses mostly due to a decrease in non-employee stock option expense.

General and Administrative Expenses

General and administrative expenses increased by approximately $9.5 million, to $64.6 million for the year ended December 31, 2019 from $55.0 million for the year ended December 31, 2018. The following table summarizes our general and administrative expenses for the years ended December 31, 2019 and December 31, 2018, together with the changes in those items in dollars (in thousands) and the respective percentages of change:

	Year Ended December 31,			
	2019	2018	Dollar Change	Percentage Change
Intellectual property and patent related fees	$ 18,103	$ 20,442	$ (2,339)	(11)%
Professional service expenses	14,462	6,875	7,587	n/m
Stock-based compensation expenses	13,705	11,864	1,841	16 %
Employee related expenses	12,781	11,502	1,279	11 %
Other expenses	5,504	4,327	1,177	27 %
Total general and administrative expenses	$ 64,555	$ 55,010	$ 9,545	17 %

The increase in general and administrative expenses for the year ended December 31, 2019 compared to the year ended December 31, 2018 was primarily attributable to:

- approximately $7.6 million in increased professional services expenses primarily related to an increase in our use of consulting services;
- approximately $1.8 million in increased stock-based compensation expenses due to an increase in employee stock option expense and employee headcount;

- approximately $1.3 million in increased employee related expenses due to an increase in the size of our workforce; and

- approximately $1.2 million in increased other expenses including facility-related expenses.

These increases were partially offset by an approximate $2.3 million in decreased intellectual property and patent related fees, including expenses associated with the prosecution and maintenance of patents and patent applications.

Other Income, Net

For the year ended December 31, 2019, other income, net was $7.2 million, which was primarily attributable to interest income and accretion of discounts associated with marketable securities.

For the year ended December 31, 2018, other income, net was $3.8 million, which was primarily attributable to interest income, accretion of discounts associated with marketable securities, and rental income from our former subtenant, partially offset by interest expense on our construction financing lease obligation.

Comparison of Years Ended December 31, 2018 and 2017

The following table summarizes our results of operations for the years ended December 31, 2018 and 2017, together with the changes in those items in dollars (in thousands) and the respective percentage of changes:

	Year Ended December 31,			
	2018	2017	Dollar Change	Percentage Change
Collaboration and other research and development revenues	$ 31,937	$ 13,728	$ 18,209	n/m
Operating expenses:				
Research and development	90,654	83,159	7,495	9 %
General and administrative	55,010	50,502	4,508	9 %
Total operating expenses	145,664	133,661	12,003	9 %
Other income (expense), net:				
Other income, net	328	587	(259)	n/m
Interest income (expense), net	3,445	(978)	4,423	n/m
Total other income (expense), net	3,773	(391)	4,164	n/m
Net loss	$ (109,954)	$ (120,324)	$ 10,370	9 %

Collaboration and Other Research and Development Revenues

Collaboration and other research and development revenues increased by $18.2 million, to $31.9 million for the year ended December 31, 2018 from $13.7 million for the year ended December 31, 2017. This increase was primarily attributable to a $12.7 million increase in revenue recognized pursuant to our strategic alliance with Allergan, $4.0 million in revenue recognized in connection with entering into an out-license agreement and a $1.5 million increase in revenue recognized pursuant to our collaboration with Juno Therapeutics.

Research and Development Expenses

Research and development expenses increased by $7.5 million, to $90.7 million for the year ended December 31, 2018 from $83.2 million for the year ended December 31, 2017. The following table summarizes our research and

development expenses for the years ended December 31, 2018 and December 31, 2017, together with the changes in those items in dollars (in thousands) and the respective percentages of change:

	Year Ended December 31,			
	2018	2017	Dollar Change	Percentage Change
Process and platform development expenses	$ 25,466	$ 17,117	$ 8,349	49 %
Employee related expenses	19,771	14,406	5,365	37 %
Stock-based compensation expenses	14,734	15,131	(397)	(3) %
Success payment expenses	12,500	14,500	(2,000)	(14) %
Licensing and sublicensing payment expenses	8,707	14,610	(5,903)	(40) %
Facility expenses	6,058	4,416	1,642	37 %
Other expenses	3,418	2,979	439	15 %
Total research and development expenses	$ 90,654	$ 83,159	$ 7,495	9 %

The increase in research and development expenses for the year ended December 31, 2018 compared to the year ended December 31, 2017 was primarily attributable to:

- approximately $8.3 million in increased process and platform development expenses due to increased research activity, mostly relating to external research and development costs, which was partially offset by $1.7 million in reimbursable research and development expenses associated with our profit-sharing arrangement with Allergan related to EDIT-101;

- approximately $5.4 million in increased employee related expenses due to an increase in the size of our workforce; and

- approximately $2.0 million in increased facility and other related expenses due to increased professional service and office expenses.

These increases were partially offset by the following decreases in research and development expenses:

- approximately $5.9 million in decreased licensing and sublicensing payment expenses resulting primarily from $14.5 million in sublicense fees that were owed to certain of our licensors in connection with receiving the Allergan Upfront and a milestone received under our collaboration with Juno Therapeutics in 2017, partially offset by sublicense fees owed to certain of our licensors in 2017 in connection with receiving milestone and other payments from our licensees;

- approximately $2.0 million in decreased success payment expenses resulting primarily from $14.5 million in success payments due to the triggering of multiple success payment obligations under licensing agreements in 2017, offset by the $12.5 million notes payable that were issued to Broad and settled during the second quarter of 2018 in connection with us entering into a sponsored research agreement with Broad; and

- approximately $0.4 million in decreased stock-based compensation expenses.

General and Administrative Expenses

General and administrative expenses increased by $4.5 million, to $55.0 million for the year ended December 31, 2018 from $50.5 million for the year ended December 31, 2017. The following table summarizes our general and

administrative expenses for the years ended December 31, 2018 and December 31, 2017, together with the changes in those items in dollars (in thousands) and the respective percentages of change:

	Year Ended December 31,			
	2018	2017	Dollar Change	Percentage Change
Intellectual property and patent related fees	$ 20,442	$ 23,921	$ (3,479)	(15)%
Stock-based compensation expenses	11,864	8,233	3,631	44 %
Employee related expenses	11,502	8,915	2,587	29 %
Professional service expenses	6,875	6,010	865	14 %
Other expenses	4,327	3,423	904	26 %
Total general and administrative expenses	$ 55,010	$ 50,502	$ 4,508	9 %

The increase in general and administrative expenses for the year ended December 31, 2018 compared to the year ended December 31, 2017 was primarily attributable to:

- approximately $3.6 million in increased stock-based compensation expenses due to an increase in employee stock option expense;
- approximately $2.6 million in increased employee related expenses due to an increase in the size of our workforce;
- approximately $0.9 million in increased other expenses including facility-related expenses; and
- approximately $0.9 million in increased professional services expenses.

These increases were partially offset by an approximate $3.5 million in decreased intellectual property and patent related fees, including expenses associated with the prosecution and maintenance of patents and patent applications.

Other Income (Expense), Net

For the year ended December 31, 2018, other income, net was $3.8 million, which was primarily attributable to interest income, accretion of discounts associated with marketable securities, and rental income from our former subtenant, partially offset by interest expense on our construction financing lease obligation.

For the year ended December 31, 2017, other expense, net was $0.4 million, which was primarily attributable to interest expense on our construction financing lease obligation and certain promissory notes, and amortization of premiums associated with marketable securities, partially offset by rental income from our former subtenant, interest income and accretion of discounts associated with marketable securities.

Liquidity and Capital Resources

Sources of Liquidity

From inception through December 31, 2019, we funded our operations primarily through proceeds from private placements of our preferred stock of $163.3 million, net proceeds of $444.8 million from public offerings of our common stock, the Allergan Upfront and other milestones paid by Allergan, and payments from Juno Therapeutics under our collaboration with them. As of December 31, 2019, we had cash, cash equivalents and marketable securities of $457.1 million.

In addition to our existing cash, cash equivalents and marketable securities we are eligible to earn milestone and option exercise payments under our collaboration agreement with Juno Therapeutics. Additionally, under our strategic alliance with Allergan, we are eligible to earn milestone payments, certain cost reimbursement for EDIT-101 costs in the

United States and certain option exercise or extension payments. Our ability to earn the milestone payments and the timing of earning these amounts are dependent upon the timing and outcome of our development, regulatory and commercial activities and, as such, are uncertain at this time. As of December 31, 2019, our right to contingent payments under our collaboration agreement with Juno Therapeutics and our strategic alliance with Allergan are our only significant committed potential external sources of funds.

2019 At-the-Market Offerings

In March 2018, we entered into a sales agreement with Cowen, under which we are able from time to time to issue and sell shares of our common stock through Cowen for aggregate gross sales proceeds of $150.0 million (the "March 2018 ATM Program"). Through December 31, 2019, we sold an aggregate of 5,448,428 shares of our common stock pursuant to the March 2018 ATM Program at a weighted-average price of $27.53 per share for gross proceeds of $150.0 million. We paid Cowen a 3% cash commission on the gross sales price per share of our common stock sold under the March 2018 ATM Program. No shares of common stock remain available for sale under the sales agreement.

Cash Flows

The following table provides information regarding our cash flows for the years ended December 31, 2019, 2018 and 2017, respectively (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Net cash (used in) provided by:			
Operating activities	$ (40,669)	$ (45,707)	$ (9,417)
Investing activities	12,252	(53,087)	(183,810)
Financing activities	131,824	86,940	154,534
Net increase (decrease) in cash and cash equivalents	$ 103,407	$ (11,854)	$ (38,693)

Net Cash (Used in) Operating Activities

Net cash used in operating activities was approximately $40.7 million for the year ended December 31, 2019. During the year ended December 31, 2019, we received $70.0 million related to our amended and restated collaboration agreement with Juno Therapeutics, which was partially recognized in revenue during the fourth quarter of 2019, partially offset by revenue recognized related to our strategic alliance with Allergan. This amount was offset by operating expenses that related to our on-going preclinical and clinical activities, sublicense expense, intellectual property costs and increased employee related expenses due to an increase in the size of our workforce.

Net cash used in operating activities was approximately $45.7 million for the year ended December 31, 2018. During the year ended December 31, 2018, we received $25.0 million related to the EDIT-101 Milestone Payment which was partially recognized as revenue during the fourth quarter of 2018 and $15.0 million related to the EDIT-101 Option Exercise Payment which was fully recognized as revenue during the third quarter of 2018, both related to our strategic alliance with Allergan. We received $10.0 million related to our amended and restated collaboration agreement with Juno Therapeutics which was partially recognized during 2018. Additionally, we issued $12.5 million in notes payable to Broad and settled in shares of common stock during the second quarter of 2018 in connection with our entry into a sponsored research agreement with Broad. This amount was offset by operating expenses that related to our on-going preclinical activities, sublicensing and success payments, intellectual property costs and increased employee related expenses due to an increase in the size of our workforce.

Net cash used in operating activities was approximately $9.4 million for the year ended December 31, 2017. During the year ended December 31, 2017, we received a $90.0 million up-front payment associated with our strategic alliance with Allergan. This was partially offset by revenue recognized associated with our collaboration arrangement with Juno Therapeutics and our strategic alliance with Allergan. Additionally, we issued $14.5 million in notes payable

due to triggering success payments under licensing agreements. This amount was offset by operating expenses that related to our on-going preclinical activities, sublicensing payments, intellectual property costs and increased employee related expenses due to an increase in the size of our workforce.

Net Cash (Used in) Provided by Investing Activities

Net cash provided by investing activities was approximately $12.3 million for the year ended December 31, 2019, primarily related to proceeds from maturities of marketable securities of $360.5 million, partially offset by costs to acquire marketable securities of $342.2 million and costs to acquire property plant and equipment of $6.2 million.

Net cash used in investing activities was approximately $53.1 million for the year ended December 31, 2018, primarily related to costs to acquire marketable securities of $459.4 million and costs to acquire property plant and equipment of $4.8 million, partially offset by proceeds from maturities of marketable securities of $411.0 million.

Net cash used in investing activities was approximately $183.8 million for the year ended December 31, 2017, primarily related to costs to acquire marketable securities of $375.3 million and costs to acquire property plant and equipment of $2.1 million, partially offset by proceeds from maturities of marketable securities of $193.5 million.

Net Cash Provided by Financing Activities

Net cash provided by financing activities was approximately $131.8 million for the year ended December 31, 2019, primarily related to $116.3 million in proceeds received from at-the-market offerings of our common stock, net of issuance costs that were paid as of December 31, 2019, $14.9 million in proceeds from exercises of options for our common stock and $0.6 million from issuances of our common stock under equity benefit plans.

Net cash provided by financing activities was approximately $86.9 million for the year ended December 31, 2018, primarily related to $76.8 million in proceeds received from at-the-market offerings of our common stock, net of issuance costs that were paid as of December 31, 2018, $10.3 million in proceeds from exercises of options for our common stock and $0.7 million from issuances of our common stock under equity benefit plans, partially offset by payments on our construction financing lease obligation of $0.9 million.

Net cash provided by financing activities was approximately $154.5 million for the year ended December 31, 2017, primarily related to $154.1 million in proceeds received from public offerings of common stock, net of issuance costs that were paid as of December 31, 2017, and $1.8 million in proceeds from exercises of options for our common stock, partially offset by payments on our construction financing lease obligation of $0.8 million and promissory notes of $0.6 million.

Funding Requirements

We expect our expenses to increase in connection with our ongoing activities, particularly as we further advance our current research programs and our preclinical development activities; progress the clinical development of EDIT-101 with Allergan; seek to identify product candidates and additional research programs; initiate preclinical testing and clinical trials for other product candidates we identify and develop; maintain, expand, and protect our intellectual property portfolio, including reimbursing our licensors for expenses related to the intellectual property that we in-license from such licensors; hire additional clinical, quality control, and scientific personnel; and incur costs associated with operating as a public company. In addition, if we obtain marketing approval for any product candidate that we identify and develop, we expect to incur significant commercialization expenses related to product sales, marketing, manufacturing, and distribution to the extent that such sales, marketing, and distribution are not the responsibility of a collaborator. We do not expect to generate significant recurring revenue unless and until we obtain regulatory approval for and commercialize a product candidate. Furthermore, since 2016 we have incurred, and in future years we expect to continue to incur, significant costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we would be forced to delay, reduce, or eliminate our research and development programs or future commercialization efforts.

We expect that our existing cash, cash equivalents and marketable securities at December 31, 2019 and anticipated interest income will enable us to fund our operating expenses and capital expenditure requirements for at least 24 months following the date of this Annual Report on Form 10-K. We have based our estimates on assumptions that may prove to be wrong, and we may use our available capital resources sooner than we currently expect. Our future capital requirements will depend on many factors, including:

- the scope, progress, results, and costs of drug discovery, preclinical development, laboratory testing, and clinical or natural history study trials for the product candidates we develop;
- the costs of progressing the clinical development with Allergan of EDIT-101 to treat LCA10;
- the costs of preparing, filing, and prosecuting patent applications, maintaining and enforcing our intellectual property and proprietary rights, and defending intellectual property-related claims;
- the costs, timing, and outcome of regulatory review of the product candidates we develop;
- the costs of future activities, including product sales, medical affairs, marketing, manufacturing, and distribution, for any product candidates for which we receive regulatory approval;
- the success of our collaboration with Juno Therapeutics and our strategic alliance with Allergan;
- whether Juno Therapeutics exercises any of its options to extend the research program term and/or to certain of the research programs under our collaboration;
- whether Allergan exercises any additional options under our strategic alliance;
- our ability to establish and maintain additional collaborations on favorable terms, if at all;
- the extent to which we acquire or in-license other medicines and technologies;
- the costs of reimbursing our licensors for the prosecution and maintenance of the patent rights in-licensed by us; and
- the costs of operating as a public company.

Identifying potential product candidates and conducting preclinical studies and clinical trials is a time-consuming, expensive, and uncertain process that takes many years to complete, and we may never generate the necessary data or results required to obtain marketing approval and achieve product sales. In addition, any product candidate that we identify and develop, if approved, may not achieve commercial success. Our commercial revenues, if any, will be derived from sales of genomic medicines that we do not expect to be commercially available for many years, if at all. Accordingly, we will need to continue to rely on additional financing to achieve our business objectives. Adequate additional financing may not be available to us on acceptable terms, or at all.

Until such time, if ever, as we can generate substantial product revenues, we expect to finance our cash needs through a combination of equity offerings, debt financings, collaborations, strategic alliances, and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, our stockholders' ownership interests will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our stockholders. Debt financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, or declaring dividends.

If we raise funds through additional collaborations, strategic alliances, or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams, research programs, or

product candidates or to grant licenses on terms that may not be favorable to us. If we are unable to raise additional funds through equity or debt financings when needed, we may be required to delay, limit, reduce, or terminate our product development or future commercialization efforts or grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves.

Contractual Obligations

The following table summarizes our significant contractual obligations as of payment due date by period at December 31, 2019 (in thousands):

	Total	Less Than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years
Operating lease obligations [1]	$ 35,092	$ 8,150	$ 15,889	$ 10,763	$ 290

(1) Represents future minimum lease payments under our non-cancelable operating leases. The minimum lease payments above exclude our share of the facility operating expenses and other costs that are reimbursable to the landlord under the leases.

The table above does not include potential milestone and success fees, sublicense fees, royalty fees, licensing maintenance fees, and reimbursement of patent maintenance costs that we may be required to pay under agreements we have entered into with certain institutions to license intellectual property. Our agreements to license intellectual property include potential milestone payments that are dependent upon the development of products using the intellectual property licensed under the agreements and contingent upon the achievement of development or regulatory approval milestones, as well as commercial milestones. We have not included such potential obligations in the table above because they are contingent upon the occurrence of future events and the timing and likelihood of such potential obligations are not known with certainty. For further information regarding these agreements, please see “Business—Our Collaborations and Licensing Strategy.”

We enter into contracts in the normal course of business with contract research organizations and other vendors to assist in the performance of our research and development activities and other services and products for operating purposes. These contracts generally provide for termination on notice, and therefore are cancelable contracts and not included in the table of contractual obligations and commitments.

Off-Balance Sheet Arrangements

We did not have, during the periods presented, and we do not currently have, any off-balance sheet arrangements, as defined under applicable Securities and Exchange Commission rules.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

We are exposed to market risk related to changes in interest rates. As of December 31, 2019, we had cash and cash equivalents of $238.2 million, primarily held in money market mutual funds consisting of U.S. government-backed securities, and marketable securities of $219.0 million, primarily consisting of U.S. government-backed securities. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments, including cash equivalents, are in the form, or may be in the form of, money market funds or marketable securities and are or may be invested in U.S. Treasury and U.S. government agency obligations. Due to the short-term maturities and low risk profiles of our investments, an immediate 100 basis point change in interest rates would not have a material effect on the fair market value of our investments.

While we contract with certain vendors and institutions internationally, substantially all of our total liabilities as of December 31, 2019 were denominated in the United States dollar and we believe that we do not have any material exposure to foreign currency exchange rate risk.

Item 8. Financial Statement and Other Supplementary Information.

EDITAS MEDICINE, INC.

INDEX TO FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Editas Medicine, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Editas Medicine, Inc. (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, stockholders' equity , and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated February 26, 2020 expressed an unqualified opinion thereon.

Adoption of ASU No. 2016-02

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for leases in year ended December 31, 2019 due to the adoption of ASU No. 2016-02, *Leases (Topic 842)*.

Adoption of ASU No. 2014-09

As discussed in Note 2 to the consolidated financial statements, the Company changed its method of accounting for revenue in 2018 due to the adoption of Accounting Standards Update (ASU) No. 2014-09, *Revenue from Contracts with Customers* (Topic 606), and the related amendments

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on

the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue recognition under the proportional performance model related to the Allergan Strategic Alliance and Option Agreement

Description of the Matter

Collaboration and other research and development revenues recognized from the Allergan Pharmaceuticals Strategic Alliance and Option Agreement was $13.6 million for the year ended December 31, 2019. As discussed in Note 9 to the consolidated financial statements, the Company entered into a Strategic Alliance and Option Agreement with Allergan during 2017 to develop and commercialize gene editing medicines for a range of ocular disorders over a seven year research term. The Company recognizes revenue related to its research services for each Clinical Development Program, or CDP, as the underlying services are performed using a proportional performance model. The Company measures proportional performance based on full time employee hours incurred relative to projected full time employee hours to complete the research services for each CDP.

Auditing collaboration and other research and development revenues recognized from the Allergan collaboration is especially challenging because the proportional performance calculation involves subjective management assumption about estimates of the expected remaining hours to complete the research services for each CDP. Changes in this assumption can have a material effect on the amount of collaboration and other research and development revenues recognized.

How We Addressed the Matter in Our Audit

We obtained an understanding of the Company's process, evaluated the design and tested the operating effectiveness of internal controls over the Company's collaboration and other research and development revenue recognition process, including controls over the underlying assumptions used by management to determine and support the completeness of the estimates used in the proportional performance calculation.

Our audit procedures included, among others, the inspection of the Company's contract with Allergan and management's relevant accounting memoranda. Our audit procedures also included evaluating the significant assumption and the accuracy and completeness of the underlying data used in management's calculation. Further, to audit management's estimate of the remaining hours to complete the research services we tested the completeness and accuracy of management's forecasted data, which included the evaluation of management's budget process and performed cross-functional inquiries of individuals within R&D functions. Additionally, we assessed the contractual arrangements in comparison to management's estimate to ensure the completeness of the remaining hours in comparison to the required outputs of the contract. We also performed audit procedures to compare the Company's historical estimates of the remaining hours to complete the research services and a sensitivity analysis to evaluate the materiality of change in management's estimation.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2015.

Boston, Massachusetts

February 26, 2020

Editas Medicine, Inc.
Consolidated Balance Sheets
(amounts in thousands, except share and per share data)

	December 31,	
	2019	2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 238,183	$ 134,776
Marketable securities	218,957	234,179
Accounts receivable	418	30
Prepaid expenses and other current assets	6,286	5,791
Total current assets	463,844	374,776
Property and equipment, net	10,887	40,232
Right-of-use assets	28,761	—
Restricted cash and other non-current assets	5,393	5,378
Total assets	$ 508,885	$ 420,386
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 5,843	$ 5,327
Accrued expenses	22,120	12,813
Deferred revenue, current	23,514	15,712
Operating lease liabilities	5,804	—
Other current liabilities	2,682	2,048
Total current liabilities	59,963	35,900
Operating lease liabilities, net of current portion	23,277	—
Deferred revenue, net of current portion	163,207	115,614
Construction financing lease obligation, net of current portion	—	32,417
Other non-current liabilities	1	293
Total liabilities	246,448	184,224
Commitments and contingencies (see Note 8)		
Stockholders' equity		
Preferred stock, $0.0001 par value per share: 5,000,000 shares authorized; no shares issued or outstanding	—	—
Common stock, $0.0001 par value per share: 195,000,000 shares authorized; 54,553,798 and 49,028,907 shares issued, and 54,355,798 and 48,758,951 shares outstanding at December 31, 2019 and December 31, 2018, respectively	5	5
Additional paid-in capital	811,546	652,464
Accumulated other comprehensive income (loss)	107	(29)
Accumulated deficit	(549,221)	(416,278)
Total stockholders' equity	262,437	236,162
Total liabilities and stockholders' equity	$ 508,885	$ 420,386

The accompanying notes are an integral part of the consolidated financial statements.

Editas Medicine, Inc.
Consolidated Statements of Operations
(amounts in thousands, except per share and share data)

	Year Ended December 31,		
	2019	2018	2017
Collaboration and other research and development revenues	$ 20,531	$ 31,937	$ 13,728
Operating expenses:			
Research and development	96,898	90,654	83,159
General and administrative	64,555	55,010	50,502
Total operating expenses	161,453	145,664	133,661
Operating loss	(140,922)	(113,727)	(119,933)
Other income (expense), net			
Other (expense) income, net	(137)	328	587
Interest income (expense), net	7,313	3,445	(978)
Total other income (expense), net	7,176	3,773	(391)
Net loss	$ (133,746)	$ (109,954)	$ (120,324)
Reconciliation of net loss to net loss attributable to common stockholders:			
Net loss attributable to common stockholders	$ (133,746)	$ (109,954)	$ (120,324)
Net loss per share attributable to common stockholders, basic and diluted	$ (2.68)	$ (2.33)	$ (2.98)
Weighted-average common shares outstanding, basic and diluted	49,983,329	47,097,735	40,323,631

The accompanying notes are an integral part of the consolidated financial statements.

Editas Medicine, Inc.
Consolidated Statements of Comprehensive Loss
(amounts in thousands)

	Year Ended December 31,		
	2019	**2018**	**2017**
Net Loss	$ (133,746)	$ (109,954)	$ (120,324)
Other comprehensive loss:			
Unrealized gain (loss) on marketable securities	136	47	(76)
Comprehensive loss	$ (133,610)	$ (109,907)	$ (120,400)

The accompanying notes are an integral part of the consolidated financial statements.

Editas Medicine, Inc.
Consolidated Statements of Stockholders' Equity
(amounts in thousands except share data)

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive (Loss) Gain	Total Stockholders' Equity
	Shares	Amount				
Balance at December 31, 2016	35,818,131	$ 4	$ 320,129	$ (185,526)	$ —	$ 134,607
Issuance of common stock from public offering, net of issuance costs of $0.6 million	4,600,000	—	96,685	—	—	96,685
Issuance of common stock for repayment of notes payable	750,617	—	14,823	—	—	14,823
Issuance of common stock from public offering, net of issuance costs of $1.7 million	2,265,500	—	57,223	—	—	57,223
Exercise of stock options	272,210	—	1,768	—	—	1,768
Vesting of restricted common stock and common stock subject to repurchase	801,502	—	—	—	—	8,085
Stock-based compensation expense	—	—	23,374	—	—	15,289
Unrealized loss on marketable securities	—	—	—	—	(76)	(76)
Net loss	—	—	—	(120,324)	—	(120,324)
Balance at December 31, 2017	44,507,960	$ 4	$ 514,002	$ (305,850)	$ (76)	$ 208,080
Cumulative effect adjustment for adoption of new accounting guidance	—	—	—	(474)	—	(474)
Issuance of common stock for repayment of notes payable	636,526	—	22,030	—	—	22,030
Issuance of common stock from at-the-market offering, net of issuance costs of $0.1 million	1,429,205	1	48,493	—	—	48,494
Issuance of common stock from at-the-market offering, net of issuance costs of $0.6 million	1,107,000	—	28,387	—	—	28,387
Issuance of common stock for asset purchase agreement	56,099	—	1,942	—	—	1,942
Exercise of stock options	749,294	—	10,328	—	—	10,328
Stock-based compensation expense	—	—	26,598	—	—	26,598
Purchase of common stock under benefits plans	26,272	—	680	—	—	680
Vesting of restricted common stock awards	72,000	—	—	—	—	—
Vesting of employee restricted common stock and common stock subject to repurchase	174,595	—	4	—	—	4
Unrealized gain on marketable securities	—	—	—	—	47	47
Net loss	—	—	—	(109,954)	—	(109,954)
Balance at December 31, 2018	48,758,951	$ 5	$ 652,464	$ (416,278)	$ (29)	$ 236,162
Cumulative effect adjustment for adoption of new accounting guidance	—	—	—	803	—	803
Issuance of common stock from at-the-market offering, net of issuance costs of $0.2 million	4,341,428	—	116,356	—	—	116,356
Exercise of stock options	1,120,186	—	14,863	—	—	14,863
Stock-based compensation expense	—	—	27,243	—	—	27,243
Purchase of common stock under benefits plans	35,314	—	620	—	—	620
Vesting of restricted common stock and awards	99,919	—	—	—	—	—
Unrealized gain on marketable securities	—	—	—	—	136	136
Net loss	—	—	—	(133,746)	—	(133,746)
Balance at December 31, 2019	54,355,798	$ 5	$ 811,546	$ (549,221)	$ 107	$ 262,437

The accompanying notes are an integral part of the consolidated financial statements.

Editas Medicine, Inc.
Consolidated Statements of Cash Flows
(amounts in thousands)

	Year Ended December 31,		
	2019	2018	2017
Cash flow from operating activities			
Net loss	$ (133,746)	$ (109,954)	$ (120,324)
Adjustments to reconcile net loss to net cash used in operating activities:			
Stock-based compensation expense	27,243	26,598	23,364
Depreciation	2,830	3,254	2,683
Non-cash research and development expenses	—	14,442	14,500
Non-cash investment in equity securities	—	(3,667)	—
Other non-cash items, net	(2,928)	(3,268)	(300)
Changes in operating assets and liabilities:			
Accounts receivable	(388)	649	(591)
Prepaid expenses and other current assets	(495)	(3,410)	(596)
Right-of-use assets	(9,300)	—	—
Other non-current assets	(15)	(92)	2
Accounts payable	274	1,780	(1,515)
Accrued expenses	9,485	4,042	(8,334)
Deferred revenue	55,395	22,889	81,707
Operating lease liabilities	9,324	—	—
Other current and non-current liabilities	1,652	1,030	(13)
Net cash used in operating activities	(40,669)	(45,707)	(9,417)
Cash flow from investing activities			
Purchases of property and equipment	(6,167)	(4,754)	(2,059)
Proceeds from the sale of equipment	102	37	15
Purchases of marketable securities	(342,183)	(459,370)	(375,266)
Proceeds from maturities of marketable securities	360,500	411,000	193,500
Net cash provided by (used in) investing activities	12,252	(53,087)	(183,810)
Cash flow from financing activities			
Proceeds from offering of common stock, net of issuance costs	116,341	76,789	154,143
Proceeds from exercise of stock options	14,863	10,328	1,755
Payments on construction financing lease obligation	—	(857)	(764)
Issuances of common stock under benefit plans	620	680	—
Payments of notes payable	—	—	(600)
Net cash provided by financing activities	131,824	86,940	154,534
Net increase (decrease) in cash, cash equivalents, and restricted cash	103,407	(11,854)	(38,693)
Cash, cash equivalents, and restricted cash, beginning of period	136,395	148,249	186,942
Cash, cash equivalents, and restricted cash, end of period	$ 239,802	$ 136,395	$ 148,249
Supplemental disclosure of cash and non-cash activities:			
Right-of-use assets obtained in exchange of operating lease obligations	$ 19,461	$ —	$ —
Cash paid in connection with operating lease liabilities	5,970	—	—
Fixed asset additions included in accounts payable and accrued expenses	728	659	623
Offering expenses included in accounts payable and accrued expenses	15	92	235
Reclassification of liability for common stock subject to repurchase	—	4	11
Issuance of common stock for repayment of notes payable	—	22,030	14,823
Issuance of common stock for asset acquisition	—	1,942	—

The accompanying notes are an integral part of the consolidated financial statements.

Editas Medicine, Inc.
Notes to Consolidated Financial Statements

1. Nature of Business

Editas Medicine, Inc. (the "Company") is a leading, clinical stage genome editing company dedicated to developing potentially transformative genomic medicines to treat a broad range of serious diseases. The Company was incorporated in the state of Delaware in September 2013. Its principal offices are in Cambridge, Massachusetts.

Since its inception, the Company has devoted substantially all of its efforts to business planning, research and development, recruiting management and technical staff, and raising capital. The Company has primarily financed its operations through various equity financings, payments received under a research collaboration with Juno Therapeutics, a wholly-owned subsidiary of the Bristol-Myers Squibb Company ("Juno Therapeutics"), and payments received under a strategic alliance and option agreement with Allergan Pharmaceuticals International Limited (together with its affiliates, "Allergan")

The Company is subject to risks common to companies in the biotechnology industry, including but not limited to, risks of failure of preclinical studies and clinical trials, the need to obtain marketing approval for any drug product candidate that it may identify and develop, the need to successfully commercialize and gain market acceptance of its product candidates, dependence on key personnel, protection of proprietary technology, compliance with government regulations, development by competitors of technological innovations and ability to transition from pilot-scale manufacturing to large-scale production of products.

Liquidity

As of December 31, 2019, the Company has raised an aggregate of $444.8 million in net proceeds through the sale of shares of its common stock in public offerings and at-the-market offerings. In March 2018, the Company entered into a sales agreement with Cowen and Company, LLC ("Cowen"), under which the Company from time to time could issue and sell shares of its common stock through Cowen in at-the-market offerings for aggregate gross sales proceeds of $150.0 million (the "March 2018 ATM Program"). Through December 31, 2019, the Company sold an aggregate of 5,448,428 shares of its common stock pursuant to the March 2018 ATM Program at a weighted-average price of $27.53 per share for gross proceeds of $150.0 million. The Company paid Cowen a 3% cash commission on the gross sales price per share of its common stock sold under the March 2018 ATM Program. No shares of common stock remain available for sale under the March 2018 ATM Program.

The Company has incurred annual net operating losses in every year since its inception. The Company expects that its existing cash, cash equivalents and marketable securities at December 31, 2019 and anticipated interest income will enable it to fund its operating expenses and capital expenditure requirements for at least 24 months following the date of this Annual Report on Form 10-K. The Company had an accumulated deficit of $549.2 million at December 31, 2019, and will require substantial additional capital to fund its operations. The Company has never generated any product revenue. There can be no assurance that the Company will be able to obtain additional debt or equity financing or generate product revenue or revenues from collaborative partners, on terms acceptable to the Company, on a timely basis or at all. The failure of the Company to obtain sufficient funds on acceptable terms when needed could have a material adverse effect on the Company's business, results of operations, and financial condition.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The accompanying consolidated financial statements include the accounts of Editas Medicine, Inc. and its wholly owned subsidiary, Editas Securities Corporation, which is a Delaware subsidiary created to buy, sell and hold securities. All intercompany transactions and balances have been eliminated.

Basis of Presentation

The accompanying consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"). Any reference in these notes to applicable guidance is meant to refer to the authoritative United States generally accepted accounting principles as found in the Accounting Standards Codification ("ASC") and Accounting Standards Updates ("ASU") of the Financial Accounting Standards Board ("FASB").

Reclassification

Certain prior period amounts have been reclassified for consistency with the current period presentation. These reclassifications had no effect on previously reported results of operations.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. On an ongoing basis, the Company's management evaluates its estimates, which include, but are not limited to, estimates related to revenue recognition, accrued expenses, stock-based compensation expense, research and development expenses and deferred tax valuation allowances. The Company bases its estimates on historical experience and other market-specific or relevant assumptions that it believes to be reasonable under the circumstances. Actual results may differ from those estimates or assumptions.

Fair Value of Financial Instruments

ASC Topic 820, *Fair Value Measurement* ("ASC 820"), establishes a fair value hierarchy for instruments measured at fair value that distinguishes between assumptions based on market data (observable inputs) and the Company's own assumptions (unobservable inputs). Observable inputs are inputs that market participants would use in pricing the asset or liability based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the inputs that market participants would use in pricing the asset or liability, and are developed based on the best information available in the circumstances.

ASC 820 identifies fair value as the exchange price representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As a basis for considering market participant assumptions in fair value measurements, ASC 820 establishes a three-tier fair value hierarchy that distinguishes between the following:

- *Level 1* – Quoted market prices in active markets for identical assets or liabilities.
- *Level 2* – Inputs other than Level 1 inputs that are either directly or indirectly observable, such as quoted market prices, interest rates, and yield curves.
- *Level 3* – Unobservable inputs developed using estimates of assumptions developed by the Company, which reflect those that a market participant would use.

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3. A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value measurement.

The carrying amounts reflected in the consolidated balance sheets for cash and cash equivalents, restricted cash, marketable securities, accounts receivable, prepaid expenses and other current assets, accounts payable, accrued expenses, and other current liabilities approximate their fair values, due to their short-term nature. The Company

believes that the carrying value of the notes payable approximates their fair value based on Level 3 inputs including a quoted rate.

Cash, Cash Equivalents, and Restricted Cash

The Company considers all highly liquid investments purchased with original maturities of 90 days or less at acquisition to be cash equivalents. Cash and cash equivalents include cash held in banks and amounts held in money market funds and U.S. government-backed securities.

The Company has restricted cash of $1.6 million held in the form of a letter of credit, as collateral for the Company's corporate headquarters. The restricted funds are maintained in a traditional bank account.

The following table presents cash, cash equivalents, and restricted cash as reported on the consolidated balance sheets that equal the total amounts on the consolidated statements of cash flows (in thousands):

	Year Ended As of December 31,		
	2019	2018	2017
Cash and cash equivalents	$ 238,183	$ 134,776	$ 146,630
Restricted cash included in "Restricted cash and other non-current assets"	1,619	1,619	1,619
Total cash, cash equivalents, and restricted cash	$ 239,802	$ 136,395	$ 148,249

Marketable Securities

The Company classifies marketable securities with a remaining maturity when purchased of greater than three months and less than one year from the balance sheet date as current. Marketable securities with a remaining maturity date greater than one year are classified as non-current. The Company classifies all of its marketable securities as available-for-sale securities. Available-for-sale securities are carried at fair value with the unrealized gains and losses included in other comprehensive loss as a component of stockholders' equity until realized. Any premium or discount arising at purchase is amortized and/or accreted to interest income and/or expense over the life of the of the underlying security. Realized gains and losses are included in other income (expense). If any adjustment to fair value reflects a decline in value of the investment, the Company considers all available evidence to evaluate the extent to which the decline is "other-than-temporary." To determine whether an impairment is other-than-temporary, the Company considers whether it has the ability and intent to hold the investment until a market price recovery and considers whether evidence indicating the cost of the investment is recoverable outweighs evidence to the contrary. The Company does not intend to sell the investments and it is not likely that the Company will be required to sell the investments before recovery of their amortized cost bases, which may be maturity.

Corporate Equity Securities

The Company records investments in privately issued corporate equity securities that do not have readily determinable fair values at cost and adjusts for changes in observable prices minus impairment. Each reporting period the Company adjusts the carrying value of these investments if it observes that additional shares have been issued in an orderly transaction between market participants resulting in a price increase or decrease per share. Additionally, each reporting period the Company reviews these investments for impairment considering all available information to conclude whether an impairment exists. Changes in measurement for all corporate equity investments are recognized in "Other income (expense)," net in the Company's consolidated statements of operations.

Accounts Receivable

The Company makes judgments as to its ability to collect outstanding receivables and provides an allowance for receivables when collection becomes doubtful. Provisions are made based upon a specific review of all significant

outstanding invoices and the overall quality and age of those invoices not specifically reviewed. The Company's receivables primarily relate to amounts reimbursed under its collaboration agreements. The Company believes that credit risk associated with its collaborations partners is not significant. To date, the Company has not had any write-offs of bad debt, and the Company did not have an allowance for doubtful accounts as of December 31, 2019 and 2018.

Property and Equipment

Property and equipment consists of computers, laboratory equipment, furniture and office equipment, and leasehold improvements and is stated at cost, less accumulated depreciation. Maintenance and repairs that do not improve or extend the lives of the respective assets are expensed to operations as incurred, while costs of major additions and betterments are capitalized. Depreciation is calculated over the estimated useful lives of the assets using the straight-line method. The Company capitalizes laboratory equipment used for research and development if it has alternative future use in research and development or otherwise.

Asset:	Estimated Useful life
Lab equipment	5 years
Computer equipment and software	3 years
Furniture and equipment	5 years
Leasehold improvements	Shorter of useful life or remaining lease term

Impairment of Long-lived Assets

The Company evaluates long-lived assets for potential impairment when events or changes in circumstances indicate the carrying value of the assets may not be recoverable. Recoverability is measured by comparing the book values of the assets to the expected future net undiscounted cash flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the book values of the assets exceed their fair value. The Company has not recognized any impairment losses from inception through December 31, 2019.

Profit-Sharing Arrangements

The Company considers the nature and contractual terms of the arrangements and assesses whether such arrangements involve a joint operating activity pursuant to which the Company is an active participant and is exposed to significant risks and rewards with respect to such arrangement. If the Company is an active participant and is exposed to significant risks and rewards with respect to such arrangement, the Company accounts for such arrangement as a collaboration under ASC Topic 808, *Collaborative Arrangements* (“ASC 808”). ASC 808 describes arrangements within its scope and considerations surrounding presentation and disclosure, with recognition matters subjected to other authoritative guidance, in certain cases by analogy.

Payments received from a collaboration partner to which this policy applies are recorded as contra-expense in the applicable period and may include development costs or patent expense reimbursements. The Company classifies payments made under the cost sharing provisions of such arrangements as a component of research and development expenses to reflect the joint risk sharing nature of such profit-sharing arrangements. The Company classifies payments owed or receivables recorded as other current liabilities or prepaid expenses and other current assets, respectively, in the Company’s consolidated balance sheets.

Revenue Recognition

To date, the Company has primarily earned revenue under the collaboration and license agreement with Juno Therapeutics and the strategic alliance with Allergan.

The Company recognizes revenue in accordance with ASC Topic 606, *Revenue from Contracts with Customers* (“ASC 606”), effective January 1, 2018. The Company enters into collaboration agreements and certain other agreements

that are within the scope of ASC 606, under which the Company licenses, may license or grants an option to license rights to certain of the Company's product candidates and performs research and development services in connection with such arrangements. The terms of these arrangements typically include payment of one or more of the following: non-refundable, up-front fees; reimbursement of research and development costs; development, clinical, regulatory and commercial sales milestone payments; and royalties on net sales of licensed products.

Under ASC 606, an entity recognizes revenue when its customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine the appropriate amount of revenue to be recognized for arrangements determined to be within the scope of ASC 606, the Company performs the following five steps: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when (or as) the Company satisfies each performance obligation. The Company only applies the five-step model to contracts when it is probable that the entity will collect consideration it is entitled to in exchange for the goods or services it transfers to the customer.

The promised goods or services in the Company's arrangements typically consist of a license, or option to license, rights to the Company's intellectual property or research and development services. The Company provides options to additional items in such arrangements, which are accounted for as separate contracts when the customer elects to exercise such options, unless the option provides a material right to the customer. Performance obligations are promised goods or services in a contract to transfer a distinct good or service to the customer and are considered distinct when (i) the customer can benefit from the good or service on its own or together with other readily available resources and (ii) the promised good or service is separately identifiable from other promises in the contract. In assessing whether promised good or services are distinct, the Company considers factors such as the stage of development of the underlying intellectual property, the capabilities of the customer to develop the intellectual property on its own or whether the required expertise is readily available and whether the goods or services are integral or dependent to other goods or services in the contract.

The Company estimates the transaction price based on the amount expected to be received for transferring the promised goods or services in the contract. The consideration may include fixed consideration or variable consideration. At the inception of each arrangement that includes variable consideration, the Company evaluates the amount of potential payment and the likelihood that the payments will be received. The Company utilizes either the most likely amount method or expected value method to estimate the amount expected to be received based on which method best predicts the amount expected to be received. The amount of variable consideration that is included in the transaction price may be constrained and is included in the transaction price only to the extent that it is probable that a significant reversal in the amount of the cumulative revenue recognized will not occur in a future period.

The Company's contracts often include development and regulatory milestone payments that are as assessed under the most likely amount method and constrained if it is probable that a significant revenue reversal would occur. Milestone payments that are not within the Company's control or the licensee's control, such as regulatory approvals, are not considered probable of being achieved until those approvals are received. At the end of each reporting period, the Company re-evaluates the probability of achievement of such development and clinical milestones and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect collaboration and other research and development revenues in the period of adjustment.

For arrangements that include sales-based royalties, including milestone payments based on the level of sales, and the license is deemed to be the predominant item to which the royalties relate, the Company recognizes revenue at the later of (i) when the related sales occur, or (ii) when the performance obligation to which some or all of the royalty has been allocated has been satisfied (or partially satisfied). To date, the Company has not recognized any royalty revenue resulting from any of the Company's collaboration or strategic alliance arrangements.

The Company allocates the transaction price based on the estimated standalone selling price. The Company must develop assumptions that require judgment to determine the stand-alone selling price for each performance obligation identified in the contract. The Company utilizes key assumptions to determine the stand-alone selling price, which may include other comparable transactions, pricing considered in negotiating the transaction and the estimated costs. Variable consideration is allocated specifically to one or more performance obligations in a contract when the terms of the variable consideration relate to the satisfaction of the performance obligation and the resulting amounts allocated are consistent with the amounts the Company would expect to receive for the satisfaction of each performance obligation.

The consideration allocated to each performance obligation is recognized as revenue when control is transferred for the related goods or services. For performance obligations which consist of licenses and other promises, the Company utilizes judgment to assess the nature of the combined performance obligation to determine whether the combined performance obligation is satisfied over time or at a point in time and, if over time, the appropriate method of measuring progress. The Company evaluates the measure of progress each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

The Company receives payments from its customers based on billing schedules established in each contract. Up-front payments and fees are recorded as deferred revenue upon receipt or when due until the Company performs its obligations under these arrangements. Amounts are recorded as accounts receivable when the Company's right to consideration is unconditional.

In connection with the Company's adoption of ASC 606, the Company has included the following financial statement line items for comparability purposes for the year ended December 31, 2018 (in thousands, except per share data):

	Year Ended December 31, 2018		
	As reported under Topic 606	Balances without adoption of ASC 606	Effect of Change
Collaboration and other research and development revenues	$ 31,937	$ 33,993	$ (2,056)
Operating loss	$ (113,727)	$ (111,671)	$ (2,056)
Net loss attributable to common stockholders	$ (109,954)	$ (107,898)	$ (2,056)
Net loss per share attributable to common stockholders, basic and diluted	$ (2.33)	$ (2.29)	$ (0.04)

Prior to ASC 606 Adoption

Revenue for the year ended December 31, 2017 was recognized in accordance with ASC Topic 605, *Revenue Recognition* ("ASC 605"). Accordingly, revenue was recognized for each unit of accounting when all of the following criteria are met:

- Persuasive evidence of an arrangement exists;
- Delivery has occurred or services have been rendered;
- The seller's price to the buyer is fixed or determinable; and
- Collectability is reasonably assured.

Amounts received prior to satisfying the revenue recognition criteria were recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified in current liabilities. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as deferred revenue, net of current portion.

The Company evaluated multiple-element arrangements based on the guidance in ASC Topic 605-25, *Revenue Recognition Multiple-Element Arrangements* ("ASC 605-25"). Pursuant to the guidance in ASC 605-25, the Company evaluated multiple-element arrangements to determine (1) the deliverables included in the arrangement and (2) whether the individual deliverables represented separate units of accounting or whether they must be accounted for as a combined unit of accounting. This evaluation involved subjective determinations and required the Company to make judgments about the individual deliverables and whether such deliverables were separable from the other aspects of the contractual relationship. Deliverables were considered separate units of accounting provided that the delivered item had value to the customer on a standalone basis and, if the arrangement included a general right of return relative to the delivered item, delivery or performance of the undelivered item is considered probable and substantially in the Company's control. In assessing whether an item had standalone value, the Company considered factors such as the research, development, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. In addition, the Company considered whether the collaboration partner can use a deliverable for its intended purpose without the receipt of the remaining deliverable, whether the value of the deliverable is dependent on the undelivered item and whether there are other vendors that can provide the undelivered items.

Options were considered substantive if, at the inception of the arrangement, the Company was at risk as to whether the collaboration partner will choose to exercise the option. Factors that the Company considered in evaluating whether an option is substantive include the cost to exercise the option, the overall objective of the arrangement, the benefit the collaborator might obtain from the arrangement without exercising the option and the likelihood the option will be exercised. When an option was considered substantive, the Company does not consider the option or item underlying the option to be a deliverable at the inception of the arrangement and the associated option fees are not included in allocable consideration, assuming the option is not priced at a significant and incremental discount. Conversely, when an option is not considered substantive, the Company would consider the option, including other deliverables contingent upon the exercise of the option, to be a deliverable at the inception of the arrangement and a corresponding amount would be included in allocable arrangement consideration. In addition, if the price of the option includes a significant incremental discount, the discount would be included as a deliverable at the inception of the arrangement.

The consideration received under the arrangement that is fixed or determinable was then allocated among the separate units of accounting using the relative selling price method. The Company determined the estimated selling price for units of accounting within each arrangement using vendor-specific objective evidence ("VSOE") of selling price, if available, third-party evidence ("TPE") of selling price if VSOE is not available, or best estimate of selling price ("BESP") if neither VSOE nor TPE is available. Determining the BESP for a unit of accounting required significant judgment. In developing the BESP for a unit of accounting, the Company considered applicable market conditions and relevant entity-specific factors, including factors that were contemplated in negotiating the agreement with the customer and estimated costs. The Company validated the BESP for units of accounting by evaluating whether changes in the key assumptions used to determine the BESP had a significant effect on the allocation of arrangement consideration between multiple units of accounting.

The Company recognized arrangement consideration allocated to each unit of accounting when all of the revenue recognition criteria in ASC 605 are satisfied for that particular unit of accounting. In the event that a deliverable does not represent a separate unit of accounting, the Company recognized revenue from the combined unit of accounting over the Company's contractual or estimated performance period for the undelivered elements, which is typically the term of the Company's research and development obligations. If there is no discernible pattern of performance or objectively measurable performance measures do not exist, then the Company recognized revenue under the arrangement on a straight-line basis over the period the Company is expected to complete its performance obligations. Conversely, if the pattern of performance in which the service is provided to the customer can be determined and objectively measurable performance measures exist, then the Company recognized revenue under the arrangement using the proportional performance method. Revenue recognized is limited to the lesser of the cumulative amount of payments received or the cumulative amount of revenue earned, as determined using the straight-line method or proportional performance method, as applicable, as of the period ending date.

At the inception of an arrangement that includes milestone payments, the Company evaluated whether each milestone was substantive and at risk to both parties on the basis of the contingent nature of the milestone. This

evaluation includes an assessment of whether: (1) the consideration is commensurate with either the Company's performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from its performance to achieve the milestone, (2) the consideration relates solely to past performance and (3) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. The Company evaluated factors such as the scientific, clinical, regulatory, commercial, and other risks that must be overcome to achieve the particular milestone and the level of effort and investment required to achieve the particular milestone in making this assessment. There was considerable judgment involved in determining whether a milestone satisfies all of the criteria required to conclude that a milestone is substantive. Milestones that are not considered substantive were recognized as earned if there are no remaining performance obligations or over the remaining period of performance, assuming all other revenue recognition criteria are met.

Research and Development Expenses

Research and development expenses are charged to expense as incurred in performing research and development activities. The costs include employee-related expenses including salaries, benefits, and stock-based compensation expense, costs of funding research performed by third parties that conduct research and development and preclinical and clinical activities on the Company's behalf, the cost of purchasing lab supplies and non-capital equipment used in preclinical and clinical activities and in manufacturing preclinical and clinical study materials, consultant fees, facility costs including rent, depreciation, and maintenance expenses, and fees for acquiring and maintaining licenses under third party licensing agreements, including any sublicensing or success payments made to the Company's licensors. In accruing service fees, the Company estimates the time period over which services will be performed and the level of effort to be expended in each period. If the actual timing of the performance of services or the level of effort varies from the Company's estimate, the accrual or prepaid is adjusted accordingly. The Company defers and capitalizes non-refundable advance payments made by the Company for research and development activities until the related goods are received or the related services are performed. In circumstances where amounts have been paid in excess of costs incurred, the Company records a prepaid expense.

In-process Research and Development Assets

In-process research and development assets that are acquired in a transaction that does not qualify as a business combination under GAAP and that do not have an alternative future use are expensed in the period in which the assets are acquired.

Patent Costs

The Company expenses patent and patent application costs and related legal costs for the prosecution and maintenance of such patents and patent applications, including patents and patent applications the Company in-licenses, as incurred and classifies such costs as general and administrative expenses in the accompanying consolidated statements of operations.

Construction Financing Lease Obligation

Beginning in 2016, the Company began recording certain estimated construction costs incurred and reported to the Company by a landlord as an asset and corresponding construction financing lease obligation on the Company's consolidated balance sheets because the Company was deemed to be the owner of the building during the construction period for accounting purposes. In each reporting period, the landlord estimated and reported to the Company the costs incurred to date and provided supporting invoices for the Company to review. The Company periodically met with the landlord and its construction manager to review the estimates and observe construction progress prior to recording such amounts. Construction was completed in October 2016 and the Company considered the requirements for sale-leaseback accounting treatment, which included an evaluation of whether all risks of ownership had transferred back to the landlord as evidenced by a lack of continuing involvement in the lease property. The Company determined that the arrangement did not qualify for sale lease-back accounting treatment, the building asset will remain on the Company's consolidated balance sheet at its historical cost, and such asset would be depreciated over its estimated useful life of thirty years.

Effective January 1, 2019, the Company adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases* (Topic 842) ("ASC 842") and derecognized the balances relating to the building, accumulated depreciation and the corresponding construction financing lease as summarized in the table below (in thousands). In applying the ASC 842 transition guidance, the Company determined that the lease should be classified as an operating lease and recorded a right-of-use asset and lease liability on the effective date, accordingly.

		As of January 1, 2019
Property and equipment, net	$	32,627
Other current liabilities	$	(1,014)
Construction financing lease obligation, net of current portion	$	(32,417)
Accumulated deficit	$	803

Leases

The Company accounts for leases in accordance with ASC 842. At the inception of an arrangement the Company determines whether the arrangement contains a lease. If a lease is identified in an arrangement, the Company recognizes a right-of-use asset and liability on its balance sheet and determines whether the lease should be classified as a finance or operating lease. The Company does not recognize assets or liabilities for leases with lease terms of less than 12 months. Lease payments for short-term leases are recorded to operating expense on a straight-line basis over the lease term and variable lease payments are recorded in the period in which the obligation for those payments is incurred.

A lease qualifies as a finance lease if any of the following criteria are met at the inception of the lease: (i) there is a transfer of ownership of the leased asset to the Company by the end of the lease term, (ii) the Company holds an option to purchase the leased asset that it is reasonably certain to exercise, (iii) the lease term is for a major part of the remaining economic life of the leased asset, (iv) the present value of the sum of lease payments equals or exceeds substantially all of the fair value of the leased asset, and (v) the nature of the leased asset is specialized to the point that it is expected to provide the lessor no alternative use at the end of the lease term. All other leases are recorded as operating leases.

Finance and operating lease assets and liabilities are recognized at the lease commencement date based on the present value of the lease payments over the lease term using the discount rate implicit in the lease. If the rate is not readily determinable, the Company utilizes its incremental borrowing rate at the lease commencement date. Operating lease assets are further adjusted for prepaid or accrued lease payments. Operating lease payments are expensed using the straight-line method as an operating expense over the lease term. Finance lease assets are amortized to depreciation expense using the straight-line method over the shorter of the useful life of the related asset or the lease term. Finance lease payments are bifurcated into (i) a portion that is recorded as imputed interest expense and (ii) a portion that reduces the finance liability associated with the lease.

The Company does not separate lease and non-lease components when determining which lease payments to include in the calculation of its lease assets and liabilities. Variable lease payments are expensed as incurred. If a lease includes an option to extend or terminate the lease, the Company reflects the option in the lease term if it is reasonably certain it will exercise the option.

Stock-based Compensation Expense

The Company's stock-based compensation program grant awards which have included stock options, restricted stock awards ("RSAs"), restricted stock unit awards ("RSUs"), a market-based option award, and shares issued under the Company's 2015 employee stock purchase plan ("ESPP"). The Company accounts for stock-based compensation awards in accordance with ASC Topic 718, *Compensation—Stock Compensation* ("ASC 718"). ASC 718 requires all stock-based payments to employees, directors and non-employees to be recognized as expense in the consolidated statements of operations based on their grant date fair values. The Company estimates the grant date fair value of each option award

using the Black-Scholes option-pricing model. The fair value of the Company's RSAs and RSUs is based on market value of the Company's common stock on the date of grant. For awards subject to service-based vesting conditions, the Company recognizes the stock-based compensation expense on a straight-line basis over the requisite service period. If an employee or non-employee service requirement is concluded to be non-substantive, the stock-based compensation expense would be expensed immediately. Forfeitures are recorded as they occur.

Prior to 2019, the Company accounted for stock-based payments issued to non-employees in accordance with ASC Topic 505-50, *Equity Based Payments to Non-Employees*. Stock-based payments issued to non-employees were initially recorded at their fair value, and were revalued at each reporting date and as the equity instruments vest and were recognized as expense over the related service period.

For stock options granted to employees and to members of the Company's board of directors for their services on the board of directors, the Company estimates the grant date fair value of each option award using the Black-Scholes option-pricing model. The Black-Scholes option pricing model requires the input of certain subjective assumptions, including (1) the expected stock price volatility, (2) the calculation of expected term of the award, (3) the risk-free interest rate, and (4) the expected dividend yield. Because there had been no public market for the Company's common stock prior to its initial public offering, there was a lack of company-specific historical and implied volatility data. Accordingly, the Company based its estimates of expected volatility on the historical volatility of a group of similar companies that are publicly traded. The Company calculates historical volatility based on a period of time commensurate with the expected term. The Company computes expected volatility based on the historical volatility of a representative group of companies with similar characteristics to the Company, including their stages of product development and focus on the life science industry. The Company uses the simplified method as prescribed by the Securities and Exchange Commission's Staff Accounting Bulletin No. 107, *Share-Based Payment*, to calculate the expected term for options granted to employees as the Company does not have sufficient historical exercise data to provide a reasonable basis upon which to estimate the expected term. For options granted to non-employees, the Company utilizes the contractual term of the arrangement as the basis for the expected term. The Company determines the risk-free interest rate based on a treasury instrument whose term is consistent with the expected term of the stock options. The Company uses an assumed dividend yield of zero as the Company has never paid dividends and does not have current plans to pay any dividends on its common stock.

In 2014, certain of the Company's stock option agreements allowed for the exercise of unvested awards. The unvested shares were subject to repurchase by the Company if the employees ceased to provide service to the Company, with or without cause. As such, the Company did not treat the exercise of unvested options as a substantive exercise. The Company recorded the proceeds from the exercise of unvested stock options as a liability in the consolidated balance sheets. The liability for unvested common stock subject to repurchase was reclassified into stockholders' equity as the shares vested. As of June 30, 2018, the early exercise stock options were fully vested.

RSAs are subject to repurchase rights. Accordingly, the Company has recorded the proceeds from the issuance of restricted stock as a liability in the consolidated balance sheets. The restricted stock liability is reclassified into stockholders' equity as the restricted stock vests.

For market-based awards, the Company recognizes the fair value of the market-based options over the earlier of the derived service period, pursuant to a Monte-Carlo simulation model, or when the market-based vesting conditions are met. The Company estimates an award's derived service period based on the best estimate of the period over which an award's vesting condition(s) will be achieved. If the market-based vesting conditions are met ahead of the derived service period, the expense will be accelerated. If the market-based vesting conditions are not met and the market-based award is cancelled, the expense will not be reversed unless the market-based award is forfeited.

If factors change or different assumptions are used, the Company's stock-based compensation expense could be materially different in the future.

Success Payments, Research Funding Payments and Notes Payables

Certain arrangements require the Company to make payments, if and when, the Company's market capitalization reaches specified thresholds for a specific period of time or upon a sale of the Company for consideration in excess of those thresholds or above a specific amount. The payments were historically accounted for under the provisions of ASC Topic 505-50 and as of January 1, 2019, are accounted for under the provisions of ASC 718, whereby the Company recognizes the expense and liability when it becomes probable that the amounts will become due. The Company records this expense as a research and development expense in its consolidated statements of operations. The arrangements and payments are described more fully in Note 8.

The payments are payable in either cash, common stock or promissory notes payable, depending upon the licensor and the Company's election. If the Company elects to issue a promissory note relating to contractual obligations, the promissory note bears interest at 4.8% per annum. Outstanding principal and accrued interest on the promissory notes are typically payable on the earlier of five months or a specified period of time following a Company sale or change of control event, subject to certain exceptions.

Income taxes

Income taxes are recorded in accordance with ASC Topic 740, *Income Taxes* ("ASC 740"), which provides for deferred taxes using an asset and liability approach. Under this method, deferred tax assets and liabilities are determined based on the difference between the financial reporting and the tax reporting basis of assets and liabilities and are measured using the enacted tax rates and laws that are expected to be in effect when the differences are expected to reverse. The Company provides a valuation allowance against net deferred tax assets unless, based upon the weight of available evidence, it is more likely than not that the deferred tax assets will be realized.

The Company accounts for uncertain tax positions in accordance with the provisions of ASC 740. When uncertain tax positions exist, the Company recognizes the tax benefit of tax positions to the extent that the benefit will more likely than not be realized. The determination as to whether the tax benefit will more likely than not be realized is based upon the technical merits of the tax position as well as consideration of the available facts and circumstances.

Comprehensive Loss

Comprehensive loss is comprised of net loss and other comprehensive income or loss. Comprehensive loss includes net loss as well as other changes in stockholders' equity that result from transactions and economic events other than those with stockholders. Comprehensive loss currently consists of net loss and changes in unrealized losses on marketable securities.

Concentrations of Credit Risk and Off-Balance Sheet Risk

The Company has no financial instruments with off-balance sheet risk such as foreign exchange contracts, option contracts, or other foreign hedging arrangements. Financial instruments that potentially subject the Company to a concentration of credit risk are cash, cash equivalents, marketable securities and receivables owed to the Company from collaboration partners. The Company's cash, cash equivalents and marketable securities are held in accounts at a financial institution that may exceed federally insured limits. The Company has not experienced any credit losses in such accounts and does not believe it is exposed to any significant credit risk on these funds.

Segment Information

Operating segments are defined as components of an enterprise about which separate discrete information is available for evaluation by the chief operating decision maker in deciding how to allocate resources and assess performance. The Company and the Company's chief operating decision maker, the Company's Chief Executive Officer, view the Company's operations and manage the Company's business as a single operating segment, which is the business of developing and commercializing genome editing technology.

Recent Accounting Pronouncements –Adopted

Leases

As discussed above, the Company adopted ASC 842, using the modified-retrospective transition method, effective January 1, 2019, pursuant to which the Company recognized a cumulative-effect adjustment of $0.8 million to the opening balance of accumulated deficit on January 1, 2019 associated with de-recognizing the net asset balance recorded in property and equipment, net and the offsetting construction financing lease liability related to the Company's headquarters which was previously accounted for under the built-to-suit guidance in ASC 840, *Leases* ("ASC 840"). This resulted in a reversal of $32.6 million from total assets and $33.4 million from total liabilities. All prior period balances are presented in accordance with ASC 840. As of January 1, 2019, the Company recorded a right-of-use asset of $19.5 million and lease liability of $19.7 million associated with the adoption of ASC 842. In addition, the Company elected to adopt the package of three practical expedients for leases that commenced prior to January 1, 2019, allowing it not to reassess (i) whether any expired or existing contracts contain leases, (ii) the lease classification for any expired or existing leases and (iii) the initial indirect costs for any existing leases. The Company did not elect the hindsight practical expedient which allows the Company to reassess the lease term as it was not relevant to the Company's leases.

Stock-Based Compensation Expense

Effective January 1, 2019, the Company adopted ASU No. 2018-07, *Compensation – Stock Compensation: Improvements to Nonemployee Share-Based Payment Accounting*, which simplified the accounting for share-based payments to non-employees by aligning it with the accounting for share-based payments to employees, with certain exceptions. There was no material impact to the Company's consolidated financial position, results of operation, or cash flows.

Recent Accounting Pronouncements – Issued But Not Yet Adopted

In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"), which modifies certain disclosure requirements on fair value measurements. The amendments regarding changes in unrealized gains and losses, the range and weighted average of significant unobservable inputs used to develop Level 3 fair value measurements and the narrative description of measurement uncertainty are required to be applied prospectively for only the most recent interim or annual period presented in the initial fiscal year of adoption. All other amendments are required to be applied retrospectively to all periods presented upon their effective date. ASU 2018-13 is effective for fiscal years beginning after December 15, 2019 and interim periods within those years. The Company does not anticipate a material impact to disclosures as a result of the adoption of ASU 2018-13.

In June 2016, the FASB issued ASU No. 2016-13, *Financial Instruments—Credit Losses* (Topic 326): *Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). The standard requires that a financial asset or a group of financial assets measured at amortized cost basis to be presented at the net amount expected to be collected. Under current GAAP, a company only considered past events and current conditions in measuring an incurred loss. Under ASU 2016-13, the information that a company must consider is broadened in developing an expected credit loss estimate for assets measured either collectively or individually. The use of forecasted information incorporates more timely information in the estimate of expected credit loss. The new guidance will be effective for annual and interim periods beginning after December 15, 2019. The guidance is applied using a modified retrospective, or prospective approach, depending on a specific amendment. The Company does not anticipate a material impact on its consolidated financial statements as a result of the adoption of ASU 2016-13.

In August 2018, the FASB issued ASU No. 2018-15, *Intangibles—Goodwill and Other-Internal-Use Software* (Topic 350): *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract* ("ASU 2018-15"), which aligns the requirements for capitalizing implementation costs incurred in a cloud computing arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use-software. ASU 2018-15 is effective for the Company for the fiscal years beginning after December 15, 2019 and interim periods within those years. This guidance will be applied prospectively

to all implementation costs incurred after the date of adoption. The Company does not anticipate a material impact on its consolidated financial statements as a result of the adoption of ASU 2018-15.

3. Cash Equivalents, Marketable Securities and Equity Securities

Cash equivalents, marketable securities and equity securities consisted of the following at December 31, 2019 (in thousands):

December 31, 2019	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash equivalents and marketable securities:				
Money market funds	$ 230,201	$ —	$ —	$ 230,201
U.S. Treasuries	71,348	20	—	71,368
Government agency securities	155,484	87	—	155,571
Equity securities included in other non-current assets:				
Corporate equity securities	3,667	—	—	3,667
Total	$ 460,700	$ 107	$ —	$ 460,807

Cash equivalents, marketable securities and equity securities consisted of the following at December 31, 2018 (in thousands):

December 31, 2018	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
Cash equivalents and marketable securities:				
Money market funds	$ 130,049	$ —	$ —	$ 130,049
U.S. Treasuries	208,754	—	(24)	208,730
Government agency securities	29,940	—	(5)	29,935
Equity securities included in other non-current assets:				
Corporate equity securities	3,667	—	—	3,667
Total cash equivalents and marketable securities	$ 372,410	$ —	$ (29)	$ 372,381

At December 31, 2019, the Company held three securities that were in an unrealized loss position. The aggregate fair value of securities held by the Company in an unrealized loss position for less than 12 months at December 31, 2019 was $26.6 million, and there were no securities held by the Company in an unrealized loss position for more than 12 months.

As of December 31, 2019, the Company did not intend to sell, and was not more likely than not required to sell, the debt securities in an unrealized loss position before recovery of their amortized cost bases. Furthermore, the Company has determined that there were no material changes in the credit risk of the debt securities. As a result, the Company determined it did not hold any securities with any other-than-temporary impairment as of December 31, 2019.

There were no realized gains or losses on available-for-sale securities during the years ended December 31, 2019 or 2018.

4. Fair Value Measurements

Assets measured at fair value on a recurring basis as of December 31, 2019 were as follows (in thousands):

Financial Assets	December 31, 2019	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash equivalents:				
Money market funds	$ 230,201	$ 230,201	$ —	$ —
U.S. Treasuries	7,982	7,982	—	—
Marketable securities:				
U.S. Treasuries	63,386	63,386	—	—
Government agency securities	155,571	155,571	—	—
Restricted cash and other non-current assets:				
Corporate equity securities	3,667	—	3,667	—
Money market funds	1,619	1,619	—	—
Total financial assets	$ 462,426	$ 458,759	$ 3,667	$ —

Assets and liabilities measured at fair value on a recurring basis as of December 31, 2018 were as follows (in thousands):

Financial Assets	December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Cash and cash equivalents:				
Money market funds	$ 130,049	$ 130,049	$ —	$ —
U.S. Treasuries	4,487	4,487	—	—
Marketable securities:				
U.S. Treasuries	204,243	204,243	—	—
Government agency securities	29,935	29,935	—	—
Restricted cash and other non-current assets:				
Corporate equity securities	3,667	—	3,667	
Money market funds	1,619	1,619	—	—
Total financial assets	$ 374,000	$ 370,333	$ 3,667	$ —

There were no transfers between fair value measurement levels during the years ended December 31, 2019 or 2018.

5. Property and Equipment, Net

Property and equipment, net consisted of the following (in thousands):

	As of December 31,	
	2019	2018
Laboratory equipment	$ 14,571	$ 10,892
Construction-in-progress	1,336	—
Leasehold improvements	1,042	289
Computer equipment	858	733
Furniture and office equipment	166	166
Software	118	118
Building	—	35,167
Total property and equipment	18,091	47,365
Less: accumulated depreciation	(7,204)	(7,133)
Property and equipment, net	$ 10,887	$ 40,232

The Company recorded $2.8 million, $3.3 million and $2.7 million in depreciation expense during the years ended December 31, 2019, 2018 and 2017, respectively.

See Note 7, “Leases” for additional information regarding ASC 842 adoption including derecognition of the building.

6. Accrued Expenses

Accrued expenses consisted of the following (in thousands):

	As of December 31,	
	2019	2018
Sublicensing and success payment expenses	$ 11,416	$ 3,750
Employee related expenses	4,971	5,201
Intellectual property and patent related fees	3,725	1,939
Professional service expenses	674	475
Process and platform development expenses	735	1,044
Other expenses	599	404
Total	$ 22,120	$ 12,813

7. Leases

The Company has multiple lease agreements for office, laboratory and manufacturing space with varying contractual terms set to expire between 2020 and 2025. Typically, base rent payments commence at the beginning of each lease term and continue through the term of the respective lease. Additionality, base rent is also subject to increases over the term of the lease. The Company has two significant leases for office and laboratory space located in Cambridge, Massachusetts that are summarized below. In prior periods, the Company accounted for leases as operating leases under ASC 840, *Leases* (“ASC 840”) and recognized straight-line rent expense over the remaining non-cancellable lease terms. As part of its adoption of ASC 842, effective January 1, 2019, the Company elected to apply the package of practical expedients which, among other things, allowed the Company to carry forward its existing operating lease classification under ASC 840. Additionally, the Company recorded right-of-use assets and lease liabilities for these operating leases on the effective date.

The Company’s leases are included on its consolidated balance sheet as follows (in thousands):

	As of	
	December 31, 2019	January 1, 2019
Right-of-use assets	$ 28,761	$ 19,461
Operating lease liabilities, current	$ (5,804)	$ (3,848)
Operating lease liabilities, noncurrent	$ (23,277)	$ (15,909)

During the year ended December 31, 2019, the Company recorded $5.6 million related to operating lease costs and $1.0 million related to variable year costs associated with the Company's operating leases under ASC 842. Under ASC 840, the Company incurred rent expense of approximately $1.8 million and $1.2 million during the years ended December 31, 2018 and 2017, respectively.

Maturities of the Company's lease liabilities in accordance with ASC 842 as of December 31, 2019 were as follows (in thousands):

Maturity of lease liabilities:	Year Ended December 31, 2019
2020	$ 8,150
2021	$ 8,041
2022	$ 7,848
2023	$ 7,279
2024	$ 3,484
Thereafter	$ 290
Total minimum lease payments	$ 35,092
Less: imputed interest	$ (6,011)
Total operating lease liabilities at December 31, 2019	$ 29,081

The weighted-average remaining lease terms are 4.2 years and the weighted-average discount rate is 8.9%.

Hurley Street

In 2016, the Company entered into a lease agreement for 59,783 square feet of office and laboratory space located on Hurley Street in Cambridge, Massachusetts. The term of the lease began on October 1, 2016 and continues until October 2023. In connection with the lease and as a security deposit, the Company deposited with the landlord a letter of credit in the amount of approximately $1.6 million. Subject to the terms of the lease and certain reduction requirements specified therein, the $1.6 million security deposit may decrease over time. The letter of credit, which is collateralized by the Company, is recorded in restricted cash and other non-current assets in the accompanying consolidated balance sheets as of December 31, 2019 and December 31, 2018. The Company subleased approximately 10,000 square feet of the Hurley Street premises pursuant to a sublease, which commenced in February 2017 and terminated in June 2018.

The Company has the option to extend the lease for an additional five-year term at market-based rates. The base rent payments commenced in November 2016 and continue through the term of the lease and are subject to increases over the term of the lease.

One Main

In December 2019, the Company entered into a lease agreement for 31,571 square feet of office space located on One Main Street in Cambridge, Massachusetts. The term of the lease will begin on January 15, 2020 and continues until January 2025. In connection with the lease and as a security deposit, the Company issued a letter of credit in the amount of approximately $0.8 million in January 2020.

The Company has the option to extend the lease for an additional five-year term at market-based rates. The base rent payments will commence in January 2020 and continue through the term of the lease and are subject to increases

over the term of the lease.

8. Commitments and Contingencies

The Company is a party to a number of license agreements under which the Company licenses patents, patent applications and other intellectual property from third parties. As such, the Company is obligated to reimburse licensors for various costs including upfront licenses fees, annual license fees, certain licensor expense reimbursements, success payments, research funding payments, and milestones triggerable upon certain development, regulatory, and commercial events as well as royalties on future products. These contracts are generally cancellable, with notice, at the Company's option and do not have significant cancellation penalties.

Broad Sponsored Research Agreement

In June 2018, the Company entered into a sponsored research agreement (the "Sponsored Research Agreement") with The Broad Institute, Inc. ("Broad"). The Sponsored Research Agreement provides for Broad to conduct research useful or relevant to genome editing in the field of genomic medicines for the prevention or treatment of human disease with funding from the Company. Under the Sponsored Research Agreement, Broad granted to the Company an exclusive right of first negotiation for licenses from Broad with respect to patentable inventions developed by Broad in the course of the sponsored research, subject to certain limitations and retained rights ("Sponsored Invention Licenses").

Under the Sponsored Research Agreement, the Company is obligated to make Market Cap Research Funding payments in the event the Company's market capitalization reaches specified thresholds ranging from a mid-nine digit dollar amount to a low-eleven digit dollar amount or Company Sale Research Funding payments in the event of a Company sale for consideration ranging from a mid-nine digit dollar amount to a low-eleven digit dollar amount. In connection with entering into the Sponsored Research Agreement, the Company confirmed that the first two research payments of $5.0 million and $7.5 million, respectively, were due and payable to Broad. In connection with the Initial Research Payments, the Company issued promissory notes to Broad that it settled in common stock in June 2018. The $12.5 million in research funding expense was recorded to research and development expenses during the year ended December 31, 2018. The Company fully settled the outstanding principal and accrued interest on the Initial Research Notes by issuing 330,617 shares of common stock to Broad in June 2018.

Other than the Initial Research Payments, the Company is not required to make additional Research Funding Payments if the Company, whether directly or through its affiliates or sublicensees, is not researching, developing, or commercializing products based on or incorporating inventions exclusively licensed to the Company from Broad under Sponsored Invention Licenses or based on or incorporating CRISPR technology owned, co-owned, or controlled by Broad and otherwise licensed to the Company, subject to certain exclusions (an "Applicable Product" and such exemption from payment, the "Funding Exemption"). In the event that the Company, whether directly or through its affiliates or sublicensees, later resumes research, development, or commercialization of an Applicable Product within a specified period of time, any Research Funding Payment that was not paid to Broad as a result of the Funding Exemption shall become payable. Under the Sponsored Research Agreement, the Company is obligated to pay up to $125.0 million to Broad in Research Funding, inclusive of the Initial Research Payments, and in no event shall the aggregate amount of all Research Funding Payments exceed such amount.

Unless the Company has undergone a change in control, Market Cap Research Funding is payable by the Company in cash, common stock, or in the form of promissory notes, which may be settled in shares of common stock at the election of the Company. Following a change in control of the Company, Company Sale Research Funding is required to be made in cash. The Sponsored Research Agreement is terminable by each party upon the occurrence of specified bankruptcy events of the other party and otherwise will continue in effect until the later of the expenditure of all Research Funding Payments by Broad and such time as the Company has no further rights of first negotiation for Sponsored Invention Licenses, unless otherwise mutually agreed between the parties.

Cas9-I License Agreement

In October 2014, the Company entered into an agreement (the "Cas9-I License Agreement") with Broad and the President and Fellows of Harvard College ("Harvard") to license certain patent rights owned or co-owned by, or among, Broad, the Massachusetts Institute of Technology ("MIT"), and Harvard (collectively, the "Institutions"). Consideration for the granting of the license included the payment of an upfront license issuance fee of $0.2 million and the issuance of 561,531 shares of the Company's common stock. The Institutions are collectively entitled to receive clinical and regulatory milestone payments totaling up to $14.8 million in the aggregate per licensed product approved in the United States, European Union, and Japan for the treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. If the Company undergoes a change of control during the term of the license agreement, the clinical and regulatory milestone payments will be increased by a certain percentage in the mid-double digits. The Company is also obligated to make additional payments to the Institutions, collectively, of up to an aggregate of $54.0 million upon the occurrence of certain sales milestones per licensed product for the treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. The Institutions are collectively entitled to receive clinical and regulatory milestone payments totaling up to $4.1 million in the aggregate per licensed product approved in the U.S. and at least one jurisdiction outside the U.S. for the treatment of a human disease based on certain criteria. The Company is also obligated to make additional payments to the Institutions, collectively, of up to an aggregate of $36.0 million upon the occurrence of certain sales milestones per licensed product for the treatment of a rare disease meeting certain criteria. The Institutions are entitled to receive from the Company nominal annual license fees and a mid-single digit percentage royalties on net sales of products for the prevention or treatment of human disease and ranging from low single digit to high single digit percentage royalties on net sales of other products and services, made by the Company, its affiliates, or its sublicensees. The royalty percentage depends on the product and service, and whether such licensed product or licensed service is covered by a valid claim within the certain patent rights that the Company licenses from the Institutions.

Cpf1 License Agreement

In December 2016, the Company entered into the Cpf1 License Agreement with Broad, for specified patent rights (the "Cpf1 Patent Rights") related primarily to Cas12a (formerly known as Cpf1) compositions of matter and their use for gene editing. Concurrently with entering into the Cpf1 License Agreement, the Company, Broad, and Harvard amended and restated the Cas9-I License Agreement as described below and the Company and Broad entered into the Cas9-II License Agreement for specified patent rights (the "Cas9-II Patent Rights") related primarily to certain Cas9 compositions of matter and their use for genome editing. The Company paid an upfront fee in aggregate of $16.5 million under these agreements which was recorded in research and development expenses during 2016. The upfront fee was fully settled in 2017, partially by issuing 479,270 shares of common stock.

Pursuant to the Cpf1 License Agreement, Broad, on behalf of itself, Harvard, MIT, Wageningen, and the University of Tokyo ("UTokyo" and, together with Broad, Harvard, Massachusetts Institute of Technology ("MIT"), and Wageningen University ("Wageningen"),(the "Cpf1 Institutions") granted the Company an exclusive, worldwide, royalty-bearing, sublicensable license to the Cpf1 Patent Rights, to make, have made, use, have used, sell, offer for sale, have sold, export and import products in the field of the prevention or treatment of human disease using gene therapy, editing of genetic material, or targeting of genetic material, subject to certain limitations and retained rights (collectively, the "Cpf1 Exclusive Field"), as well as a non-exclusive, worldwide, royalty-bearing sublicensable license to the Cpf1 Patent Rights for all other purposes, subject to certain limitations and retained rights. The Company is obligated to use commercially reasonable efforts to research, develop, and commercialize products in the Cpf1 Exclusive Field. The Company is also required to achieve certain development milestones within specified time periods for products covered by the Cpf1 Patent Rights, with Broad having the right to terminate the Cpf1 License Agreement if the Company fails to achieve these milestones within the required time periods.

Broad and Wageningen are collectively entitled to receive clinical and regulatory milestone payments totaling up to $20.0 million in the aggregate per licensed product approved in the United States, European Union, and Japan for the prevention or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. The Company is also obligated to make additional payments to Broad and Wageningen, collectively, of up to an aggregate of $54.0 million upon the occurrence of certain sales milestones per licensed product for the prevention

or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States. Broad and Wageningen are collectively entitled to receive clinical and regulatory milestone payments totaling up to $6.0 million in the aggregate per licensed product approved in the United States, European Union and Japan for the prevention or treatment of a human disease that afflicts fewer than a specified number of patients in the aggregate in the United States or a specified number of patients per year in the United States (an "Ultra-Orphan Disease"). The Company is also obligated to make additional payments to Broad and Wageningen, collectively, of up to an aggregate of $36.0 million upon the occurrence of certain sales milestones per licensed product for the prevention or treatment of an Ultra-Orphan Disease.

Broad and Wageningen, collectively, are entitled to receive, on a product-by-product and country-by-country basis, mid single-digit percentage royalty on net sales of licensed products for the prevention or treatment of human disease, and royalties on net sales of other licensed products and licensed services, made by the Company, its affiliates, or its sublicensees. The royalty percentage depends on the product and service, and whether such licensed product or licensed service is covered by a valid claim within the Cpf1 Patent Rights. If the Company is legally required to pay royalties to a third party on net sales of the Company's products because such third party holds patent rights that cover such licensed product, then the Company can credit up to a specified percentage of the amount paid to such third party against the royalties due to Broad and Wageningen in the same period. Such credit may not exceed 50% of the applicable royalties paid by the Company to the applicable third party. The Company's obligation to pay royalties will expire on a product-by-product and country-by-country basis upon the later of the expiration of the last to expire valid claim of the Cpf1 Patent Rights that covers each licensed product or service in each country or the tenth anniversary of the date of the first commercial sale of the licensed product or licensed service. If the Company sublicenses any of the Cpf1 Patent Rights to a third party, Broad and Wageningen, collectively, have the right to receive sublicense income, depending on the stage of development of the products or services in question at the time of the sublicense.

Under the Cpf1 License Agreement, Broad and Wageningen are also entitled, collectively, to receive success payments in the event the Company's market capitalization reaches specified thresholds (the "Cpf1 Market Cap Success Payments") or a Company sale for consideration in excess of those thresholds (the "Cpf1 Company Sale Success Payments" and, collectively with the Cpf1 Market Cap Success Payments, the "Cpf1 Success Payments"). The Cpf1 Success Payments payable to Broad and Wageningen are triggered when the Company's market capitalization reaches certain amounts ranging from $750.0 million to $10.0 billion for a specified period of time, and collectively the Cpf1 Success Payments will not exceed, in aggregate, $125.0 million, which maximum amount would be payable only if the Company reaches a market capitalization threshold of $10.0 billion and has at least one product candidate covered by a claim of a patent right licensed to the Company under either the Cpf1 License Agreement or the Cas9-I License Agreement that is or was the subject of a clinical trial pursuant to development efforts by the Company or any Company affiliate or sublicensee. The Cpf1 Market Cap Success Payments are payable by the Company in cash or in the form of promissory notes. Following a change in control of the Company, Cpf1 Market Cap Success Payments are required to be made in cash. Cpf1 Company Sale Success Payments are payable solely in cash. The Company triggered the first and second Cpf1 Success Payments during 2017 when the Company's market capitalization reached $750 million and $1.0 billion, respectively. The Company issued promissory notes for both Success Payments that were settled in 271,347 shares and 150,606 shares of common stock in August 2017 and January 2018, respectively.

Unless terminated earlier, the term of the Cpf1 License Agreement will expire on a country-by-country basis, upon the expiration of the last to expire valid claim of the Cpf1 Patent Rights in such country. The Company has the right to terminate the Cpf1 License Agreement at will upon four months' written notice to Broad. Either party may terminate the Cpf1 License Agreement upon a specified period of notice in the event of the other party's uncured material breach of a material obligation, such notice period varying depending on the nature of the breach. Broad may terminate the Cpf1 License Agreement immediately if the Company challenges the enforceability, validity, or scope of any Cpf1 Patent Right or assist a third party to do so, or in the event of the Company's bankruptcy or insolvency.

Amendment and Restatement of Cas9-I License Agreement

In December 2016, the Company amended and restated the Cas9-I License Agreement (such agreement, as amended, the "Amended and Restated Cas9-I License Agreement") to exclude additional fields from the scope of the exclusive license previously granted to the Company, to make the exclusive license to three targets become

non-exclusive, subject to the limitation that each of Broad and Harvard would only be permitted to grant a license to only one third party at a time with respect to each such target within the field of the exclusive license, and to revise certain provisions relating to the rights of Harvard and Broad to grant further licenses under specified circumstances to third parties that wish to develop and commercialize products that target a particular gene and that otherwise would fall within the scope of the exclusive license under this agreement, so that Harvard and Broad together would have rights substantially similar to the equivalent rights possessed by Broad under the Cpf1 License Agreement to designate gene targets for which the designating institution, whether alone or together with an affiliate or third party, has an interest in researching and developing products that would otherwise be covered by rights licensed by Harvard and/or Broad to the Company under this agreement, the Cpf1 License Agreement or the Cas9-II License Agreement. In March 2017, the Company and Harvard and Broad further amended the Amended and Restated Cas9-I License Agreement to (i) grant an exclusive license from Broad to the Company with respect to certain patent rights that The Rockefeller University ("Rockefeller") has or may have rights in and to and for which Rockefeller has, under a certain inter-institutional agreement that Broad and Rockefeller entered into in February 2017, appointed Broad as sole and exclusive agent for the purposes of licensing and (ii) provide to Rockefeller certain rights, including with respect to patent enforcement, indemnification, insurance, confidentiality, reservation of certain rights, and publicity, that are generally consistent with those granted to Broad, Harvard, MIT and the Howard Hughes Medical Institute under the Amended and Restated Cas9-I License Agreement.

Cas9-II License Agreement

Pursuant to the Cas9-II License Agreement, Broad, on behalf of itself, MIT, Harvard, and the University of Iowa Research Foundation, granted the Company an exclusive, worldwide, royalty bearing sublicensable license to certain of the Cas9-II Patent Rights as well as a non-exclusive, worldwide, royalty-bearing sublicensable license to all of the Cas9-II Patent Rights, in each case on terms substantially similar to the licenses granted to the Company under the Cpf1 License Agreement except, among other things, for the following commitment amounts. Under the Cas9-II License Agreement, the Company will pay an upfront license fee in a low seven digit dollar amount and will have to pay an annual license maintenance fee. The Company is obligated to pay clinical and regulatory milestone payments per licensed product approved in the United States, European Union and Japan for the prevention or treatment of a human disease that afflicts at least a specified number of patients in the aggregate in the United States totaling up to $3.7 million in the aggregate, and sales milestone payments for any such licensed product totaling up to $13.5 million in the aggregate. In addition, the Company is obligated to pay clinical and regulatory milestone payments totaling up to $1.1 million in the aggregate per licensed product approved in the United States and the European Union or Japan for the prevention or treatment of a human disease that afflicts fewer than a specified number of patients in the United States, plus sales milestone payments of up to $9.0 million for any such licensed product. Consistent with the Cpf1 License Agreement, the licensors are entitled to royalties on net sales of products for the prevention or treatment of human disease and other products and services made by the Company, its affiliates, or its sublicensees. Royalties due under other license agreements are creditable against these royalties up to a specified amount in the same period. Lastly, Broad is entitled to receive success payments if the Company's market capitalization reaches specified thresholds ascending from $1.0 billion to $9.0 billion or upon a sale of the Company for consideration in excess of those thresholds. The potential success payments range from a low seven digit dollar amount to a low eight digit dollar amount and will not exceed, in aggregate, $30.0 million, which maximum amount would be owed only if the Company reaches a market capitalization threshold of $9.0 billion and has at least one product candidate covered by a claim of a patent right licensed to the Company under either the Cas9-I License Agreement or the Cas9-II License Agreement that is or was the subject of a clinical trial pursuant to development efforts by the Company or any Company affiliate or sublicensee. The Company triggered the first Success Payment under the Cas9-II License Agreement during the fourth quarter of 2017 when the Company's market capitalization reached $1.0 billion, which the Company settled by issuing 75,303 shares of its common stock in January 2018.

Licensor Expense Reimbursement

The Company is obligated to reimburse to Broad and Harvard for expenses incurred by each of them associated with the prosecution and maintenance of the patent rights that the Company licenses from them pursuant to the license agreement by and among the Company, Broad and Harvard, including the interference and opposition proceedings involving patents licensed to the Company under the license agreement, and other license agreements between the

Company and Broad. As such, the Company anticipates that it has a substantial commitment in connection with these proceedings until such time as these proceedings have been resolved, but the amount of such commitment is not determinable. The Company incurred an aggregate of $13.5 million, $14.2 million and $18.2 million in expense during the years ended December 31, 2019, 2018 and 2017, respectively, for such reimbursement.

Litigation

The Company is not a party to any litigation and did not have contingency reserves established for any litigation liabilities as of December 31, 2019 or 2018.

9. Collaboration and Profit-Sharing Agreements

The Company has entered into multiple collaboration and strategic alliances with third parties that typically involve research and development services in exchange for upfront fees, option payments, milestone payments and royalty payments to or from the Company.

Collaboration Revenue

As of December 31, 2019, the Company's contract liabilities were primarily related to the Company's collaboration with Juno Therapeutics and strategic alliance with Allergan. The following table presents changes in the Company's accounts receivable and contract liabilities for the year ended December 31, 2019 (in thousands):

For the year ended December 31, 2019	Balance at December 31, 2018	Additions	Deductions	Balance at December 31, 2019
Accounts receivable	$ 30	$ 418	$ (30)	$ 418
Contract liabilities:				
Deferred revenue	$ 131,326	$ 75,500	$ (20,105)	$ 186,721

During the three and twelve months ended December 31, 2019, the Company recognized the following collaboration revenue (in thousands):

	Three Months Ended	Year Ended
Revenue recognized in the period from:	December 31, 2019	
Amounts included in deferred revenue at the beginning of the period	$ 4,715	$ 11,448
Performance obligations satisfied in previous periods	$ 1,261	$ 2,455

Juno Therapeutics Collaboration Agreement

In May 2015, the Company entered into a collaboration and license agreement (the "Collaboration Agreement") with Juno Therapeutics and in May 2018 the Company and Juno Therapeutics entered into an amended and restated collaboration and license agreement (the Collaboration Agreement, as amended and restated, the "2018 Amended Collaboration Agreement"). The collaboration was initially focused on the research and development of engineered T cells with chimeric antigen receptors and T cell receptors that have been genetically modified to recognize and kill other cells. In November 2019 (the "Amendment Date"), the Company amended and restated the 2018 Amended Collaboration and entered into a license agreement (the 2018 Amended Collaboration Agreement, as amended and restated, and collectively with the license agreement, the "2019 Amended Collaboration Agreement") to focus on the research, development, and commercialization of autologous and allogenic alpha-beta T cell medicines for the treatment of all diseases, subject to certain exceptions.

2018 Amended Collaboration Agreement

Pursuant to the 2018 Amended Collaboration Agreement, the Company and Juno Therapeutics were pursuing

research in accordance with a mutually agreed upon research plan across four research areas. The 2018 Amended Collaboration Agreement increased the scope of the research plan from three to four research areas. The Company's research and development responsibilities under the research plan were related to generating genome editing reagents that modify gene targets selected by Juno Therapeutics. Except with respect to the Company's obligations under the mutually agreed upon research plan, Juno Therapeutics had sole responsibility, at its own cost, for the worldwide research, development, manufacturing and commercialization of products within each of the four research areas for the diagnosis, treatment or prevention of any cancer in humans through the use of engineered T-cells, excluding the diagnosis, treatment or prevention of medullary cystic kidney disease 1 (the "Exclusive Field"). The initial term of the research program commenced on May 26, 2015 and continued for five years ending on May 26, 2020 (the "Initial Research Program Term").

Under the terms of the Collaboration Agreement, the Company granted to Juno Therapeutics during the Initial Research Program Term a nonexclusive research license solely for the purpose of conducting specific research related activities as defined by the research plan. Pursuant to the terms of the 2018 Amended Collaboration Agreement, the license rights granted to Juno Therapeutics were expanded to incorporate the fourth research area (together, the initial research license granted per the terms of the Collaboration Agreement and the incremental research license granted per the terms of the 2018 Amended Collaboration Agreement, the "Research License").

The Company granted to Juno Therapeutics exclusive worldwide development and commercialization licenses in the Exclusive Field, specifically as it relates to certain targets or products selected by Juno Therapeutics in each of the four research areas. Furthermore, for two of the original research areas under the terms of the Collaboration Agreement, the Company granted to Juno Therapeutics a non-exclusive worldwide license to use certain genome editing reagents that were created under the agreement in all fields outside the Exclusive Field ("the Non-Exclusive Field") specifically as it relates to certain targets selected by Juno Therapeutics, if the genome editing reagents were previously incorporated into an investigational new drug application filed by Juno Therapeutics in the Exclusive Field (together, the license in the Exclusive Field and the license in the Non-Exclusive Field are referred to as the "Development and Commercialization License" for each particular research area).

Under the terms of the Collaboration Agreement, the Company received a $25.0 million up-front, non-refundable, non-creditable cash payment. In connection with the entry into the 2018 Amended Collaboration Agreement, the Company received an additional $5.0 million up-front, non-refundable, non-creditable cash payment. In addition, Juno Therapeutics was obligated to pay to the Company research and development funding over the Initial Research Program Term across the four research areas consisting primarily of funding for up to a specified maximum number of full-time equivalents personnel each year. Consistent with the terms of the Collaboration Agreement, under the terms of the 2018 Amended Collaboration Agreement, there was no incremental compensation due to the Company with respect to the Development and Commercialization License granted to Juno Therapeutics associated with the first target or product, as applicable, designated by Juno Therapeutics within each of the four research areas. However, for two of the research areas Juno Therapeutics had the option to purchase up to three additional Development and Commercialization Licenses associated with other gene targets for an additional fee of $2.5 million per target. In addition, Juno Therapeutics would have been required to make certain milestone payments to the Company upon the achievement of specified development, regulatory and commercial events. Royalties would have been paid on a licensed product-by-product and country-by-country basis from the date of the first commercial sale of each product in a country until the expiration date.

The Company achieved two $2.5 million development milestones under the Collaboration Agreement resulting from technical progress in a research program in each of May 2016 and July 2017. The Company also achieved two additional $2.5 million development milestones under the 2018 Amended Collaboration Agreement resulting from technical progress in a research program in May 2018.

The Company evaluated the 2018 Amended Collaboration Agreement in accordance with the provisions of ASC 606. The Company accounted for the amendment resulting from the 2018 Amended Collaboration Agreement as a modification to the original contract and not as a separate contract. The Company identified the following performance obligations under the modified arrangement: (i) Research License and the related research and development services during the Initial Research Program Term (the "Research License and Related Services"), (ii) four material rights related

to the first Development and Commercialization Licenses related to each of the four research areas (each, a "First Development and Commercialization License Material Right") and (iii) six material rights related to the option to purchase up to three additional Development and Commercialization Licenses for two of the research areas (each, an "Additional Development and Commercialization License Material Right"). The rights to be conveyed to Juno Therapeutics pursuant to each of the Development and Commercialization Licenses extend exclusively to an individual target or product, as applicable; therefore, control is deemed to be transferred upon the designation by Juno Therapeutics of the specific target or product, as applicable, whereupon the license becomes effective upon Juno Therapeutics exercising their option.

Through the date of the 2018 Amended Collaboration Agreement, the Company had recognized approximately $12.3 million of revenue associated with the Research License and Related Services which was excluded from the modification date transaction price. The total transaction price associated with the remaining consideration based on the 2018 Amended Collaboration Agreement was determined to be $40.7 million, consisting of: (i) $30.0 million in upfront payments (ii) $2.9 million of remaining research and development funding and (iii) $7.7 million of milestones payments received by the Company that were not yet recognized as revenue. The Company utilized the most likely amount method to determine the amount of research and development funding to be received. The outstanding milestones payments were fully constrained.

The transaction price was allocated to the performance obligations based on the relative estimated standalone selling prices of each performance obligation or, in the case of certain variable consideration, to one or more performance obligations. The transaction price allocated to the Research License and Related Services was $10.7 million. The Company recognized revenue related to amounts allocated to the Research License and Related Services as the underlying services were performed using a proportional performance model. The Company measured proportional performance based on full time employee hours relative to projected full time employee hours to complete the research services which best reflects the progress towards satisfaction of the performance obligation. The remaining transaction price of $30.0 million was allocated to the material rights. Revenue related to each of the material rights would have been recognized upon the earlier of when the respective options were exercised or when the respective options lapse. None of the options associated with the material rights had been exercised or had lapsed prior to the execution of the 2019 Amended Collaboration Agreement.

2019 Amended Collaboration Agreement

The 2019 Amended Collaboration Agreement replaced the 2018 Amended Collaboration Agreement and, at the Company's discretion, it may develop non-alpha-beta T-cell therapies, while expanding Juno Therapeutics' permitted uses of gene edited alpha-beta T-cells beyond oncology. Pursuant to the 2019 Amended Collaboration Agreement, the Company may develop genome editing tools that, following the exercise of its option and the Company's grant of a license, Juno Therapeutics may use in its development of gene edited alpha-beta T-cell therapies and certain other T-cells derived from pluripotent stem cells or any other precursor cells for the treatment of all diseases, subject to certain exceptions (the "Juno Field"). The initial term of the 2019 Amended Collaboration Agreement is five years, which is subject to two one-year extension periods. During the term, including the extension periods, the Company may not alone, or with a third party, research, develop, manufacture, or commercialize a product in the Juno Field.

At the Company's discretion it can develop genome editing tools specific to a gene target and enzyme combination (or a "Program"). The Company may then present a Program to Juno Therapeutics for Juno Therapeutics to evaluate against predefined criteria. To assess the Programs prior to opt-in, the Company granted Juno Therapeutics a non-exclusive perpetual research license in the Juno Field. Juno Therapeutics has the option to obtain an exclusive, worldwide, development and commercialization license to each of the Programs in the Juno Field for a nominal option exercise fee. If Juno Therapeutics fails to exercise its option during the contractually defined option period, the Company will retain all rights to such Program. Upon exercising an option, Juno Therapeutics has sole responsibility, at its own cost, for the worldwide research, development, manufacturing and commercialization of its products. Juno Therapeutics has the right to terminate the 2019 Amended Collaboration Agreement at any time upon no less than six months prior written notice.

The development and commercialization licenses granted to Juno Therapeutics are subject to the terms and

conditions of a license agreement that was entered into on the same day as the 2019 Amended Collaboration Agreement. Pursuant to the license agreement, Juno Therapeutics must use commercially reasonable efforts and meet certain regulatory and commercial diligence requirements. The license agreement provided that the Company would manufacture clinical grade materials through a Phase 1 clinical trial if requested by Juno Therapeutics at an incremental cost to be negotiated by the parties. Per the termination provisions of the license agreement, Juno Therapeutics has the right to terminate the agreement either on a licensed product-by-product basis or in its entirety for any reason at any time upon ninety days prior written notice. If Juno Therapeutics terminates the license agreement without cause, the exclusive licenses granted to Juno Therapeutics automatically revert back to the Company.

On a product-by-product basis, the Company is eligible to receive up to $27.5 million in development milestones and $107.5 million in regulatory milestones. The Company is also eligible to receive up to an aggregate of $60.0 million for the first two licensed products to reach certain sales milestones. The Company is entitled to a high-single digit to low double-digit percentage of royalties on net sales of licensed products, subject to reductions in certain circumstances, through the later of the expiration of the patent(s) related to the licensed products or six years post-first commercial sale of such licensed products.

The Company received a $70.0 million up-front, non-refundable, non-creditable cash payment in connection with the execution of the 2019 Amended Collaboration Agreement. The Company also received an additional $0.5 million for the first development and commercialization license (the “First 2019 Development and Commercialization License”) which was delivered to Juno Therapeutics at the onset of the arrangement.

The Company evaluated the 2019 Amended Collaboration Agreement and concluded that the collaboration agreement and licensing agreement qualify as a contract with a customer under ASC 606 as one combined arrangement. The contract modification was accounted for on a prospective basis as if it were a termination of the existing contract and the creation of a new contract since the promised goods and services were distinct from the goods and services that were transferred on or before the effective date of the amendment.

The Company has identified the following performance obligations under the 2019 Amended Collaboration Agreement: (i) First 2019 Development and Commercialization License and (ii) seventeen material rights for additional development and commercialization licenses for other Programs. The Company also evaluated the (i) the research license, (ii) contract term extensions, (iii) clinical supply arrangement, (iv) participation by employees on the oversight committee, alliance and technology transfer teams and (v) certain intellectual property rights and concluded that none of these met the definition of a performance obligation as a result of the promise being quantitively and qualitatively immaterial in the context of the arrangement or the promise did not convey a material right to Juno Therapeutics. The Company also concluded that there was not an implicit promise to perform research and development services.

As of Amendment Date and December 31, 2019, the total transaction price was approximately $102.5 million comprised of the following: (i) $70.0 million amendment fee, (ii) $0.5 million related to the exercise fee for the First 2019 Development and Commercialization License and (iii) $32.0 million in remaining deferred revenue balance that was not recognized pursuant to the 2018 Amended Collaboration Agreement. The Company utilizes the most likely amount method to estimate any development and regulatory milestone payments to be received as well as extension term fees. As of December 31, 2019, there were no milestones or extension term fees included in the transaction price. The Company considers the stage of development and the risks associated with the remaining development required to achieve the milestone, as well as whether the achievement of the milestone is outside the control of the Company or Juno Therapeutics. The outstanding milestone payments and extension term fees were fully constrained as of December 31, 2019, as a result of the uncertainty of whether any of the milestones will be achieved or the term would be extended. The Company has determined that any commercial milestones and sales-based royalties will be recognized when the related sales occurs. The Company reevaluates the transaction price at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur.

The Company concluded that rights and attributes of each of the development and commercialization licenses are identical for both the license granted at inception and the licenses that may be issued in the future upon exercise of the associated option. Each development and commercialization license is differentiated only by the Program to which it relates. The Company has considered the early stage of the science and the uncertainty of success and concluded that the

probability of scientific success and opt-in is equal amongst all Programs. In addition, each Program is multi-functional, and a combination of Programs can be utilized in the development of a product candidate. As such, the Company concluded that the standalone selling price of each material right is the same. The Company will recognize the transaction price allocated to each material right when the material right is exercised, lapsed or expired.

During the year ended December 31, 2019, the Company recognized $6.2 million of the $102.5 million transaction price upon delivery of the First 2019 Development and Commercialization License and deferred the remaining $96.3 million allocated to the material rights. As of December 31, 2019, the $96.3 million was classified as long-term in the accompanying consolidated balance sheets.

During the year ended December 31, 2019 and 2018, the Company incurred $11.3 million and $1.7 million in sublicense fees owed to certain of the Company's licensors in connection with the 2019 Amended Collaboration Agreement and 2018 Amended Collaboration Agreement, respectively, which the Company recorded as research and development expenses during such periods. The sublicense fee owned in connection with the 2019 Amended Collaboration Agreement is fully accrued in the consolidated balance sheet as of December 31, 2019.

Allergan Pharmaceuticals Strategic Alliance and Profit-Sharing Agreement

In March 2017, the Company entered into a Strategic Alliance and Option Agreement with Allergan to discover, develop, and commercialize new gene editing medicines for a range of ocular disorders (the "Allergan Agreement"). Over a seven-year research term, Allergan will have an exclusive option to exclusively license from the Company up to five collaboration development programs for the treatment of ocular disorders (each, a "CDP"), including the Company's Leber congenital amaurosis 10 ("LCA10") program and the related experimental therapeutic EDIT-101 to treat LCA10 (the "LCA10 Program").

Under the Allergan Agreement, the Company will use commercially reasonable efforts to develop at least five CDPs and deliver preclinical results and data meeting specified criteria with respect to each CDP (each, an "Option Package," and such criteria, the "Option Package Criteria") to Allergan. The list of proposed targets that may be subject to a CDP may be amended from time to time by mutual agreement of the Company and Allergan. The Company is responsible for the preparation and delivery of a written development plan for each particular CDP setting forth the discovery and research activities to be conducted which is subject to the approval of the alliance steering committee that was formed under the Allergan Agreement, comprised of three members from each of the Company and Allergan (the "Steering Committee"). The Company will maintain primary responsibility for the development efforts under each CDP. The Company is responsible for all research and development costs prior to the achievement of the Option Package Criteria. Allergan will have the ability for a defined period of time ("Initial Option Period") to exercise an option (each, an "Option") to obtain a worldwide right and license to the Company's background intellectual property and the Company's interest in the CDP intellectual property to develop, commercialize, make, have made, use, offer for sale, sell, and import any gene editing therapy product that results from such CDP during the term of the Allergan Agreement (a "Licensed Product") in any category of human diseases and conditions other than the diagnosis, treatment or prevention of any cancer in humans through the use of engineered T-cells and subject to specified other limitations. Allergan has the option to extend the Initial Option Period and require the Company to perform additional research and development services, subject to the payment of additional consideration. After exercise of an Option with respect to a CDP, with the exception of any CDP's where the Company has exercised its profit-sharing option, Allergan will be responsible for all development, manufacturing, and commercialization activities in connection with licensed products arising from such CDP, other than with respect to the LCA10 Program, if LCA10 is designated as a CDP. In July 2018, Allergan exercised its Option with respect to the LCA10 Program. In connection with such exercise, Allergan paid the Company $15.0 million. Following such exercise, the Company exercised its Profit-Share Election, as defined below, with respect to the LCA10 Program. Following such election, the LCA10 Program became subject to a Profit-Sharing Arrangement, as defined below, and the Company and an affiliate of Allergan entered into a separate profit-sharing agreement with respect to the Profit-Sharing Arrangement for the LCA10 Program in February 2019.

The initial term of the Allergan Agreement commenced on March 14, 2017 and continues for seven years ending on March 14, 2024 (the "Research Term"). If the Company has not delivered an Option Package, which includes the results and data from the CDP, for five CDPs that satisfy the Option Package Criteria, then the Research Term will

automatically extend by one-year increments until such obligation is satisfied, up to a maximum of ten years from March 2017.

The activities under the Allergan Agreement during the Research Term will be governed by the Steering Committee. The Steering Committee will review and monitor the direction of the development plan, evaluate and determine which targets are selected to become CDP, establish the Option Package Criteria for each CDP and evaluate the achievement of such criteria as well as oversee the development and commercialization activities after Allergan has licensed a CDP.

Under the terms of the Allergan Agreement, the Company received a $90.0 million up-front, non-refundable, non-creditable cash payment related to the Company's research and development costs for Option Packages for at least five CDPs and for reimbursement of the Company's past out of pocket costs with respect to the prosecution and defense of patents that it owns and in-licenses. Allergan has the option to purchase at least five development and commercialization licenses associated with CDPs that have satisfied the Option Package Criteria. The option exercise fee during the Initial Option Period is $15.0 million per CDP. If Allergan elects to extend the Initial Option Period, Allergan is required to pay an additional fee of $5.0 million to extend the option, at which point the Company is required to perform additional research services. If Allergan elects to exercise its option to a development and commercialization license after extending the Initial Option Period, Allergan must pay the Company the option exercise fee of $22.5 million, plus specified costs incurred by the Company in connection with the additional development work.

Following the exercise by Allergan of an Option with respect to a CDP, Allergan would be required to make certain milestone payments to the Company upon the achievement of specified development, product approval and launch and commercial events, on a CDP by CDP basis. On a CDP by CDP basis, for the first product in the first field to achieve the associated event, the Company is eligible to receive up to an aggregate of $42.0 million for development milestone payments and $75.0 million for product approval and launch milestone payments, in each case, for an indication in the field per CDP. In addition, the Company is eligible to receive additional development and product approval and launch milestone payments for subsequent products developed within two additional fields. The Company is also eligible for up to $90.0 million in sales milestone payments on a CDP by CDP basis, associated with aggregate worldwide sales. Certain product approval milestones are subject to certain reductions under specified circumstances, including for payments required to be made by Allergan to obtain certain third party intellectual property rights. In December 2018, the Company received a $25.0 million payment from Allergan in connection with the acceptance of the IND for the LCA10 Program, the Company's experimental therapeutic generated under the LCA10 Program (the "LCA-10 Program Milestone Payment").

With respect to the LCA10 Program, and up to one other CDP of the Company's choosing, following the exercise by Allergan of its Option to such programs the Company will have the right to elect to participate in a profit-sharing arrangement with Allergan in the United States, on terms mutually agreed by the Company and Allergan and subject to a right of Allergan to reject such election under certain circumstances, under which the Company and Allergan would share equally in net profits and losses on specific terms to be agreed between the Company and Allergan, in lieu of Allergan paying royalties on net sales of any applicable Licensed Products in the United States, and in such event Allergan's milestone payment obligations would be reduced, with the Company being eligible to receive development and product approval and launch milestone payments up to a low nine-digit amount in the aggregate and further sales milestone payments up to a high-eight digit amount in the aggregate, subject to reduction under certain circumstances (such right, the "Profit-Share Election," and such arrangement, a "Profit-Sharing Arrangement"). If the Company elects to participate in a Profit-Sharing Arrangement, which it has for the LCA10 Program, the Company is obligated to reimburse Allergan for half of the United States development costs incurred by Allergan with respect to the applicable CDP, and Allergan will retain control of all development and commercialization activities for the applicable Licensed Products.

In addition, to the extent there is any Licensed Product, the Company would be entitled to receive tiered royalty payments of high single digits based on a percentage of net sales of such Licensed Product, subject to certain reductions under specified circumstances, and the Company will remain obligated to pay all license fees, milestone payments, and royalties due to its upstream licensors based on Allergan's exercise of its license rights with respect to Licensed Products. However, if a Licensed Product is subject to a Profit-Sharing Arrangement the royalties will only be paid on

ex-U.S. net sales. Royalties are due on a Licensed Product by Licensed Product and country by country basis from the date of the first commercial sale of each Licensed Product in a country until the later of: (i) the tenth anniversary of the first commercial sale of such Licensed Product in such country, (ii) the expiration date in such country of the last to expire valid claim within the licensed intellectual property covering the manufacture, use or sale of such Licensed Product in such country and (iii) the expiration of an exclusive legal right granted by the regulatory authority in such country to market and sell such Licensed Product.

Unless earlier terminated, the Allergan Agreement will terminate upon (i) the expiration of the Research Term, if Allergan does not exercise an Option, (ii) on a Licensed Product-by-Licensed Product and country-by-country basis, on the date of the expiration of all payment obligations under the Allergan Agreement with respect to such Licensed Product in such country or (iii) in its entirety upon the expiration of all payment obligations with respect to the last Licensed Product in all countries, unless terminated earlier due to the early termination provisions. Either party may terminate the Allergan Agreement if the other party has materially breached or defaulted in the performance of any of its material obligations and such breach or default continues after the specified cure period. During the Research Term, Allergan will have the right to terminate the Allergan Agreement on a CDP by CDP basis in the event of a change in control of the Company or for all CDPs, provided that Allergan will not have any right to exercise an Option for any CDPs following such termination. After the exercise of an Option, Allergan will have the right, at its sole discretion, to terminate the Allergan Agreement, on a CDP by CDP basis, upon 90 days' written notice. The Company may terminate the Allergan Agreement in the event that Allergan brings, assumes, or participates in, or knowingly, willfully or recklessly assists in bringing a dispute or challenge against the Company related to its intellectual property. Lastly, Allergan may terminate the Allergan Agreement with respect to a CDP if a safety concern, as specified in the Allergan Agreement, arises.

Termination of the Allergan Agreement for any reason will not release either party from any liability which, at the time of such termination, has already accrued to the other party or which is attributable to a period prior to such termination. In addition, termination of the Allergan Agreement will not preclude either party from pursuing any rights and remedies it may have under the agreement or at law or in equity with respect to any breach of the Allergan Agreement. If Allergan terminates the Allergan Agreement as a result of the Company's uncured material breach or default, then: (i) the licenses and rights conveyed to Allergan will continue as set forth in the agreement for any CDP Allergan has already licensed and (ii) Allergan's obligations related to milestones and royalties will continue as set forth in the agreement. If the Allergan Agreement is terminated for any other reason, then the options and licenses conveyed to Allergan under the agreement will terminate.

Under the Allergan Agreement, the Company has identified a single performance obligation that includes (i) the research and development services during the Research Term (the "Allergan R&D Services"), and (ii) Steering Committee services during the Research Term (the "ASC Services"). The Company has concluded that the Allergan R&D Services is not distinct from the ASC Services during the Research Term. The Steering Committee provides oversight and management of the overall Allergan Agreement, and the members of the Steering Committee from the Company have specialized industry knowledge, particularly as it relates to genome editing technology. The Steering Committee is meant to facilitate the early stage research being performed and coordinate the activities of both the Company and Allergan. Further, the Steering Committee services are critical to the selection of a CDP, the ongoing evaluation of a CDP and the development and evaluation of the Option Package Criteria. Accordingly, the Company's participation on the Steering Committee is essential to Allergan receiving value from the Allergan R&D Services and as such, the ASC Services along with the Allergan R&D Services are considered one performance obligation (the "CDP Services"). In addition, the Company has concluded that the option to purchase five development and commercialization licenses is considered a marketing offer as the options did not provide any discounts or other rights that would be considered a material right in the arrangement.

As of January 1, 2018, the date of the initial application of ASC 606 by the Company, the total transaction price was determined to be $90.0 million, consisting solely of the upfront non-refundable, non-creditable cash payment. The Company also utilized the most likely amount method to estimate any development and regulatory milestone payments to be received. As of January 1, 2018, there were no milestones included in the transaction price. The milestones were fully constrained due to the significant uncertainties surrounding such payments. The Company considered the stage of development and the risks associated with the remaining development required to achieve the milestone, as well as

whether the achievement of the milestone is outside the control of the Company or Allergan. Upon achievement of the EDIT-101 Milestone Payment, $25.0 million was added to the transaction price in November 2018. As of December 31, 2019, the total transaction price is $115.0 million. The remaining milestone payments were fully constrained, as a result of the uncertainty as to whether any of the milestones would be achieved, as of December 31, 2019. The Company has determined that any commercial milestones and sales-based royalties will be recognized when the related sales occur and therefore have also been excluded from the transaction price. The Company re-evaluates the transaction price at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur.

The Company recognizes revenue related to the CDP Services as the underlying services are performed using a proportional performance model. The Company measures proportional performance based on full time employee hours relative to projected full time employee hours to complete the research service.

During the year ended December 31, 2019, the Company recognized revenue under the Allergan Agreement of approximately $13.6 million. During the year ended December 31, 2018, the Company recognized revenue under the Allergan Agreement of approximately $21.5 million, which includes $15.0 million related to the LCA10 Option Exercise Payment. The LCA10 Option Exercise Payment was recognized upon the grant to Allergan of the right to use intellectual property associated with the development and commercialization license for LCA10 and final decision making authority with respect to the LCA10 Program. As of December 31, 2019 and 2018, there was $85.6 million and $99.2 million of deferred revenue related to the Allergan Agreement, respectively, of which $63.8 million and $86.4 million is classified as long-term on the consolidated balance sheet, respectively.

As part of the Profit-Sharing Arrangement, the Company and an affiliate of Allergan will equally split U.S. profits and losses for the LCA10 Program in the United States and will co-develop the LCA10 Program in the United States. The Company accounts for the Profit-Sharing Arrangement with respect to the LCA10 Program within the scope of ASC Topic 808, *Collaborative Arrangements*, given that the Company and the Allergan Entities are active participants in future research and development activities and all parties are exposed to significant risks and rewards dependent on the commercial success of such activities. During the years ended December 31, 2019 and 2018, the Company and Allergan incurred $18.6 million and $5.9 million in expense associated with the LCA10 Program after the option exercise, respectively, of which the Company recognized 50% in operating expense during such period. The reimbursement of $1.8 million and $2.3 million is classified as prepaid expenses and other current assets and the liability of $2.6 million and $0.6 million in expenses owed to Allergan is classified as other current liabilities in the consolidated balance sheet as of December 31, 2019 and 2018, respectively.

During the year ended December 31, 2018, the Company incurred $6.0 million in sublicense fees owed to certain of the Company's licensors in connection with the LCA10 Option Exercise Payment and EDIT-101 Milestone Payment, which the Company recorded as research and development expenses during such period, of which $3.8 million were accrued in the consolidated balance sheet as of December 31, 2018. There were no sublicense fees incurred during the year ended December 31, 2019 related to Allergan.

Beam Therapeutics License Agreement

In May 2018, the Company entered into a license agreement with Beam Therapeutics Inc. ("Beam," and such agreement, the "Beam License Agreement"). Beam is a biotechnology company focused on developing precision genetic medicines using technology that converts a single nucleobase into a different nucleobase ("Base Editing"). Pursuant to the Beam License Agreement, the Company granted to Beam licenses and options to acquire licenses to certain intellectual property rights owned or controlled by the Company, for specified uses. More specifically, the Company granted to Beam a worldwide, exclusive (subject to certain exceptions), sublicensable (subject to certain conditions), license under certain intellectual property controlled by the Company for the use of Base Editing therapies for the treatment of any field of human diseases and conditions, subject to certain exceptions (the "Beam Field," and the licenses granted or to be granted under the Beam License Agreement, the "Beam Development and Commercialization License"). Additionally, the Company granted to Beam a royalty-free, non-exclusive license under certain intellectual property owned or controlled by the Company to perform research activities in the Beam Field (the "Beam Research License"). The Company provided Beam with an exclusive option to obtain a Beam Development and Commercialization License to three additional groups of intellectual property owned or controlled by the Company, on a group by group basis,

during the specified option period, subject to certain exceptions. Pursuant to the Beam License Agreement, Beam will use commercially reasonable efforts to develop a product that includes the rights licensed to Beam within a specified period of time and to commercialize any such product that have received regulatory approval in certain specified countries.

As consideration for the license and option rights granted to Beam, the Company received a nominal one-time, non-refundable, non-creditable upfront cash payment. The Company also received non-cash consideration, consisting of a low to mid-single digit million number of shares of Beam Series A-1 and A-2 preferred stock, having an aggregate fair value of approximately $3.6 million. The Company is eligible to receive additional consideration if Beam elects to exercise its option to obtain a Beam Development and Commercialization License to the three categories of intellectual property underlying the Research License, for a fee ranging from a mid-teen million dollar amount to a low to mid-eight digit dollar amount per group, depending on the timing of the option exercise. Additionally, Beam is required to reimburse the Company for certain payments the Company may be obligated to make under the Company's existing license agreements related to the intellectual property being licensed to Beam, including (i) development, regulatory and commercial milestone payments and certain sublicense income payments due as a result of the Beam License Agreement and (ii) a percentage of the annual maintenance fees and patent fees due to certain of the Company's licensors. In addition, to the extent any products are commercialized under a Beam Development and Commercialization License, the Company would be entitled to receive royalty payments equivalent to the royalties that would be due from the Company to any applicable licensors of the Company related to the sales of such licensed products, plus an additional low single-digit percentage royalty. Additionally, if Beam exercises its right to obtain a Beam Development and Commercialization License to one of the categories of optioned intellectual property comprising Company-owned intellectual property and any related licensed products that are commercialized, the Company would be entitled to tiered low single-digit royalty payments related to sales of such licensed products.

The license rights and option rights granted to Beam are subject to the terms and conditions of the underlying license agreements that the Company is a party to and under which the Company licensed rights or option rights to Beam and the termination of such in-licenses, as applicable. Unless earlier terminated by either party pursuant to the terms of the agreement, the Beam License Agreement will continue in full force and effect and will expire on a licensed product-by-licensed product and country-by-country basis upon the expiration of the royalty term with respect to such licensed product in such country. Beam has the right, at its sole discretion, at any time to terminate the Beam License Agreement in its entirety or on a group-by-group of intellectual property basis, upon ninety days written notice to the Company. Upon termination of the Beam License Agreement, all rights and licenses granted by the Company to Beam (including the rights to exercise options and obtain such licenses) will immediately terminate and patents within a group of patents will no longer be deemed licensed patents. Expiration or termination of the Beam License Agreement for any reason does not release either party of any obligation or liability which had accrued or which is attributable to a period prior to such expiration or termination.

The Company has identified the following performance obligations (i) the Beam Development and Commercialization License and (ii) the Beam Research License. In addition, the Company has concluded the option to obtain additional Beam Development and Commercialization Licenses to up to three additional groups of patents in the future is considered a marketing offer as the options did not provide any discounts or other rights that would be considered a material right in the arrangement.

As of December 31, 2019, the total transaction price at the inception of the arrangement was determined to be approximately $3.8 million, consisting of the upfront cash payment and non-cash consideration related to the shares of Beam preferred stock. The Company determined the fair value based on the price paid by other unrelated investors for such shares. The consideration associated with the exercise of the option(s) will be accounted for if and when Beam elects to purchase the additional licenses. The other forms of consideration, including the development and regulatory milestone reimbursement, the sublicense income reimbursement, the maintenance fee reimbursement and the patent costs reimbursement were estimated based on the most-likely amount and were excluded from the initial transaction price as the most-likely amount was estimated to be zero or the amount was otherwise fully constrained due to the significant uncertainties surrounding such payments. The commercial-based milestone reimbursement and the sales-based royalty payments will be recognized when the related sales occur as they were determined to relate predominantly to the licenses granted and therefore have also been excluded from the transaction price.

The total transaction price at the inception of the arrangement was allocated to the performance obligations in the aggregate, as the Beam Development and Commercialization License and the Beam Research License were delivered simultaneously with one another, at inception of the arrangement, when the licenses were made available for Beam's use and benefit. Accordingly, the satisfaction of each performance obligation occurs at inception of the arrangement and the transaction price at the inception of the arrangement is recognized in its entirety at such time. The Company will re-evaluate the transaction price at the end of each reporting period and as uncertain events are resolved or other changes in circumstances occur. There were no changes to the transaction price during the year ended December 31, 2019.

During the year ended December 31, 2019 and 2018, the Company recognized revenue under the Beam License Agreement of approximately $0.2 million and $4.0 million, respectively. The Beam preferred stock is classified in restricted cash and other non-current assets.

10. Preferred Stock

On February 8, 2016, the Company filed a restated certificate of incorporation with the Secretary of State of the State of Delaware. The restated certificate amended and restated the Company's certificate of incorporation in its entirety to, among other things increase the authorized number of shares of common stock to 195,000,000 shares, eliminate all references to the previously existing series of preferred stock, and authorize 5,000,000 shares of undesignated preferred stock that may be issued from time to time by the Company's board of directors in one or more series. As of December 31, 2019, the Company had no shares of preferred stock issued or outstanding.

11. Common Stock

The voting, dividend, and liquidation rights of the holders of the common stock are subject to and qualified by the rights, powers, and preferences of holders of the preferred stock that may be issued from time to time. The common stock had the following characteristics as of December 31, 2019:

Voting

The holders of shares of common stock are entitled to one vote for each share of common stock held at any meeting of stockholders and at the time of any written action in lieu of a meeting.

Dividends

The holders of shares of common stock are entitled to receive dividends, if and when declared by the Company's board of directors. Cash dividends may not be declared or paid to holders of shares of common stock until all unpaid dividends on the redeemable convertible preferred stock have been paid in accordance with their terms. No dividends have been declared or paid by the Company since its inception.

2013 Stock Incentive Plan

In September 2013, the board of directors adopted the 2013 Stock Incentive Plan, which was subsequently amended (as amended, the "2013 Plan"), which provides for the grant of incentive stock options and nonqualified stock options or other awards including restricted stock awards, unrestricted stock awards, and restricted stock units to the Company's employees, officers, directors, advisors, and consultants for the purchase of up to 1,057,692 shares of the Company's common stock, which has been amended several times, and as of July 2015, a total of 6,317,769 shares were reserved.

The terms of stock awards agreements, including vesting requirements, are determined by the board of directors and are subject to the provisions of the 2013 Plan. The stock options granted to employees generally vest over a four-year period and expire ten years from the date of grant. Certain awards contain performance based vesting criteria. There has only been one such award to date. Certain options provide for accelerated vesting in the event of a change in control, as defined in the applicable options. Awards granted to non-employee consultants generally vest monthly over a period

of one to four years. In connection with the Company's initial public offering ("IPO"), the Company's board of directors determined to grant no further awards under the 2013 Plan.

2015 Stock Incentive Plan

The Company's board of directors adopted and the Company's stockholders approved the 2015 stock incentive plan (the "2015 Plan"), which became effective immediately prior to the effectiveness of the registration statement related to the IPO. The 2015 Plan provides for the grant of incentive stock options, nonstatutory stock options, restricted stock awards, restricted stock units, stock appreciation rights and other stock-based awards. The Company's employees, officers, directors and consultants and advisors are eligible to receive awards under the 2015 Plan.

The number of shares reserved for issuance under the 2015 Plan is subject to further increases for (a) any additional shares of the Company's common stock subject to outstanding awards under the 2013 Plan that expire, terminate, or are otherwise surrendered, cancelled, forfeited, or repurchased by the Company at their original issuance price pursuant to a contractual repurchase right and (b) annual increases, to be added as of the first day of each fiscal year, from January 1, 2017 until, and including, January 1, 2026, equal to the lowest of 2,923,076 shares of common stock, 4% of the number of shares of common stock outstanding on such first day of the fiscal year in question and an amount determined by the Company's board of directors. In January 2020, the shares under the 2015 Plan were increased by 2,182,151 shares pursuant to the annual increase described in the prior sentence.

2015 Employee Stock Purchase Plan

The Company's board of directors adopted and the Company's stockholders approved the 2015 employee stock purchase plan (the "2015 ESPP"), which became effective upon the closing of the IPO. The number of shares reserved for issuance under the 2015 ESPP is subject to annual increases, to be added as of the first day of each fiscal year, from January 1, 2017 until, and including, January 1, 2026, in an amount equal to the least of (a) 769,230 shares of common stock, (b) 1% of the total number of shares of common stock outstanding on the first day of the applicable year, and (c) an amount determined by the board of directors. The first offering under the 2015 ESPP opened on December 1, 2017. In January 2020, the shares under the 2015 ESPP Plan were increased by 545,537 shares pursuant to the annual increase described in the prior sentence.

Inducement Awards

From time to time the Company's board of directors approves inducement awards to certain employees outside of the existing equity compensation plans in connection with such employees commencing employment with the Company. Inducement awards are typically a service-based option or a restricted stock unit and are subject to the Company's typical vesting terms and the employee's continued service relationship with the Company through the applicable vesting dates. In January 2020, the Company's board of directors approved an inducement grant to the Company's recently hired Chief Financial Officer, including an option to purchase up to 120,000 shares of the Company's common stock and an award of 20,000 restricted stock units.

Shares Reserved for Future Issuance

	As of December 31,	
	2019	2018
Shares reserved for outstanding stock option awards under the 2013 Stock Incentive Plan, as amended	312,342	873,373
Shares reserved for outstanding stock option awards under the 2015 Stock Incentive Plan	4,254,357	3,709,225
Shares reserved for outstanding inducement stock option award	175,000	107,188
Remaining shares reserved, but unissued, for future awards under the 2015 Stock Incentive Plan	4,061,357	3,233,031
Remaining shares reserved, but unissued, for future awards under the 2015 Employee Stock Purchase Plan	1,630,199	1,175,224
	10,433,255	9,098,041

12. Stock-Based Compensation

Total compensation cost recognized for all stock-based compensation awards in the consolidated statements of operations was as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Research and development	$ 13,538	$ 14,734	$ 15,131
General and administrative	13,705	11,864	8,243
Total stock-compensation expense	$ 27,243	$ 26,598	$ 23,374

Restricted Stock and Restricted Stock Unit Awards

The following table summarizes restricted stock and restricted stock unit awards activity for the instruments discussed above as of December 31, 2018 and 2019 is as follows:

	Shares	Weighted Average Grant Date Fair Value Per Share
Unvested restricted stock and restricted stock unit awards as of December 31, 2018	270,000	$ 28.05
Issued	498,425	$ 22.00
Vested	(99,919)	$ 26.52
Forfeited	(87,098)	$ 21.51
Unvested restricted stock and restricted stock unit awards as of December 31, 2019	581,408	$ 24.03

The expense related to restricted stock and restricted stock unit awards granted to employees and non-employees was $4.7 million and $1.6 million, respectively, for the year ended December 31, 2019. The expense related to restricted stock and restricted stock unit awards granted to employees and non-employees was $0 million and $2.4 million, respectively, for the year ended December 31, 2018. The expense related to restricted stock and restricted stock unit awards granted to employees and non-employees was $0.5 and $4.1 million, respectively, for the year ended December 31, 2017.

As of December 31, 2019, the Company had $4.3 million and $4.5 million in unrecognized stock-based compensation expense related to its employee and non-employee unvested restricted stock and restricted stock unit awards which is expected to be recognized over a remaining weighted average vesting period of 1.8 years and 2.7 years, respectively.

Stock Options

The following is a summary of stock option activity for the year ended December 31, 2019:

	Shares	Weighted Average Exercise Price	Remaining Contractual Life	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2018	4,689,786	$ 23.80	7.9	$ 20,686
Granted	1,793,247	$ 24.04		
Exercised	(1,120,186)	$ 13.27		
Cancelled	(1,004,556)	$ 28.96		
Outstanding at December 31, 2019	4,358,291	$ 25.40	7.4	$ 26,060
Exercisable at December 31, 2019	1,994,417	$ 24.26	6.1	$ 15,747

The stock options granted during the year ended December 31, 2019 include an option granted to the Company's Chief Executive Officer to purchase 250,000 shares of the Company's common stock that contains market-based vesting provisions.

The total intrinsic value of options exercised for the years ended December 31, 2019, 2018 and 2017 was $14.6 million, $15.9 million and $5.0 million, respectively.

Using the Black-Scholes option pricing model, the weighted average fair value of options containing service-based vesting granted to employees and directors during the years ended December 31, 2019, 2018, and 2017 was $15.67, $24.91 and $16.07, respectively. The expense related to options containing service-based vesting granted to employees and directors was $18.1 million, $19.9 million and $12.3 million for the years ended December 31, 2019, 2018, and 2017, respectively.

The fair value of each service-based vesting option issued to employees and directors was estimated at the date of grant using the Black-Scholes option pricing model with the following weighted-average assumptions:

	Year Ended December 31,		
	2019	2018	2017
Expected volatility	73.8 %	77.5 %	77.8 %
Expected term (in years)	6.25	6.25	6.25
Risk free interest rate	2.0 %	2.9 %	2.1 %
Expected dividend yield	—	—	—

There were no options granted to persons other than employees and directors during the years ended December 31, 2019, 2018 and 2017.

As of December 31, 2019, the Company had unrecognized stock-based compensation expense related to its employee service-based stock options and market-based stock options of $34.5 million and $2.9 million which the Company expects to recognize over a remaining weighted average vesting period of 2.8 years and 1.5 years, respectively.

13. 401(k) Savings Plan

The Company has a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code of 1986, as amended (the "401(k) Plan"). The 401(k) Plan covers all employees who meet defined minimum age and service requirements, and allows participants to defer a portion of their annual compensation on a pretax basis. Effective in 2017, the Company will provide a 200% match of employee contributions up to a limit on the Company's contributions of the lesser of $6,000 and 3% of the employee's salary. The Company made $0.8 million, $0.7 million and $0.5 million in contributions to the 401(k) Plan for the years ended December 31, 2019, 2018 and 2017, respectively.

14. Income Taxes

The Company had no income tax expense due to operating losses incurred for the years ended December 31, 2019, 2018 and 2017.

A reconciliation of the income tax expense computed using the federal statutory income tax rate to the Company's effective income tax rate is as follows:

	Year Ended December 31,		
	2019	2018	2017
Income tax computed at federal statutory tax rate	21.0 %	21.0 %	34.0 %
State taxes, net of federal benefit	5.2 %	6.4 %	5.9 %
General business credit carryovers	2.8 %	4.4 %	2.5 %
Stock Options	(2.2) %	0.7 %	(1.2) %
Non-deductible expenses	(0.1) %	(0.1) %	(0.9) %
Federal tax rate reduction	— %	— %	(24.7) %
Change in valuation allowance	(26.7) %	(32.4) %	(15.6) %
	— %	— %	— %

The principal components of the Company's deferred tax assets and liabilities consist of the following at December 31, 2019 and 2018 (in thousands):

	Year Ended December 31,	
	2019	2018
Deferred tax assets:		
Net operating loss carryforwards	$ 50,511	$ 20,302
Tax credit carryforwards	13,767	10,059
Accrued expenses	2,219	3,099
Capitalized patent costs	39,070	33,101
Lease liabilities	7,879	—
Deferred revenue	31,880	34,039
Construction financing lease obligation	—	9,100
Other	7,865	8,347
Total deferred tax assets	153,191	118,047
Less valuation allowance	(144,540)	(109,091)
Net deferred tax assets	8,651	8,956
Deferred tax liabilities:	(8,651)	(8,956)
Depreciation and amortization	(859)	(8,956)
Right-of-use assets	(7,792)	—
Net deferred taxes	$ —	$ —

The Company has incurred net operating losses ("NOL") since inception. At December 31, 2019 and 2018, the Company had federal net operating loss carryforwards of $185.4 million and $74.7 million, respectively. Of the amount as of December 31, 2019, $110.0 million will carryforward indefinitely while $75.4 million will expire beginning in 2033 and will continue to expire through 2037. As of December 31, 2019, and 2018, the Company also had state net operating loss carryforwards of approximately $183.3 million and $73.1 million, respectively, which may be available to offset future income tax liabilities and will expire beginning in 2035 and will continue to expire through 2039.

Under the provisions of the Internal Revenue Code of 1986, as amended (the "Code"), the NOL and tax credit carryforward are subject to review and possible adjustment by the Internal Revenue Service and state tax authorities. NOL and tax credit carryforwards may become subject to an annual limitation in the event of certain cumulative changes in the ownership interest of significant shareholders over a three-year period in excess of 50%, as defined under Sections 382 and 383 of the Code, respectively, as well as other similar state provisions. The Company conducted an analysis under Section 382 to determine if historical changes in ownership through December 31, 2018 would limit or otherwise restrict its ability to utilize its NOL and research and development credit carryforwards. As a result of this analysis, the Company does not believe there are any significant limitations on its ability to utilize these carryforwards. However, future changes in ownership occurring after December 31, 2018 could affect the limitation in future years, and any limitation may result in expiration of a portion of the NOL or research and development credit carryforwards before utilization.

Management has evaluated the positive and negative evidence bearing upon the realizability of its deferred tax assets, which principally comprise of NOL carryforwards, research and development credit carryforwards and capitalized license and patent costs. The Company's management has determined that it is more likely than not that the Company will not recognize the benefits of its federal and state deferred tax assets, and as a result, a valuation allowance of $144.5 million and $109.1 million has been established at December 31, 2019 and 2018, respectively. The increase in the valuation allowance of $35.4 million for the year ended December 31, 2019 was primarily due to current period pre-tax losses incurred and research tax credits generated.

The Company applies ASC 740 related to accounting for uncertainty in income taxes. The Company's reserves related to income taxes are based on a determination of whether, and how much of, a tax benefit taken by the Company in its tax filings or positions is more likely than not to be realized following resolution of any potential contingencies present related to the tax benefit. At December 31, 2019 and 2018, the Company had no unrecognized tax benefits. Interest and penalty charges, if any, related to unrecognized tax benefits would be classified as income tax expense in the accompanying statements of operations.

The Company has not as yet conducted a study of its research and development credit carry forwards. This study may result in an adjustment to the Company's research and development credit carryforwards; however, until a study is completed and any adjustment is known, no amounts are being presented as an uncertain tax position. A full valuation allowance has been provided against the Company's research and development credits, and if an adjustment is required, this adjustment would be offset by an adjustment to the valuation allowance. Thus, there would be no impact to the consolidated balance sheets or statements of operations if an adjustment were required.

The Company files income tax returns in the U.S. federal tax jurisdiction, the Massachusetts state jurisdiction, the California state jurisdiction and the Colorado state jurisdiction. Since the Company is in a loss carryforward position, the Company is generally subject to examination by the U.S. federal, state and local income tax authorities for all tax years in which a loss carryforward is available. The Company did not have any international operations as of December 31, 2019. There are no federal or state audits in process.

15. Net Loss per Share

Basic net loss per common share is calculated by dividing the net loss attributable to common stockholders by the weighted average number of shares of common stock outstanding during the period, without consideration for potentially dilutive securities. Diluted net loss per share is computed by dividing the net loss attributable to common stockholders by the weighted average number of shares of common stock and potentially dilutive securities outstanding for the period determined using the treasury stock and if converted methods. Contingently issuable shares are included in the calculation of basic loss per share as of the beginning of the period in which all the necessary conditions have been satisfied. Contingently issuable shares are included in diluted loss per share based on the number of shares, if any, that would be issuable under the terms of the arrangement if the end of the reporting period was the end of the contingency period, if the results are dilutive.

For purposes of the diluted net loss per share calculation, stock options are considered to be common stock equivalents, but they were excluded from the Company's calculation of diluted net loss per share allocable to common

stockholders because their inclusion would have been anti-dilutive. Therefore, basic and diluted net loss per share applicable to common stockholders was the same for all periods presented.

The following common stock equivalents were excluded from the calculation of diluted net loss per share allocable to common stockholders because their inclusion would have been anti-dilutive:

	As of December 31,	
	2019	2018
Unvested restricted common stock	581,408	270,000
Outstanding stock options	4,358,291	4,689,786
Total	4,939,699	4,959,786

The table above reflects restricted stock issued upon exercise of unvested stock options as exercised on the dates that the shares are no longer subject to repurchase.

16. Related-Party Transactions

The Company received $0.4 million and $0.8 million in rent and facility-related fees from a related party during the years ended December 31, 2018 and 2017, respectively, in connection with subleasing a portion of its headquarters and no rent or facility-related payments were received from this related party during the year ended December 31, 2019. During the years ended December 31, 2018 and 2017, the Company paid a related party $0.8 million and $0.3 million, respectively, in connection with certain research and development expenses. The Company did not make any payments to this related party during the year ended December 31, 2019.

17. Selected Quarterly Financial Data (unaudited) –

The following table contains selected quarterly financial information from 2019 and 2018. The Company believes that the following information reflects all normal recurring adjustments necessary for a fair statement of the information for the periods presented. The operating results for any quarter are not necessarily indicative of results for any future period.

	Three Months Ended			
	March 31, 2019	June 30, 2019	September 30, 2019	December 31, 2019
	(in thousands, except per share data)			
Total collaboration and other research and development revenues	$ 2,069	$ 2,330	$ 3,848	$ 12,284
Total operating expenses	33,331	37,979	38,436	51,707
Total other income (expense), net	2,013	1,863	1,647	1,653
Net loss	$ (29,249)	$ (33,786)	$ (32,941)	$ (37,770)
Net loss applicable to common stockholders	$ (29,249)	$ (33,786)	$ (32,941)	$ (37,770)
Net loss per share applicable to common stockholders — basic and diluted	$ (0.60)	$ (0.69)	$ (0.66)	$ (0.74)

	Three Months Ended			
	March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
	(in thousands, except per share data)			
Total collaboration and other research and development revenues	$ 3,927	$ 7,372	$ 14,519	$ 6,119
Total operating expenses	35,486	47,029	30,777	32,372
Total other income (expense), net	620	934	1,020	1,199
Net loss	$ (30,939)	$ (38,723)	$ (15,238)	$ (25,054)
Net loss applicable to common stockholders	$ (30,939)	$ (38,723)	$ (15,238)	$ (25,054)
Net loss per share applicable to common stockholders — basic and diluted	$ (0.67)	$ (0.82)	$ (0.32)	$ (0.52)

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and our principal financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2019. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act") means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Securities and Exchange Commission's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure. Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and our management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2019, our principal executive officer and principal financial officer concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Our internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with general accepted accounting principles. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the 2013 framework in Internal Control–Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our evaluation under that framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2019.

The effectiveness of our internal control over financial reporting as of December 31, 2019, has been audited by Ernst & Young LLP, an independent registered public accounting firm, and has issued an attestation report on such audit, which is included herein.

Changes in Internal Control over Financial Reporting

No change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) occurred during our fiscal quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Shareholders and the Board of Directors of Editas Medicine, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Editas Medicine, Inc.'s internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, Editas Medicine, Inc. (the "Company") maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of Editas Medicine, Inc. as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive loss, redeemable convertible preferred stock and stockholders' (deficit) equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and our report dated February 26, 2020 expressed an unqualified opinion thereon.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission of the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 26, 2020

Item 9B. Other Information.

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Except to the extent provided below, the information required by this Item 10 will be included in the section captioned "Corporate Governance" and the subsections thereof, "Nominees for Election as Class I Directors," "Directors Continuing in Office," "Executive Officers Who Are Not Directors," and "Delinquent Section 16(a) Reports," if applicable, in our definitive proxy statement to be filed with the Securities and Exchange Commission ("SEC") with respect to our 2020 Annual Meeting of Stockholders, which information is incorporated herein by reference.

We have adopted a written code of business conduct and ethics that applies to our directors, officers, and employees, including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions. A copy of the code is posted on the Corporate Governance section of our website, which is located at www.editasmedicine.com. If we make any substantive amendments to, or grant any waivers from, the code of business conduct and ethics for any officer or director, we will disclose the nature of such amendment or waiver on our website or in a current report on Form 8-K. We will provide any person, without charge, a copy of such Code of Business Conduct and Ethics upon written request, which may be mailed to 11 Hurley Street, Cambridge, MA 02141, Attn: Corporate Secretary.

Item 11. Executive Compensation.

The information required by this Item 11 will be included in the section captioned "Executive and Director Compensation" in our definitive proxy statement to be filed with the SEC with respect to our 2020 Annual Meeting of Stockholders, which information is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information required by this Item 12 will be included in the sections captioned "Principal Stockholders" and "Securities Authorized for Issuance under Equity Compensation Plans" in our definitive proxy statement to be filed

with the SEC with respect to our 2020 Annual Meeting of Stockholders, which information is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item 13 will be included in the sections captioned “Transactions with Related Persons” and “Director Independence” in our definitive proxy statement to be filed with the SEC with respect to our 2020 Annual Meeting of Stockholders, which information is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

The information required by this Item 14 will be included in the sections captioned “Audit Fees” and “Audit Committee Pre-Approval Policies and Procedures” in our definitive proxy statement to be filed with the SEC with respect to our 2020 Annual Meeting of Stockholders, which information is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(1) Financial Statements

Our consolidated financial statements are set forth in Part II, Item 8 of this Annual Report on Form 10-K and are incorporated herein by reference.

(2) Financial Statement Schedules

Schedules have been omitted since they are either not required or not applicable or the information is otherwise included herein.

(3) Exhibits

The exhibits filed as part of this Annual Report on Form 10-K are listed in the following Exhibit Index.

EXHIBIT INDEX

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Date of Filing	Exhibit Number	
3.1	Restated Certificate of Incorporation of the Registrant	8-K	001-37687	2/8/2016	3.1	
3.2	Amended and Restated By-laws of the Registrant	8-K	001-37687	2/8/2016	3.2	
4.1	Specimen Stock Certificate evidencing the shares of common stock	S-1	333-208856	1/4/2016	4.1	
4.2	Description of Registrant’s Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934					X
10.1+	2013 Stock Incentive Plan, as amended	S-1	333-208856	1/4/2016	10.5	
10.2+	Form of Incentive Stock Option Agreement under 2013 Stock Incentive Plan, as amended	S-1	333-208856	1/4/2016	10.6	

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Date of Filing	Exhibit Number	
10.3+	Form of Nonstatutory Stock Option Agreement under 2013 Stock Incentive Plan, as amended	S-1	333-208856	1/4/2016	10.7	
10.4+	Form of Early Exercise Nonstatutory Stock Option Agreement under 2013 Stock Incentive Plan, as amended	S-1	333-208856	1/4/2016	10.8	
10.5+	Form of Restricted Stock Agreement under 2013 Stock Incentive Plan, as amended	S-1	333-208856	1/4/2016	10.9	
10.6+	2015 Stock Incentive Plan	S-1	333-208856	1/4/2016	10.10	
10.7+	Form of Incentive Stock Option Agreement under 2015 Stock Incentive Plan	S-1	333-208856	1/4/2016	10.11	
10.8+	Form of Nonstatutory Stock Option Agreement under 2015 Stock Incentive Plan	S-1	333-208856	1/4/2016	10.12	
10.9+	Form of Restricted Stock Agreement under 2015 Stock Incentive Plan	10-Q	001-37687	11/8/2017	10.1	
10.10+	Form of Restricted Stock Unit Award Agreement under the 2015 Stock Incentive Plan	10-Q	001-37687	5/8/2019	10.4	
10.11+	Amended and Restated Offer of Employment, dated July 24, 2016, between the Registrant and Charles Albright, Ph.D.	10-K	001-37687	3/3/2017	10.11	
10.12+	Employment Offer Letter, dated August 6, 2019, between the Registrant and Cynthia Collins	10-Q	001-37687	11/12/2019	10.1	
10.13+	Employment Offer Letter, dated October 11, 2019, between the Registrant and Judith R. Abrams, M.D.					X
10.14+	Employment Offer Letter, dated December 27, 2019, between the Registrant and Michelle Robertson					X
10.15+	Form of Inducement Stock Option Agreement for the Registrant's executive officers					X
10.16+	Form of Inducement Restricted Stock Unit Award Agreement for the Registrant's executive officers					X
10.17+	Letter Agreement, dated September 26, 2019, by and between the Registrant and Vic Myer, Ph.D.	10-Q	001-37687	11/12/2019	10.2	
10.18†	Amended and Restated Cas9-I License Agreement, dated December 16, 2016, among the Registrant, the President and Fellows of Harvard College ("Harvard"), and the Broad Institute, Inc. (the "Broad")	8-K	001-37687	1/23/2017	99.2	
10.19	Amendment No.1 to Amended and Restated Cas9-I License Agreement, by and among Editas Medicine, Inc., Harvard, and Broad, dated March 3, 2017	8-K	001-37687	3/7/2017	99.1	

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Date of Filing	Exhibit Number	
10.20*	Second Amended and Restated License and Collaboration Agreement, dated November 11, 2019, between the Registrant and Juno Therapeutics, Inc. ("Juno")					X
10.21*	License and Agreement, dated November 11, 2019, between the Registrant and Juno					X
10.22†	Sponsored Research Agreement, dated June 7, 2018, between the Registrant and Broad	10-Q/A	001-37687	10/23/2018	10.2	
10.23+	Summary of Director Compensation Program	S-1	333-208856	1/4/2016	10.24	
10.24+	2015 Employee Stock Purchase Plan	S-1	333-208856	1/4/2016	10.25	
10.25+	Amended Severance Benefits Plan					X
10.26	Form of Indemnification Agreement between the Registrant and each of its directors and executive officers	S-1	333-208856	1/4/2016	10.28	
10.27	Lease Agreement, dated February 12, 2016, between Registrant and ARE-MA Region No. 55 Exchange Holding LLC	8-K	001-37687	2/19/2016	99.1	
10.28†	Cpf1 License Agreement, dated as of December 16, 2016, by and between the Registrant and Broad	8-K	001-37687	1/23/2017	99.1	
10.29†	Cas9-II License Agreement, dated as of December 16, 2016, by and between the Registrant and Broad	8-K	001-37687	1/23/2017	99.3	
10.30*	Letter Agreement, dated as of November 18, 2019, by and among, the Registrant, Broad and Harvard					X
10.31*	Letter Agreement, dated as of December 16, 2019, by and among, the Registrant, Broad and Harvard					X
10.32†	Strategic Alliance and Option Agreement, dated March 14, 2017, by and between the Registrant and Allergan Pharmaceuticals International Limited	10-Q	001-37687	5/15/2017	10.1	
10.33*	Co-Development and Commercialization Agreement, dated February 22, 2019, by and between the Registrant and Allergan Sales, LLC	10-Q	001-37687	5/8/2017	10.1	
21.1	Subsidiaries of the Registrant	10-K	001-37687	3/30/2016	21.1	
23.1	Consent of Ernst & Young					X
31.1	Rule 13a-14(a) Certification of Principal Executive Officer					X
31.2	Rule 13a-14(a) Certification of Principal Financial Officer					X
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. §1350					X

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File No.	Date of Filing	Exhibit Number	
101	The following financial statements from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline XBRL (eXtensible Business Reporting Language): (i) Consolidated Balance Sheets, (ii) Consolidated Statements of Operations, (iii) Consolidated Statements of Comprehensive Loss, (iv) Consolidated Statement of Stockholders' Equity, (v) Consolidated Statements of Cash Flows and (vi) Notes to Condensed Consolidated Financial Statements, tagged as blocks of text and including detailed tags.					
104	The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2019, formatted in Inline XBRL.					

† Confidential treatment has been granted as to certain portions, which portions have been omitted and filed separately with the Securities and Exchange Commission.

* Portions of this exhibit have been omitted pursuant to Item 601(b)(10)(iv) of Regulation S-K. Certain portions of this exhibit have been omitted because they are not material and would likely cause competitive harm to the Registrant if disclosed.

+ Management contract or compensatory plan or arrangement.

Item 16. Form 10-K Summary.

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

EDITAS MEDICINE, INC.

Dated: February 26, 2020

By: /s/ Cynthia Collins
Cynthia Collins
Principal Executive Officer

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Cynthia Collins Cynthia Collins	President and Chief Executive Officer, Director (principal executive officer)	February 26, 2020
/s/ Michelle Robertson Michelle Robertson	Chief Financial Officer (principal financial and accounting officer)	February 26, 2020
/s/ James Mullen James Mullen	Chairman of the Board	February 26, 2020
/s/ Andrew Hirsch Andrew Hirsch	Director	February 26, 2020
/s/ Jessica Hopfield Jessica Hopfield, Ph.D.	Director	February 26, 2020
/s/ David Scadden David Scadden, M.D.	Director	February 26, 2020
/s/ Akshay K. Vaishnaw Akshay K. Vaishnaw, M.D., Ph.D.	Director	February 26, 2020

Exhibit 4.2

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

As of December 31, 2019, Editas Medicine, Inc. ("we" or "us") had one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock, par value $0.0001 per share.

Description of Capital Stock

The following description of our capital stock is intended as a summary only and therefore is not a complete description of our capital stock. This description is based upon, and is qualified by reference to, our restated certificate of incorporation, our amended and restated by-laws and applicable provisions of Delaware corporate law. You should read our restated certificate of incorporation and amended and restated by-laws, which are filed as exhibits to our most recent Annual Report on Form 10-K.

Our authorized capital stock consists of 195,000,000 shares of common stock, par value $0.0001 per share, and 5,000,000 shares of preferred stock, par value $0.0001 per share.

Common Stock

Annual Meeting. Annual meetings of our stockholders are held on the date designated in accordance with our amended and restated by-laws. Written notice must be mailed to each stockholder entitled to vote not less than ten nor more than 60 days before the date of the meeting. The presence in person or by proxy of the holders of record of a majority of our issued and outstanding shares entitled to vote at such meeting constitutes a quorum for the transaction of business at meetings of the stockholders. Special meetings of the stockholders may be called for any purpose, and may be called only by the board of directors, the chairman of the board, or the chief executive officer, and business to be transacted at any special meeting is limited to matters related to the purpose or purposes stated in the notice of the meeting. Except as may be otherwise provided by applicable law, our restated certificate of incorporation, or our amended and restated by-laws, all elections of directors shall be decided by a plurality, and all other questions shall be decided by a majority, of the votes cast by stockholders entitled to vote thereon at a duly held meeting of stockholders at which a quorum is present.

Voting Rights. Each holder of common stock is entitled to one vote for each share held on all matters to be voted upon by stockholders.

Dividends. The holders of common stock, after any preferences of holders of any preferred stock, are entitled to proportionately receive dividends when and if declared by the board of directors out of legally available funds, subject to any preferential dividend or other rights of any series of preferred stock that we may designate and issue in the future.

Liquidation and Dissolution. If we are liquidated or dissolved, the holders of the common stock will be entitled to share in our assets available for distribution to stockholders in proportion to the amount of common stock they own. The amount available for common stockholders is calculated after payment of all debts and other liabilities. Holders of any preferred stock will receive a preferential share of our assets before the holders of the common stock receive any assets.

Other Rights. Holders of the common stock have no right to:

- convert the stock into any other security;
- have the stock redeemed;
- purchase additional stock; or
- maintain their proportionate ownership interest.

The common stock does not have cumulative voting rights. Holders of shares of the common stock are not required to make additional capital contributions. The rights, preferences and privileges of holders of common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

Provisions of Our Certificate of Incorporation and By-laws and Delaware Law That May Have Anti-Takeover Effects

Delaware law, our restated certificate of incorporation, and our amended and restated bylaws contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors.

Staggered Board; Removal of Directors. Our restated certificate of incorporation and amended and restated bylaws divide our board of directors into three classes with staggered three-year terms. In addition, a director may be removed only for cause and only by the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in an annual election of directors. Any vacancy on our board of directors, including a vacancy resulting from an enlargement of our board of directors, may be filled only by vote of a majority of our directors then in office. The classification of our board of directors and the limitations on the removal of directors and filling of vacancies could make it more difficult for a third party to acquire, or discourage a third party from seeking to acquire, control of our company.

Stockholder Action by Written Consent; Special Meetings. Our restated certificate of incorporation provides that any action required or permitted to be taken by our stockholders must be effected at a duly called annual or special meeting of such holders and may not be effected by any consent in writing by such holders. Our restated certificate of incorporation and amended and restated bylaws also provide that, except as otherwise required by law, special meetings of our stockholders can only be called by the chairman of our board of directors, our Chief Executive Officer, or our board of directors.

Advance Notice Requirements for Stockholder Proposals. Our amended and restated bylaws establish an advance notice procedure for stockholder proposals to be brought before an annual meeting of stockholders, including proposed nominations of persons for election to our board of directors. Stockholders at an annual meeting may only consider proposals or nominations specified in the notice of meeting or brought before the meeting by or at the direction of our board of directors or by a stockholder of record on the record date for the meeting who is entitled to vote at the meeting and who has delivered timely written notice in proper form to our secretary of the stockholder's intention to bring such business before the meeting. These provisions could have the effect of delaying until the next stockholder meeting stockholder actions that are favored by the holders of a majority of our outstanding voting securities.

Delaware Business Combination Statute. We are subject to Section 203 of the General Corporation Law of the State of Delaware. Subject to certain exceptions, Section 203 prevents a publicly held Delaware corporation from engaging in a "business combination" with any "interested stockholder" for three years following the date that the person became an interested stockholder, unless the interested stockholder attained such status with the approval of our board of directors or unless the business combination is approved in a prescribed manner. A "business combination" includes, among other things, a merger or consolidation involving us and the "interested stockholder" and the sale of more than 10% of our assets. In general, an "interested stockholder" is any entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Amendment of Certificate of Incorporation and Bylaws. The General Corporation Law of the State of Delaware provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or bylaws, unless a corporation's certificate of incorporation or bylaws, as the case may be, requires a greater percentage. Our amended and restated bylaws may be amended or repealed by a majority vote of our board of directors or by the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in any annual election of directors. In addition, the affirmative vote of the holders of at least 75% of the votes that all of our stockholders would be entitled to cast in any annual election of directors is required to amend or repeal or to adopt any provisions inconsistent with any of the provisions of our restated certificate of incorporation described above under "—Staggered Board; Removal of Directors" and "—Stockholder Action by Written Consent; Special Meetings."

Exclusive Forum Selection. Our restated certificate of incorporation provides that the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of our company, (2) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, or other employees to our company or our stockholders, (3) any action asserting a claim against our company arising pursuant to any provision of the General Corporation Law of the State of Delaware or our restated certificate of incorporation or amended and restated bylaws, or (4) any action asserting a claim against our company governed by the internal affairs doctrine. This exclusive forum provision would not apply to suits brought to enforce a duty or liability created by the Exchange Act, which provides for exclusive jurisdiction of the federal courts. It could apply, however, to a suit that falls within one or more of the categories enumerated in the exclusive forum provision and asserts claims under the Securities Act, inasmuch as Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. There is uncertainty as to whether a court would enforce such provision with respect to claims under the Securities Act, and our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Blank Check Preferred Stock. Our restated certificate of incorporation provides for 5,000,000 authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of our company by means of a merger, tender offer, proxy contest, or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of our company, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquiror or insurgent shareholder or shareholder group. In this regard, our restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of such holders and may have the effect of delaying, deterring, or preventing a change in control of the company. Our board of directors currently does not intend to seek shareholder approval prior to any issuance of shares of preferred stock, unless otherwise required by law.

Authorized But Unissued Shares. Our authorized but unissued shares of common stock and preferred stock are available for future issuance without stockholder approval, subject to any limitations imposed by the listing standards of the Nasdaq Global Select Market. These additional shares may be used for a variety of corporate finance transactions, acquisitions and employee benefit plans. The existence of authorized but unissued and unreserved common stock and preferred stock could make more difficult or discourage an attempt to obtain control of us by means of a proxy contest, tender offer, merger, or otherwise.

October 7, 2019

Judith R. Abrams

Re: Offer of Employment

Dear Judith,

On behalf of Editas Medicine, Inc. (the "**Company**"), I am pleased to offer you employment with the Company. The purpose of this letter is to set forth the terms of your employment with the Company, should you accept our offer:

You will be employed to serve on a full-time basis as the Chief Medical Officer ("**CMO**") of the Company, reporting to the Chief Executive Officer of the Company. Your base salary will be at the rate of $18,125.00 per semi-monthly pay period (equivalent to an annualized base salary of $435,000.00), subject to tax and other withholdings as required by law. Your effective date of hire as an employee (the "**Start Date**") is to be mutually agreed upon by you and the Company. You shall work out of the Company's office in Cambridge, Massachusetts and shall travel as required by your job duties.

You will receive a one-time sign on bonus of $100,000, less applicable taxes and withholdings, (the "**Signing Bonus**"), which will be paid to you in the first regular payroll following your commencement of employment with the Company. Should you decide to leave the Company (other than for Good Reason) or are terminated for Cause, each within the first year of your employment, you will be expected to repay the bonus in full, in accordance with the Company's Policy as set forth later herein. All payments are subject to legally required or permitted tax withholdings. For purposes of this letter agreement, "**Cause**" and "**Good Reason**" shall have the same definitions as set forth in the Company's Severance Benefits Plan, as amended.

Following the end of each fiscal year and subject to the approval of the Company's Board of Directors (the "**Board**"), or a duly authorized committee thereof, you will be eligible for a retention and performance bonus, targeted at 40% of your annualized base salary, based on the Company's performance during the applicable fiscal year, as determined by the Board (or such committee) in its sole discretion in accordance with certain corporate goals determined by the Board (or such committee) in its sole discretion each year; provided, however, that, you will not be eligible for such a bonus in connection with the 2019 fiscal year. You must be an active employee of the Company on the date any bonus is distributed in order to be eligible for and to

earn a bonus award, as it also serves as an incentive to remain employed by the Company, provided that the Company will award and pay any bonus for the prior calendar year on or before March 15th of the next succeeding calendar year.

Subject to approval of the Company's Board of Directors, you may be granted (i) a stock option to purchase 150,000 shares of the Company's common stock (the "**Option**") at an exercise or purchase price equal to the fair market value of the Company's common stock on the date of grant and (ii) restricted stock units in the amount of 25,000 units (the "**RSU**", together with the Option, the "**Equity Awards**"). The Equity Awards are being granted pursuant to Nasdaq Listing Rule 5635(c)(4) as an inducement for you to enter into employment with the Company. The Option will vest over four (4) years at the rate of 25% on the first anniversary of the Start Date, and an additional 2.0833% of the original number of shares at the end of each successive month following the first anniversary of the Start Date until the fourth anniversary of such date. The RSU will vest over four (4) years at the rate of 25% on the first anniversary of the Start Date, and an additional 25% of the original number of RSU's will vest at the end of each successive anniversary date of your Start Date until the fourth anniversary of such date. The Equity Awards will be brought to the Board of Directors for approval on or after the date you begin employment with the Company. The Equity Awards will be evidenced in writing by, and subject to the terms of an inducement stock option agreement and an inducement restricted stock unit agreement, as applicable.

You will be eligible for reimbursement of up to twelve (12) months of temporary living costs (up to a maximum amount of $5,000.00 per month) (the "**Housing Allowance**"). The Housing Allowance, less applicable taxes and withholdings, will be paid to you no later than the end of the month following the month in which you incur the temporary living costs, following provision by you to the Company of documentation of such expenses.

In addition, you will also be eligible to receive a one-time, lump sum bonus to be applied to your relocation to the Boston area equal to $100,000 (the "**Relocation Amount**"), provided that you submit to the Company either a signed (i) purchase and sale agreement relating to your current residence in New Jersey or a new residence in the Boston area or (ii) long-term rental agreement (of a minimum of 2 years in duration) relating to a new residence in the Boston area, within 18 months of your Start Date. The Relocation Amount, less applicable taxes and withholdings, will be paid to you no later than the end of the month following your provision of supporting documentation to the Company.

All reimbursements and in-kind benefits provided hereunder shall be made or provided in accordance with the requirements of Section 409A to the extent that such reimbursements or in-kind benefits are subject to Section 409A, including, where applicable, the requirements that (i) any reimbursement is for expenses incurred during your lifetime (or during a shorter period of time specified herein), (ii) the amount of expenses eligible for reimbursement during a calendar year may not affect the expenses eligible for reimbursement in any other calendar year, (iii) the reimbursement of an eligible expense will be made on or before the last day of the calendar year

following the year in which the expense is incurred and (iv) the right to reimbursement is not subject to set off or liquidation or exchange for any other benefit.

Should, within the twelve (12) month period following the Start Date, (a) you resign from employment with the Company (other than for Good Reason); or (b) the Company terminates your employment for Cause, you will be expected to repay the Housing Allowance in full, in accordance with the Company's Policy as set forth below. Further, should, within the twelve (12) month period following the date you receive the Relocation Amount, (a) you resign from employment with the Company (other than for Good Reason), (b) the Company terminates your employment for Cause; or (c) you fail to relocate to the Boston area, you will be expected to repay the Relocation Amount in full, in accordance with the Company's Policy as set forth below.

The Company's payment of the Signing Bonus, Housing Allowance, and Relocation Amount are subject to repayment upon termination of your employment, as set forth above. Repayment required under this letter agreement will be due and payable to the Company within thirty (30) days of your separation from employment with the Company and/or will be deducted from any amounts due to you from the Company, up to the full balance of what is owed to the Company, subject to applicable law. By signing and returning this offer letter, you agree to repayment of the Signing Bonus, Housing Allowance, and Relocation Amount as provided for in this letter agreement, and you further agree to execute any documents requested by the Company at any time authorizing the deduction of such amounts from any amounts due to you from the Company. If the Company does not take such deduction or any such deduction does not fully satisfy the amount of reimbursement due, you agree to repay the remaining unpaid balance to the Company as set forth above.

Following commencement of your employment with the Company, you will be entitled to engage in clinical activities at a hospital on a schedule and frequency that is generally consistent with 0.5 days per week, provided that such activity does not interfere or conflict with your obligations to the Company (as reasonably determined by the CEO and the Board of Directors of the Company).

You will be eligible to participate in the Company's Severance Benefits Plan, a copy of which is enclosed, at the "Other C-Level Officer" level. Your eligibility under the Severance Benefits Plan is subject to the terms and conditions thereof.

You may participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided you are eligible under (and subject to all provisions of) the plan documents governing those programs. Additionally, you will be eligible for paid vacation and holidays in accordance with Company policy. Please see the enclosed "2019 Benefits Overview" for detailed information on our benefits and related policies, which currently include 11 paid holidays and a flexible time-off program. The benefit programs made available by the Company, and the rules, terms and conditions for participation in such benefit plans, may be changed by the Company at any time without advance notice.

You will be required to execute a Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement in the form attachment as Exhibit A (the "Agreement"), as a condition of employment. You acknowledge that your eligibility for the Signing Bonus and the Equity Awards referenced herein are contingent upon your agreement to the non-competition provisions set forth in the Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement. You further acknowledge that such consideration was mutually agreed upon by you and the Company is fair and reasonable in exchange for your compliance with such non-competition obligations.

In making this offer, the Company understands, based on representations made by you, that you are not under any obligation to any former employer or any person or entity which would prevent, limit, or impair in any way your acceptance of this offer or employment or the performance by you of your duties as an employee of the Company. In accepting this offer you represent and warrant the foregoing to be true and correct and that in connection with providing services to the Company you will not (i) use any confidential and/or proprietary information of any third party, including, without limitation, any former employer, and (ii) bring any biological or other materials to the Company. You further acknowledge and agree that the Agreement was provided to you by the earlier of (i) the date we sent you this letter agreement or (ii) ten (10) business days before the commencement of your employment with the Company.

You agree to provide to the Company, within three days of your hire date, documentation of your eligibility to work in the United States, as required by the Immigration Reform and Control Act of 1986. You may need to obtain a work visa in order to be eligible to work in the United States. If that is the case, your employment with the Company will be conditioned upon your obtaining a work visa in a timely manner as determined by the Company.

It is understood that you are an "at-will" employee. You are not being offered employment for a definite period of time or pursuant to an employment contract, and either you or the Company may terminate the employment relationship at any time and for any reason, with or without cause, or prior notice and without additional compensation to you.

This letter agreement and the Agreement referenced above constitute the complete agreement between you and the Company, contain all of the terms of your employment with the Company and supersede any prior agreements, representations or understandings (formal or informal, whether written, oral or implied) between you and the Company. This letter agreement may not be amended or modified except by an express written agreement signed by both you and a duly authorized officer of the Company. Although your job duties, title, reporting relationship, compensation and benefits may change from time to time in the Company's sole discretion (subject to any Good Reason rights you may have) and provided that the "at-will" nature of your employment may only be changed by a written agreement signed by you and the Chief Executive Officer, which expressly states the intention to modify the at-will nature of your employment. Nothing in this letter shall be construed as an agreement, either express or implied, to pay you any compensation or grant you any benefit beyond the end of your employment with the Company, except to the extent you are eligible for post-employment benefits under the

Severance Benefit Plan. The resolution of any disputes under this letter will be governed by the laws of the Commonwealth of Massachusetts.

As an employee of the Company, you will be required to familiarize yourself and comply with all Company policies and procedures. Violations of the Company's policies may lead to immediate termination of your employment. Further, the Company's premises, including all workspaces, furniture, documents and other tangible materials, together with all information technology resources of the Company (including computers, portable devices, data and other electronic files (whether in hard copy or electronic form), and all internet and email communications) are subject to oversight and inspection by the Company at any time. Company employees shall have no expectation of privacy with regard to any Company premises, materials, resources or information.

The Company's offer of at-will employment is contingent upon your authorization and successful completion of background and reference checks. You will be required to execute authorizations for the Company to obtain consumer reports and/or investigative consumer reports and use them in conducting background checks as a condition to your employment. The Company may obtain background reports both pre-employment and from time to time during your employment with the Company, as necessary.

Please indicate your acceptance of this offer by signing and returning the enclosed copy of this letter, and the Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement, no later than October 23, 2019. You may indicate your acceptance of this offer by signing on the appropriate space below and returning a signed, scanned copy along with the Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement referenced in this letter to Tricia McCall at tricia.mccall@editasmed.com or returning by mail to Editas Medicine, Inc., 11 Hurley Street, Cambridge, MA 02141, Attention: Tricia McCall. Please know that we are truly excited at the prospect of you becoming part of the Editas team and at your leadership helping to build what we hope will be an exceptional organization, one that is both a scientific pioneer and that delivers transformative medicines to many patients. We believe that you will be a fundamental part of turning that aspiration into reality.

Very truly yours,

/s/ Tricia McCall
Tricia McCall
Interim Head of HR
Editas Medicine, Inc.

The foregoing correctly sets forth the terms of my employment by Editas Medicine, Inc. I am not relying on any other representation, except as set forth in this letter.

/s/ Judith Abrams
Judith R. Abrams

October 11, 2019
Date

December 3, 2019

Michelle Robertson

Re: Offer of Employment

Dear Michelle,

On behalf of Editas Medicine, Inc. (the "**Company**"), I am pleased to offer you employment with the Company. The purpose of this letter is to set forth the terms of your employment with the Company, should you accept our offer.

You will be employed to serve on a full-time basis as the Chief Financial Officer, reporting to the Chief Executive Officer of the Company. Your base salary will be at the rate of $15,384.62 per bi-weekly pay period (equivalent to an annualized base salary of $400,000.00). Your effective date of hire as an employee (the "**Start Date**") will be a date mutually agreed upon by you and the Company on or after January 1, 2020. You shall work out of the Company's office in Cambridge, Massachusetts and shall travel as required by your job duties.

You will receive a one-time sign on bonus of $140,000, less applicable taxes and withholdings, (the "**Signing Bonus**"), which will be paid to you in the first regular payroll following your commencement of employment with the Company. Should you decide to leave the Company (other than for Good Reason) or are terminated for Cause, each within the first year of your employment, you will be expected to repay the bonus in full, in accordance with the Company's Policy as set forth later herein. All payments are subject to legally required or permitted tax withholdings. For purposes of this letter agreement, "**Cause**" and "**Good Reason**" shall have the same definitions as set forth in the Company's Severance Benefits Plan, as amended.

Following the end of each fiscal year and subject to the approval of the Company's Board of Directors (the "**Board**"), or a duly authorized committee thereof, you will be eligible for a retention and performance bonus, targeted at 40% of your annualized base salary, based on the Company's performance goals during the applicable fiscal year as determined by the Board (or such committee) in its sole discretion in accordance with certain corporate goals determined by the Board (or such committee) in its sole discretion each year. You must be an active employee of the Company on the date any bonus is distributed in order to be eligible for and to earn a

bonus award, as it also serves as an incentive to remain employed by the Company, provided that the Company will award and pay any bonus for the prior calendar year on or before March 15th of the next succeeding calendar year.

Subject to approval of the Company's Board of Directors, you may be granted (i) a stock option to purchase 120,000 shares of the Company's common stock (the "**Option**") at an exercise or purchase price equal to the fair market value of the Company's common stock on the date of grant and (ii) restricted stock units in the amount of 20,000 units (the "**RSU**", together with the Option, the "**Equity Awards**"). The Equity Awards are being granted pursuant to Nasdaq Listing Rule 5635(c)(4) as an inducement for you to enter into employment with the Company. The Option will vest over four (4) years at the rate of 25% on the first anniversary of the Start Date, and an additional 2.0833% of the original number of shares at the end of each successive month following the first anniversary of the Start Date until the fourth anniversary of such date. The RSU will vest over four (4) years at the rate of 25% on the first anniversary of the Start Date, and an additional 25% of the original number of RSU's will vest at the end of each successive anniversary date of your Start Date until the fourth anniversary of such date. The Equity Awards will be brought to the Board of Directors for approval on or after the date you begin employment with the Company. The Equity Awards will be granted under and subject to the terms of the Company's 2015 Stock Incentive Plan and evidenced in writing by, and subject to the terms of a stock option agreement and a restricted stock unit agreement, as applicable, thereunder.

Should, within the twelve (12) month period following the Start Date, you (a) resign from employment with the Company (other than for Good Reason) or (b) the Company terminates your employment for Cause, you will be expected to repay the Signing Bonus in full, in accordance with the Company's Policy as set forth below.

The Company's payment of the Signing Bonus is subject to repayment upon termination of your employment, as set forth above. Repayment required under this letter agreement will be due and payable to the Company within thirty (30) days of your separation from employment with the Company and/or will be deducted from any amounts due to you from the Company, up to the full balance of what is owed to the Company, subject to applicable law. By signing and returning this offer letter, you agree to repayment of the Signing Bonus as provided for in this letter agreement, and you further agree to execute any documents requested by the Company at any time authorizing the deduction of such amounts from any amounts due to you from the Company. If the Company does not take such deduction or any such deduction does not fully satisfy the amount of reimbursement due, you agree to repay the remaining unpaid balance to the Company as set forth above.

You will be eligible to participate in the Company's Severance Benefits Plan, a copy of which is enclosed, at the "Other C-Level Officer" level. Your eligibility under the Severance Benefits Plan is subject to the terms and conditions thereof.

You may participate in any and all benefit programs that the Company establishes and makes available to its employees from time to time, provided you are eligible under (and subject to all

provisions of) the plan documents governing those programs. Additionally, you will be eligible for paid vacation and holidays in accordance with Company policy. Please see the enclosed "2020 Benefits Overview" for detailed information on our benefits and related policies, which currently include 11 paid holidays and a flexible time off program. The benefit programs made available by the Company, and the rules, terms and conditions for participation in such benefit plans, may be changed by the Company at any time without advance notice.

You will be required to execute a Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement in the form attachment as Exhibit A (the "Agreement"), as a condition of employment. You acknowledge that your eligibility for the Sign On Bonus and Equity Awards referenced herein are contingent upon your agreement to the non-competition provisions set forth in the Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement. You further acknowledge that such consideration was mutually agreed upon by you and the Company is fair and reasonable in exchange for your compliance with such non-competition obligations.

In making this offer, the Company understands, based on representations made by you, that you are not under any obligation to any former employer or any person or entity which would prevent, limit, or impair in any way your acceptance of this offer or employment or the performance by you of your duties as an employee of the Company. In accepting this offer you represent and warrant the foregoing to be true and correct and that in connection with providing services to the Company you will not (i) use any confidential and/or proprietary information of any third party, including, without limitation, any former employer, and (ii) bring any biological or other materials to the Company. You further acknowledge and agree that the Agreement was provided to you by the earlier of (i) the date we sent you this letter agreement or (ii) ten (10) business days before the commencement of your employment with the Company.

You agree to provide to the Company, within three days of your hire date, documentation of your eligibility to work in the United States, as required by the Immigration Reform and Control Act of 1986. You may need to obtain a work visa in order to be eligible to work in the United States. If that is the case, your employment with the Company will be conditioned upon your obtaining a work visa in a timely manner as determined by the Company.

It is understood that you are an "at-will" employee. You are not being offered employment for a definite period of time or pursuant to an employment contract, and either you or the Company may terminate the employment relationship at any time and for any reason, with or without cause, or prior notice and without additional compensation to you.

This letter agreement and the Agreement referenced above constitute the complete agreement between you and the Company, contain all of the terms of your employment with the Company and supersede any prior agreements, representations or understandings (formal or informal, whether written, oral or implied) between you and the Company. This letter agreement may not be amended or modified except by an express written agreement signed by both you and a duly authorized officer of the Company. Although your job duties, title, reporting relationship, compensation and benefits may change from time to time in the Company's sole discretion and provided that the "at-will" nature of your employment may only be changed by a written

agreement signed by you and the Chief Executive Officer, which expressly states the intention to modify the at-will nature of your employment. Nothing in this letter shall be construed as an agreement, either express or implied, to pay you any compensation or grant you any benefit beyond the end of your employment with the Company, except to the extent you are eligible for post-employment benefits under the Severance Benefit Plan. The resolution of any disputes under this letter will be governed by the laws of the Commonwealth of Massachusetts.

As an employee of the Company, you will be required to familiarize yourself and comply with all Company policies and procedures. Violations of the Company's policies may lead to immediate termination of your employment. Further, the Company's premises, including all workspaces, furniture, documents and other tangible materials, together with all information technology resources of the Company (including computers, portable devices, data and other electronic files (whether in hard copy or electronic form), and all internet and email communications) are subject to oversight and inspection by the Company at any time. Company employees shall have no expectation of privacy with regard to any Company premises, materials, resources or information.

The Company's offer of at-will employment is contingent upon your authorization and successful completion of background and/or reference checks. You will be required to execute authorizations for the Company to obtain consumer reports and/or investigative consumer reports and use them in conducting background checks as a condition to your employment. The Company may obtain background reports both pre-employment and from time to time during your employment with the Company, as necessary.

Please indicate your acceptance of this offer by signing and returning the enclosed copy of this letter, and the Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement, no later than December 18, 2019. You may indicate your acceptance of this offer by signing on the appropriate space below and returning a signed, scanned copy along with the Non-Solicitation, Non-Competition, Confidentiality and Assignment Agreement referenced in this letter to Tricia McCall at tricia.mccall@editasmed.com or returning by mail to Editas Medicine, Inc., 11 Hurley Street, Cambridge, MA 02141, Attention: Tricia McCall.

Please know that we are truly excited at the prospect of you becoming part of the Editas team and at your leadership helping to build what we hope will be an exceptional organization, one that is both a scientific pioneer and that delivers transformative medicines to many patients. We believe that you will be a fundamental part of turning that aspiration into reality

Very truly yours,

/s/ Tricia McCall

Tricia McCall

Interim Head of HR
Editas Medicine, Inc.

The foregoing correctly sets forth the terms of my employment by Editas Medicine, Inc. I am not relying on any other representation, except as set forth in this letter.

/s/ Michelle Robertson	December 27, 2019
Michelle Robertson	Date

Editas Medicine, Inc.

Inducement Stock Option Agreement

1. Grant of Option.

This agreement evidences the grant by Editas Medicine, Inc., a Delaware corporation (the "Company"), on [_____] (the "Grant Date") to [_____] (the "Participant"), of an option to purchase, in whole or in part, on the terms provided herein, a total of [_____] shares (the "Shares") of common stock, $0.0001 par value per share, of the Company ("Common Stock") at $[_____] per Share. Unless earlier terminated, this option shall expire at 5:00 p.m., Eastern time, on [_____] (the "Final Exercise Date").

The option evidenced by this agreement was granted to the Participant pursuant to the inducement grant exception under Nasdaq Stock Market Rule 5635(c)(4), and not pursuant to the Company's 2015 Stock Incentive Plan (the "Plan") or any equity incentive plan of the Company, as an inducement that is material to the Participant's employment with the Company.

It is intended that the option evidenced by this agreement shall not be an incentive stock option as defined in Section 422 of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code"). Except as otherwise indicated by the context, the term "Participant", as used in this option, shall be deemed to include any person who acquires the right to exercise this option validly under its terms.

2. Vesting Schedule.

Except as otherwise provided herein, this option will become exercisable ("vest") as to 25% of the original number of Shares on one-year anniversary of the Grant Date and as to an additional 2.0833% of the original number of Shares at the end of each successive month following the one-year anniversary of the Grant Date until the fourth anniversary of the Grant Date.

The right of exercise shall be cumulative so that to the extent the option is not exercised in any period to the maximum extent permissible it shall continue to be exercisable, in whole or in part, with respect to all Shares for which it is vested until the earlier of the Final Exercise Date or the termination of this option under Section 3 hereof.

3. Exercise of Option.

(a) Form of Exercise. Each election to exercise this option shall be in writing, signed by the Participant (or such electronic notice as is approved by the Company), and received by the Company at its principal office, accompanied by this agreement and payment in full as follows:

(1) in cash or by check, payable to the order of the Company;

(2) by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding;

(3) to the extent approved by the Board of Directors of the Company (the "Board"), in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value per share as determined by (or in a manner approved by) the Board (the "Fair Market Value"), provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements;

(4) to the extent approved by the Board, in its sole discretion, by delivery of a notice of "net exercise" to the Company, as a result of which the Participant would receive (i) the number of shares underlying the portion of this being exercised, less (ii) such number of shares as is equal to (A) the aggregate exercise price for the portion of this option being exercised divided by (B) the Fair Market Value on the date of exercise;

(5) to the extent permitted by applicable law or approved by the Board, in its sole discretion, by payment of such other lawful consideration as the Board may determine; or

(6) by any combination of the above permitted forms of payment.

The Participant may purchase less than the number of shares covered hereby, provided that no partial exercise of this option may be for any fractional share or for fewer than ten whole shares.

(b) Continuous Relationship with the Company Required. Except as otherwise provided in this Section 3, this option may not be exercised unless the Participant, at the time he or she exercises this option, is, and has been at all times since the Grant Date, an employee, officer or a director of, or consultant or advisor to, the Company or any other entity the employees, officers, directors, consultants, or advisors of which are eligible to receive option grants under the Plan (an "Eligible Participant").

(c) Termination of Relationship with the Company. If the Participant ceases to be an Eligible Participant for any reason, then, except as provided in paragraphs (d) and (e) below, the right to exercise this option shall terminate three months after such cessation (but in no event after the Final Exercise Date), provided that this option shall be exercisable only to the extent that the Participant was entitled to exercise this option on the date of such cessation. Notwithstanding the foregoing, if the Participant, prior to the Final Exercise Date, violates the restrictive covenants (including, without limitation, the non-competition, non-solicitation, or

confidentiality provisions of any employment contract, confidentiality and nondisclosure agreement or other agreement between the Participant and the Company, the right to exercise this option shall terminate immediately upon such violation.

(d) Exercise Period Upon Death or Disability. If the Participant dies or becomes disabled (within the meaning of Section 22(e)(3) of the Code) prior to the Final Exercise Date while he or she is an Eligible Participant and the Company has not terminated such relationship for "cause" as specified in paragraph (e) below, this option shall be exercisable, within the period of one year following the date of death or disability of the Participant, by the Participant (or in the case of death by an authorized transferee), provided that this option shall be exercisable only to the extent that this option was exercisable by the Participant on the date of his or her death or disability, and further provided that this option shall not be exercisable after the Final Exercise Date.

(e) Termination for Cause. If, prior to the Final Exercise Date, the Participant's employment or other relationship with the Company is terminated by the Company for Cause (as defined below), the right to exercise this option shall terminate immediately upon the effective date of such termination of employment or other relationship. If, prior to the Final Exercise Date, the Participant is given notice by the Company of the termination of his or her employment or other relationship by the Company for Cause, and the effective date of such termination is subsequent to the date of delivery of such notice, the right to exercise this option shall be suspended from the time of the delivery of such notice until the earlier of (i) such time as it is determined or otherwise agreed that the Participant's employment or other relationship shall not be terminated for Cause as provided in such notice or (ii) the effective date of such termination (in which case the right to exercise this option shall, pursuant to the preceding sentence, terminate upon the effective date of such termination). If the Participant is party to an employment, consulting or severance agreement or plan with the Company that contains a definition of "cause" for termination of employment or other relationship, "Cause" shall have the meaning ascribed to such term in such agreement. Otherwise, "Cause" shall mean willful misconduct by the Participant or willful failure by the Participant to perform his or her responsibilities to the Company (including, without limitation, breach by the Participant of any provision of any employment, consulting, advisory, nondisclosure, non-competition or other similar agreement between the Participant and the Company), as determined by the Company, which determination shall be conclusive. The Participant's employment or other relationship shall be considered to have been terminated for "Cause" if the Company determines, within 30 days after the Participant's resignation, that termination for Cause was warranted.

4. Agreement in Connection with Public Offering.

The Participant agrees, in connection with an underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in

whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending up to 90 days after the date of the final prospectus relating to the offering, and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

5. Withholding.

No Shares will be issued pursuant to the exercise of this option unless and until the Participant pays to the Company, or makes provision satisfactory to the Company for payment of, any federal, state or local withholding taxes required by law to be withheld in respect of this option. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under this option. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise of this option or at the same time as payment of the exercise price, unless the Company determines otherwise. If approved by the Board, in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery (either by actual delivery or attestation) of shares of Common Stock underlying this option valued at their Fair Market Value; *provided, however*, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), except that, to the extent that the Company is able to retain shares of Common Stock having a fair market value (determined by (or in a manner approved by) the Company) that exceeds the statutory minimum applicable withholding tax without financial accounting implications or the Company is withholding in a jurisdiction that does not have a statutory minimum withholding tax, the Company may retain such number of shares of Common Stock (up to the number of shares having a fair market value equal to the maximum individual statutory rate of tax (determined by (or in a manner approved by) the Company)) as the Company shall determine in its sole discretion to satisfy the tax liability associated with any Award. Shares used to satisfy tax withholding requirements cannot be subject to any forfeiture, unfulfilled vesting or other similar requirements.

6. Transfer Restrictions; Clawback.

This option may not be sold, assigned, transferred, pledged or otherwise encumbered by the Participant, either voluntarily or by operation of law, except by will or the laws of descent

and distribution, and, during the lifetime of the Participant, this option shall be exercisable only by the Participant. In accepting this option, the Participant agrees to be bound by any clawback policy that the Company has adopted or may adopt in the future.

7. Adjustments for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, the number and class of securities and exercise price per share of this option shall be equitably adjusted by the Company in the manner determined by the Board. Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to this option are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then the Participant, if he or she exercises this option between the record date and the distribution date for such stock dividend, shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon exercise of this option, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization Events. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company. In connection with a Reorganization Event, the Board may take any one or more of the following actions with respect to this option (or any portion thereof) on such terms as the Board determines: (i) provide that this option shall be assumed, or substantially equivalent option shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to the Participant, provide that the unvested and/ or unexercised portion of this option will terminate immediately prior to the consummation of such Reorganization Event unless exercised by the Participant within a specified period following the date of such notice, (iii) provide that this option shall become exercisable, realizable, or deliverable, or restrictions applicable to this option shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), make or provide for a cash payment to the Participant with respect to this option equal to (A) the number of shares of Common Stock subject to the vested portion of this option (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) the exercise price of this option and any applicable tax withholdings, in exchange for the termination of this option, (v) provide that, in connection with a liquidation or dissolution of the Company, this option shall convert into the right to receive liquidation proceeds (if

applicable, net of the exercise, measurement or purchase price thereof and any applicable tax withholdings) and (vi) any combination of the foregoing.

For purposes of clause (i) above, this option shall be considered assumed if, following consummation of the Reorganization Event, this option confers the right to purchase, for each share of Common Stock subject to this option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of this option to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

8. Miscellaneous.

(a) No Right To Employment or Other Status. The grant of this option shall not be construed as giving the Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with the Participant free from any liability or claim hereunder.

(b) No Rights As Stockholder. Subject to the provisions of this option, the Participant shall not have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to this option until becoming the record holder of such shares.

(c) Entire Agreement. This Agreement and the Company's Severance Benefits Plan, to the extent applicable to Participant, constitute the entire agreement between the parties, and supersede all prior agreements and understandings, relating to the subject matter hereof.

(d) Amendment. The Board may amend, modify or terminate this Agreement, including but not limited to, substituting another option of the same or a different type and changing the date of exercise or realization. Notwithstanding the foregoing, the Participant's consent to such action shall be required unless (i) the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant, or (ii) the change is permitted under Section 7 of this Agreement.

(e) Acceleration. The Board may at any time provide that this option shall become immediately exercisable in whole or in part, free of some or all restrictions or conditions, or otherwise realizable in whole or in part, as the case may be.

(f) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to this Agreement until (i) all conditions of this Agreement have been met to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and regulations and any applicable stock exchange or stock market rules and regulations, and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(g) Administration by Board. The Board will administer this Agreement and may construe and interpret the terms hereof. The Board may correct any defect, supply any omission or reconcile any inconsistency in this Agreement in the manner and to the extent it shall deem expedient to carry the Agreement into effect and it shall be the sole and final judge of such expediency. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under this Agreement made in good faith.

(h) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers hereunder to one or more committees or subcommittees of the Board (a "Committee"). All references herein to the "Board" shall mean the Board or a Committee to the extent that the Board's powers or authority hereunder have been delegated to such Committee.

(i) Severability. The invalidity or unenforceability of any provision hereof shall not affect the validity or enforceability of any other provision hereof, and each such other provision shall be severable and enforceable to the extent permitted by law.

(j) Governing Law. This Agreement shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than the State of Delaware.

(k) Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together will constitute one in the same instrument.

The Company has caused this option to be executed by its duly authorized officer.

EDITAS MEDICINE, INC.

By: _____
Name: _____
Title: _____

PARTICIPANT'S ACCEPTANCE

The undersigned hereby accepts the foregoing option and agrees to the terms and conditions thereof.

PARTICIPANT:

_____
[_____]

Address: _____
_____
_____

Exhibit 10.16

EDITAS MEDICINE, INC.
INDUCEMENT RESTRICTED STOCK UNIT AGREEMENT

Editas Medicine, Inc. (the "Company") hereby grants the following restricted stock units. The terms and conditions attached hereto are also a part hereof.

Notice of Grant

Name of recipient (the "Participant"):	[_____]
Grant Date:	[_____]
Number of Restricted Stock Units ("RSUs") granted:	[_____]
Number, if any, of RSUs that vest immediately on the grant date:	[_____]
RSUs that are subject to vesting schedule:	[_____]
Vesting Start Date:	[_____]

Vesting Schedule:

[_____]	[_____]
All vesting is dependent on the Participant continuing to perform services for the Company, as provided herein.	

This grant of RSUs satisfies in full all commitments that the Company has to the Participant with respect to the issuance of stock, stock options or other equity securities.

Participant

_____
[_____]

_____
Street Address

_____
City/State/Zip Code

Editas Medicine, Inc.

By: _____
Name:
Title:

Editas Medicine, Inc.

Restricted Stock Unit Agreement
Incorporated Terms and Conditions

For valuable consideration, receipt of which is acknowledged, the parties hereto agree as follows:

1. Award of Restricted Stock Units.

In consideration of services rendered and to be rendered to the Company, by the Participant, the Company has granted to the Participant, subject to the terms and conditions set forth in this Restricted Stock Unit Agreement (this "Agreement"), an award with respect to the number of restricted shares units (the "RSUs") set forth in the Notice of Grant that forms part of this Agreement (the "Notice of Grant"). Each RSU represents the right to receive one share of common stock, $0.0001 par value per share, of the Company (the "Common Stock") upon vesting of the RSU, subject to the terms and conditions set forth herein.

The RSUs were granted to the Participant pursuant to the inducement grant exception under Nasdaq Stock Market Rule 5635(c)(4), and not pursuant to the Company's 2015 Stock Incentive Plan or any equity incentive plan of the Company, as an inducement that is material to the Participant's employment with the Company.

2. Vesting.

The RSUs shall vest in accordance with the Vesting Schedule set forth in the Notice of Grant (the "Vesting Schedule").

Upon the vesting of the RSU, the Company will deliver to the Participant, for each RSU that becomes vested, one share of Common Stock, subject to the payment of any taxes pursuant to Section 7. The Common Stock will be delivered to the Participant as soon as practicable following each vesting date, but in any event within 30 days of such date.

3. Forfeiture of Unvested RSUs Upon Cessation of Service.

In the event that the Participant ceases to perform services to the Company for any reason or no reason, with or without cause, all of the RSUs that are unvested as of the time of such cessation shall be forfeited immediately and automatically to the Company, without the payment of any consideration to the Participant, effective as of such cessation. The Participant shall have no further rights with respect to the unvested RSUs or any Common Stock that may have been issuable with respect thereto. If the Participant provides services to a subsidiary of the Company, any references in this Agreement to provision of services to the Company shall instead be deemed to refer to service with such subsidiary.

4. Restrictions on Transfer; Clawback.

The Participant shall not sell, assign, transfer, pledge, hypothecate or otherwise dispose of, by operation of law or otherwise (collectively "transfer") any RSUs, or any interest therein. The Company shall not be required to treat as the owner of any RSUs or issue any Common Stock to any transferee to whom such RSUs have been transferred in violation of any of the provisions of this Agreement. In accepting these RSUs, the Participant agrees to be bound by any clawback policy that the Company has adopted or may adopt in the future.

5. Rights as a Stockholder.

The Participant shall have no rights as a stockholder of the Company with respect to any shares of Common Stock that may be issuable with respect to the RSUs until the issuance of the shares of Common Stock to the Participant following the vesting of the RSUs.

6. Agreement in Connection with Public Offering.

The Participant agrees, in connection with an underwritten public offering of the Common Stock pursuant to a registration statement under the Securities Act, (i) not to (a) offer, pledge, announce the intention to sell, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, or otherwise transfer or dispose of, directly or indirectly, any shares of Common Stock or any other securities of the Company or (b) enter into any swap or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of shares of Common Stock or other securities of the Company, whether any transaction described in clause (a) or (b) is to be settled by delivery of securities, in cash or otherwise, during the period beginning on the date of the filing of such registration statement with the Securities and Exchange Commission and ending up to 90 days after the date of the final prospectus relating to the offering, and (ii) to execute any agreement reflecting clause (i) above as may be requested by the Company or the managing underwriters at the time of such offering. The Company may impose stop-transfer instructions with respect to the shares of Common Stock or other securities subject to the foregoing restriction until the end of the "lock-up" period.

7. Tax Matters.

(a) Acknowledgments; No Section 83(b) Election. The Participant acknowledges that he or she is responsible for obtaining the advice of the Participant's own tax advisors with respect to the award of RSUs and the Participant is relying solely on such advisors and not on any statements or representations of the Company or any of its agents with respect to the tax consequences relating to the RSUs. The Participant understands that the Participant (and not the Company) shall be responsible for the Participant's tax liability that may arise in connection with the acquisition, vesting and/or disposition of the RSUs. The Participant acknowledges that no election under Section 83(b) of the Internal Revenue Code, as amended, is available with respect to RSUs.

(b) Withholding. The Participant acknowledges and agrees that the Company has the right to deduct from payments of any kind otherwise due to the Participant any federal, state, local or other taxes of any kind required by law to be withheld with respect to the vesting of the RSUs. At such time as the Participant is not aware of any material nonpublic information

about the Company or the Common Stock, the Participant shall execute the instructions set forth in Exhibit A attached hereto (the "Automatic Sale Instructions") as the means of satisfying such tax obligation. If the Participant does not execute the Automatic Sale Instructions prior to an applicable vesting date, then the Participant agrees that if under applicable law the Participant will owe taxes at such vesting date on the portion of the Award then vested the Company shall be entitled to immediate payment from the Participant of the amount of any tax required to be withheld by the Company. The Company shall not deliver any shares of Common Stock to the Participant until it is satisfied that all required withholdings have been made.

8. Adjustments for Changes in Common Stock and Certain Other Events.

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, the number and class of securities subject to the RSUs shall be equitably adjusted by the Company in the manner determined by the Board. .

(b) Reorganization Events. A "Reorganization Event" shall mean: (a) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled, (b) any transfer or disposition of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange or other transaction or (c) any liquidation or dissolution of the Company. In connection with a Reorganization Event, the Board may take any one or more of the following actions with respect to the RSUs (or any portion thereof) on such terms as the Board determines: (i) provide that the RSUs shall be assumed, or substantially equivalent RSUs shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof), (ii) upon written notice to the Participant, provide that the unvested portion of the RSUs will terminate immediately prior to the consummation of such Reorganization Event, (iii) provide that restrictions applicable to the RSUs shall lapse, in whole or in part prior to or upon such Reorganization Event, (iv) in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share surrendered in the Reorganization Event (the "Acquisition Price"), make or provide for a cash payment to the Participant with respect to the RSUs equal to (A) the number of shares of Common Stock subject to the vested portion of the RSUs (after giving effect to any acceleration of vesting that occurs upon or immediately prior to such Reorganization Event) multiplied by (B) the excess, if any, of (I) the Acquisition Price over (II) any applicable tax withholdings, in exchange for the termination of the RSUs, (v) provide that, in connection with a liquidation or dissolution of the Company, the RSUs shall convert into the right to receive liquidation proceeds (if applicable, net of any applicable tax withholdings) and (vi) any combination of the foregoing.

For purposes of clause (i) above, the RSUs shall be considered assumed if, following consummation of the Reorganization Event, the RSUs confer the right to purchase, for each RSU immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of

the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received to consist solely of such number of shares of common stock of the acquiring or succeeding corporation (or an affiliate thereof) that the Board determined to be equivalent in value (as of the date of such determination or another date specified by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event.

9. Miscellaneous.

(a) Authority of Board and Compensation Committee. This Agreement shall be administered by either the Board of Directors of the Company (the "Board"), the Compensation Committee of the Board, or a similar committee performing the functions of the compensation committee and which is comprised of not less than two non-employee directors who are independent (the "Administrator"). The Administrator shall have the power and authority to: (i) determine and modify from time to time the terms and conditions, including restrictions, of the RSUs; (ii) accelerate at any time the vesting of all or any portion of the RSUs; (iii) interpret the terms and provisions of the RSUs (including related written instruments); (iv) make all determinations it deems advisable for the administration of the RSUs; (v) decide all disputes arising in connection with the RSUs; and (vi) otherwise supervise the administration of the RSUs. All decisions and interpretations of the Administrator shall be binding on all persons, including the Company and the Participant.

(b) No Right to Continued Service. The Participant acknowledges and agrees that, notwithstanding the fact that the vesting of the RSUs is contingent upon his or her continued service to the Company, this Agreement does not constitute an express or implied promise of continued service relationship with the Participant or confer upon the Participant any rights with respect to a continued service relationship with the Company.

(c) Entire Agreement. This Agreement and the Company's Severance Benefits Plan, to the extent applicable to Participant, constitute the entire agreement between the parties, and supersede all prior agreements and understandings, relating to the subject matter hereof.

(d) Section 409A. The RSUs awarded pursuant to this Agreement are intended to be exempt from or comply with the requirements of Section 409A of the Internal Revenue Code and the Treasury Regulations issued thereunder ("Section 409A"). The delivery of shares of Common Stock on the vesting of the RSUs may not be accelerated or deferred unless permitted or required by Section 409A.

(e) Participant's Acknowledgements. The Participant acknowledges that he or she: (i) has read this Agreement; (ii) has been represented in the preparation, negotiation and execution of this Agreement by legal counsel of the Participant's own choice or has voluntarily

declined to seek such counsel; (iii) understands the terms and consequences of this Agreement; and (iv) is fully aware of the legal and binding effect of this Agreement.

(f) Governing Law. This Agreement shall be construed, interpreted and enforced in accordance with the internal laws of the State of Delaware without regard to any applicable conflicts of laws provisions.

Exhibit A

DURABLE AUTOMATIC SALE INSTRUCTION

This Durable Automatic Sale Instruction is being delivered to Editas Medicine, Inc. ("**Editas**") by the undersigned on the date set forth below.

I hereby acknowledge that Editas has granted, or may in the future from time to time grant, to me restricted stock units, or "RSUs," under Editas' equity incentive plans or inducement RSU plans as in effect from time to time.

I acknowledge that upon the vesting dates applicable to any such RSUs, I will have compensation income equal to the fair market value of the shares of Editas common stock subject to the RSUs that vest on such date and that Editas is required to withhold income and employment taxes in respect of that compensation income on the applicable vesting date.

I desire to establish a process to satisfy such withholding obligation in respect of all RSUs that have been, or may in the future be, granted by Editas to me through an automatic sale of a portion of the shares of Editas common stock that would otherwise be issued to me on each applicable vesting date, such portion to be in an amount sufficient to satisfy such withholding obligation, with the proceeds of such sale delivered to Editas in satisfaction of such withholding obligation.

I understand that Editas has arranged for the administration and execution of its equity incentive plans and the sale of securities by plan participants thereunder pursuant to an Internet-based platform administered by a third party, which is referred to herein as the "Administrator," and the Administrator's designated brokerage partner.

Upon any vesting of my RSUs from and after the date of this Durable Automatic Sale Instruction, I hereby appoint the Administrator to automatically sell such number of shares of Editas common stock issuable with respect to my RSUs that vest as is sufficient to generate net proceeds sufficient to satisfy Editas' minimum statutory withholding obligations with respect to the income recognized by me upon the vesting of the RSUs (based on minimum statutory withholding rates for all tax purposes, including payroll and social security taxes, that are applicable to such income), and Editas shall receive such net proceeds in satisfaction of such tax withholding obligation.

I agree to (i) execute and deliver such further documents, instruments and certificates as may reasonably be required by the Administrator in connection with the sale of the shares pursuant to these automatic sale instructions and (ii) to appoint the Administrator and any agent or representative thereof as my attorney-in-fact to sell Editas common stock in accordance with this Durable Automatic Sale Instruction.

_____

Print Name: _____

Date: _____

Exhibit 10.20

EXECUTION VERSION

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm to the Company, if publicly disclosed. Double asterisks denote omissions.

SECOND AMENDED AND RESTATED

COLLABORATION AND LICENSE AGREEMENT

by and between

EDITAS MEDICINE, INC.

AND

JUNO THERAPEUTICS, INC.

NOVEMBER 11, 2019

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LIST OF EXHIBITS AND SCHEDULES

SECOND AMENDED AND RESTATED

COLLABORATION AND LICENSE AGREEMENT

This SECOND AMENDED AND RESTATED COLLABORATION AND LICENSE AGREEMENT (this "Agreement"), effective as of November 11, 2019 (the "Amendment Date"), is made by and between Editas Medicine, Inc., a Delaware corporation, having its principal place of business at 11 Hurley St., Cambridge, MA 02141 ("Editas"), and Juno Therapeutics, Inc., a Delaware corporation, having its principal place of business at 400 Dexter Avenue North, Suite 1200, Seattle, WA 98109 ("Juno") and amends and restates (a) that certain Collaboration and License Agreement by and between Editas and Juno (the "Original Agreement"), dated as of May 26, 2015 (the "Original Effective Date"); and (b) that certain Amended and Restated Collaboration and License Agreement by and between Editas and Juno (the "First Amended and Restated Agreement"), dated as of May 3, 2018 (the "First Amended Effective Date").

BACKGROUND

A. Editas has skills, expertise and proprietary technology regarding gene editing technology. Juno has skills, expertise and proprietary technology regarding T-cell immunotherapy technology.

B. Juno and Editas desire to amend and restate the First Amended and Restated Agreement and conduct a collaboration wherein Juno shall select certain Collaboration Targets and Editas may apply its Genome Editing Technology, with the goal of generating RNP Complexes that modulate the expression of Collaboration Targets and ultimately identifying Lead Candidates.

C. In connection with this Agreement, Juno and Editas desire to enter into the License Agreement pursuant to which, among other things, Editas shall grant to Juno an exclusive license to utilize Collaboration RNP Complex(es) generated under a Research Program prior to the Amendment Date, together with intellectual property related thereto, for use in (a) α-β T-Cells or (b) Other Derived T-Cells, in each case, on the terms and subject to the conditions set forth in the License Agreement.

D. Juno shall have the exclusive right, in its discretion, to enter into a Licensed Program Addendum with Editas to amend the License Agreement to incorporate one or more Program(s) conducted hereunder into the License Agreement, in each case, on the terms and subject to the conditions set forth herein.

NOW, THEREFORE, for and in consideration of the covenants, conditions and undertakings hereinafter set forth, it is agreed by and between the Parties as follows:

ARTICLE 1
DEFINITIONS

As used herein, the following terms shall have the meanings set forth below.

1.1 "α-β T-Cell" means a T-Cell that expresses or has ever expressed a T-cell receptor (TCR) dimer consisting of an alpha (α) chain and a beta (β) chain, including any cell derived therefrom. For clarity, "α-β T-Cell" includes any Derived T-Cell that is an α-β T-Cell.

1.2 "γ-δ T-Cell" means a T-Cell that expresses a γ-δ T-cell receptor dimer consisting of a gamma (γ) chain and a delta (δ) chain, but excluding any α-β T-Cell. For clarity, "γ-δ T-Cell" includes any Derived T-Cell that is a γ-δ T-Cell.

1.3 "2014 MGH Agreement" means that certain Exclusive Patent License Agreement by and between MGH and Editas effective as of August 29, 2014, as amended by First Amendment thereto dated June 29, 2015 and Second Amendment thereto dated November 17, 2016.

1.4 "2016 MGH Agreement" means that certain Exclusive Patent License Agreement by and between MGH and Editas effective as of August 2, 2016.

1.5 "Accelerated Program" has the meaning set forth in Section 12.7.

1.6 "Acquiring Affiliate" means (a) any Third Party that acquires Editas through a Change of Control following the Amendment Date; and (b) such Third Party's Affiliates immediately prior to the effective date of such Change of Control.

1.7 "Additional Sublicense Terms" has the meaning set forth in Section 7.6(b).

1.8 "Additional Target" has the meaning set forth in Section 2.4(b).

1.9 "Affiliate" means any Person, whether *de jure* or *de facto*, which is directly or indirectly controlling, controlled by or under common control of a Party for so long as such control exists and regardless of whether such Affiliate is or becomes an Affiliate on or after the Amendment Date. For the purposes of this Section 1.9, "control" (including, with correlative meanings, the terms "controlled by" and "under common control with") means (a) direct or indirect ownership of fifty percent (50%) or more of the voting securities or other voting interest of any Person (including attribution from related parties), or if not meeting the preceding, the maximum voting right that may be held by the particular Party under the laws of the country where such entity exists; or (b) the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through ownership of voting securities, by contract, as a general partner, as a manager, or otherwise.

1.10 "Agreement" has the meaning set forth in the preamble.

1.11 "Allergan" means Allergan Pharmaceuticals International Limited.

1.12 "Allergan Agreement" means the Strategic Alliance and Option Agreement, by and between Editas and Allergan, dated as of March 14, 2017.

1.13 "Alliance Manager" has the meaning set forth in Section 4.1.

1.14 "Allocable Costs" has the meaning set forth in Section 7.6(b).

1.15 "Amendment Date" has the meaning set forth in the preamble.

1.16 "Antitrust Law" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder (the "HSR Act"), the Sherman Act, as amended, the Clayton Act, as amended, the Federal Trade Commission Act, as amended, and any other Laws of the United States, a state or territory thereof, or any foreign government or supranational body (including the European Commission) that are designed to prohibit, restrict or regulate actions having the purpose or effect of monopolization or restraint of trade.

1.17 "Arbitration Request" has the meaning set forth in Section 13.2(b).

1.18 "Bankruptcy Party" has the meaning set forth in Section 5.4.

1.19 "Base Editing" means [**].

1.20 "Base Editing Window" means a region within [**] nucleotides of a specific polynucleotide sequence bound by the nucleic acid binding protein.

1.21 "Base Editor" means [**].

1.22 "Beam" means Beam Therapeutics Inc.

1.23 "Beam Agreement" means that certain License Agreement by and between Editas and Beam, dated May 9, 2018.

1.24 "BLA" means a biologics license application, or similar application, submitted to the applicable Regulatory Authority in a jurisdiction in the Territory.

1.25 "BlueRock" means BlueRock Therapeutics LP.

1.26 "BlueRock Agreement" means that certain License and Collaboration Agreement by and between Editas and BlueRock, dated April 2, 2019.

1.27 "BlueRock Field" means [**].

1.28 "Broad" means the Broad Institute, Inc., a non-profit Massachusetts corporation.

1.29 "Business Day" means a day that is not a Saturday, Sunday or a day on which banking institutions in Seattle, Washington or Boston, Massachusetts are authorized by Law to remain closed.

1.30 "Calendar Quarter" means the period beginning on the Original Effective Date and ending on the last day of the calendar quarter in which the Original Effective Date falls, and thereafter each successive period of three (3) consecutive calendar months ending on the last day of March, June, September, or December, respectively; provided that the final Calendar Quarter shall end on the last day of the Term.

1.31 "Calendar Year" means the period beginning on the Original Effective Date and ending on December 31 of the calendar year in which the Original Effective Date falls, and thereafter each successive period of twelve (12) consecutive calendar months beginning on January 1 and ending on December 31; provided that the final Calendar Year shall end on the last day of the Term.

1.32 "Cas9-I Agreement" means the Amended and Restated Cas9-I License Agreement entered into by and among Harvard, Broad and Editas, dated as of December 16, 2016, as amended by that certain first amendment thereto dated March 3, 2017.

1.33 "Cas9-II Agreement" means the Cas9-II License Agreement by and between Broad and Editas, dated as of December 16, 2016.

1.34 "Change of Control" means, with respect to a Party, (a) a merger or consolidation of such Party with a Third Party which results in the voting securities of such Party outstanding immediately prior thereto ceasing to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such merger or consolidation; (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the owner of fifty percent (50%) or more of the combined voting power of such Party's outstanding securities other than through issuances by such Party of securities of such Party in a *bona fide* financing transaction or series of related bona fide financing transactions; or (c) the sale or other transfer to a Third Party of all or substantially all of such Party's assets or all or substantially all of such Party's business to which this Agreement relates.

1.35 "Claims" has the meaning set forth in Section 11.1(a).

1.36 "Clearance Date" has the meaning set forth in Section 3.5(b).

1.37 "Co-Exclusive Targets" has the meaning set forth in Section 2.4(b).

1.38 "Collaboration IP" means, collectively, the Collaboration Patents and Collaboration Know-How.

1.39 "Collaboration Know-How" means any and all Know-How that is created, conceived, discovered, developed, generated, invented, made or reduced to practice, by or on behalf of one or both Parties (or any of their respective Affiliates) during the Term, solely or jointly with any Third Party, in the course of activities conducted pursuant to the Research Program or otherwise in the performance of any obligations under this Agreement, including the results of the Research Program and any Collaboration RNP Complexes.

1.40 "Collaboration Patents" means all Patent Rights that claim Collaboration Know-How.

1.41 "Collaboration RNP Complex" means, with respect to a Collaboration Target, any RNP Complex that (a) modulates the expression of such Collaboration Target; and (b) is generated or delivered by or on behalf of Editas under the Research Program (including, for clarity, any such RNP Complex that was generated or developed by or on behalf of Editas prior

to the Amendment Date under the Original Agreement or the First Amended and Restated Agreement (or, with respect to an Additional Target, prior to the date that the Target is designated as an Additional Target pursuant to this Agreement)). For clarity, (i) a "Lead Candidate" or "Related Collaboration RNP Complex" shall remain included in the definition of "Collaboration RNP Complex" and (ii) Collaboration RNP Complex shall exclude all Lapsed Collaboration RNP Complexes.

1.42 "Collaboration Target" means (a) any Initial Collaboration Target, including Derivatives thereof; and (b) any Additional Targets designated by Juno in writing pursuant to Section 2.4(b), including Derivatives thereof.

1.43 "Commercialization" means any and all activities directed to the commercialization of a product, including commercial manufacturing (including Manufacturing) and commercial supply of a product, marketing, detailing, promotion, market research, distributing, order processing, handling returns and recalls, booking sales, customer service, administering and commercially selling such product, importing, exporting and transporting such product for commercial sale, and seeking of pricing and reimbursement of a product (if applicable), whether before or after Regulatory Approval has been obtained (including making, having made, using, importing, selling and offering for sale such product), as well all regulatory compliance with respect to the foregoing. For clarity, "Commercialization" does not include any clinical trial commenced after Regulatory Approval. When used as a verb, "Commercialize" means to engage in Commercialization.

1.44 "Commercially Reasonable Efforts" means, with respect to a Party, the efforts required in order to carry out a task in a diligent and sustained manner without undue interruption or delay, which level is at least commensurate with the level of effort that a similarly situated Third Party biopharmaceutical company would devote to a product of similar market potential and having similar commercial and scientific advantages and disadvantages resulting from its own research efforts or to which it has rights, taking into account its safety and efficacy, regulatory status, the competitiveness of the marketplace, its proprietary position, pricing, reimbursement, launching strategy and other market specific factors, and all other relevant factors.

1.45 "Confidential Information" has the meaning set forth in Section 8.1.

1.46 "Control," "Controls," "Controlled" or "Controlling" means, with respect to any IP (including Patent Rights and Know-How) or Confidential Information, the ability of a Party or its Affiliates, as applicable, (whether through ownership or license (other than a license granted in this Agreement)) to grant to the other Party the licenses or sublicenses as provided herein, or to otherwise disclose such IP or Confidential Information to the other Party, without violating the terms of any then-existing agreement with any Third Party at the time such Party or its Affiliates, as applicable, would be required hereunder to grant the other Party such license or sublicenses as provided herein or to otherwise disclose such IP or Confidential Information to the other Party.

1.47 "Cpf1 Agreement" means the Cpf1 License Agreement by and between Broad and Editas, dated as of December 16, 2016.

1.48 "Cure Period" has the meaning set forth in Section 12.2(a).

1.49 "Data Package" means, with respect to a given Program, a data package that may include each of the following: (a) all data related to such Program, including selection and ranking criteria for any Collaboration RNP Complex(es) within such Program; (b) a reasonably detailed analysis of the data related to such Program (which analysis shall be in an appropriate format); (c) a reasonably detailed summary of the Research activities conducted with respect to such Program (which summary shall be in an appropriate format); (d) a list of any exceptions to any of Editas' representations or warranties set forth in the License Agreement that Editas would need to include if the Parties enter into a Licensed Program Addendum for such Program, as well as a draft of all schedules and exhibits to the License Agreement, in each case, as proposed by Editas to be attached to the License Agreement with respect to such Program if the Parties enter into such a Licensed Program Addendum; (e) a description of any Third Party funding sources, including government funding, with respect to such Program or any Research Program activities conducted with respect to such Program; and (f) a description of any Subsequently Obtained IP for the applicable Collaboration RNP Complex(es), including Allocable Costs and Additional Sublicense Terms of such Subsequently Obtained IP (as determined pursuant to Section 7.6(b)).

1.50 "Derivative" means, with respect to a Target or antigen, all fragments, complexes, variants or post-translationally modified and mutated forms of such Target or antigen, as applicable.

1.51 "Derived T-Cell" means a T-Cell that is derived from a PSC cell or any other precursor cell.

1.52 "Designee" has the meaning set forth in Section 2.6(d)(iii).

1.53 "Development" means pre-clinical and clinical drug development activities, and other development activities, including: test method development and stability testing, toxicology, formulation, process development, manufacturing scale-up, development-stage manufacturing (including Manufacturing), quality assurance/quality control procedure development and performance with respect to clinical materials, statistical analysis and report writing and clinical studies, the preparation and submission of INDs and MAAs, regulatory affairs with respect to the foregoing and all other activities necessary or useful or otherwise requested or required by a Regulatory Authority or as a condition or in support of obtaining or maintaining a Regulatory Approval. When used as a verb, "Develop" means to engage in Development.

1.54 "Directed to" means, with respect to a given Target, that an RNP Complex (or any component thereof) recognizes or modulates such Target.

1.55 "Dispute" has the meaning set forth in Section 13.2(a).

1.56 "DOJ" has the meaning set forth in Section 3.5(b).

1.57 "Dollars" or "$" means the legal tender of the United States.

1.58 "Editas" has the meaning set forth in the preamble.

1.59 "Editas Background IP" means, collectively, the Editas Background Patents and Editas Background Know-How, but in all cases, expressly excluding any Collaboration IP.

1.60 "Editas Background Know-How" means any and all Know-How that is Controlled by Editas or any of its Affiliates (other than through the grant of a license from Juno or any of its Affiliates to Editas or any of its Affiliates) as of the Amendment Date or at any time thereafter until the end of the Term and that is (a) necessary or useful to research, develop, make, have made, import, use, offer to sell, sell or otherwise exploit any Collaboration RNP Complex or is otherwise related to the exploitation of any Collaboration Target; or (b) otherwise used by or on behalf of Editas or any of its Affiliates in the performance of the Research Program or any other obligations under this Agreement, but in all cases, expressly excluding any Collaboration Know-How and Excluded Know-How; provided, however, that, on a Program-by-Program basis, with respect to any Know-How that is Subsequently Obtained IP, such Know-How shall be included within the definition of Editas Background Know-How only if the provisions of Section 7.6(b) are met.

1.61 "Editas Background Patents" means any and all Patent Rights that are Controlled by Editas or any of its Affiliates (other than through the grant of a license from Juno or any of its Affiliates to Editas or any of its Affiliates) as of the Amendment Date or at any time thereafter until the end of the Term and that claim or cover (a) any Collaboration RNP Complex or Collaboration Target, or the research, development, making, having made, import, use, offering to sell, selling or other exploitation of any of the foregoing; or (b) any Editas Background Know-How, but in all cases, expressly excluding any Collaboration Patents and Excluded Patents; provided, however, that, on a Program-by-Program basis, with respect to any Patent Rights that are Subsequently Obtained IP, such Patent Rights shall be included within the definition of Editas Background Patents only if the provisions of Section 7.6(b) are met.

1.62 "Editas-BlueRock Joint Patents" has the meaning set forth in Section 7.2(a).

1.63 "Editas Collaboration IP" means any and all Collaboration IP that is created, conceived, discovered, developed, generated, invented, made or reduced to practice, by or on behalf of Editas (or any of its Affiliates), solely or jointly with any Third Party, but excluding any Joint Collaboration IP.

1.64 "Editas Collaboration Know-How" means any and all Collaboration Know-How included within the Editas Collaboration IP.

1.65 "Editas Collaboration Patents" means any and all Patent Rights that claim Editas Collaboration Know-How, including the Patent Rights set forth on Schedule 1.65.

1.66 "Editas Indemnitees" has the meaning set forth in Section 10.1.

1.67 "Editas Material Transfer Agreement" has the meaning set forth in Section 2.7(a).

1.68 "Editas Materials" means any and all Materials, including RNP Complexes (including any components or sequences thereof), compositions of matter, cells and cell lines, assays, imaging agents used to assess DNA modification, reagents, DNA sequences, internal controls and any other physical, biological or chemical material, in each case, that are (a) Controlled by Editas or its Affiliates and related to or necessary or reasonably useful to Research, Develop, Manufacture, Commercialize or otherwise exploit any Collaboration RNP Complex or otherwise related to any Collaboration Target; and (b)(i) created, conceived, discovered, developed, generated, invented, made or reduced to practice, by or on behalf of Editas (or any of its Affiliates), solely or jointly with any Third Party, in the performance of the Research Program or any other obligations under this Agreement or (ii) otherwise included or utilized by or on behalf of Editas or any of its Affiliates in the performance of the Research Program or any other obligations under this Agreement.

1.69 "EEA" means all countries that are officially recognized as member states of the European Economic Area at any particular time.

1.70 "Electronic Delivery" has the meaning set forth in Section 13.15.

1.71 "EMA" means the European Medicines Agency of the European Union, or the successor thereto.

1.72 "EU" means all countries that are officially recognized as member states of the European Union at any particular time, including the United Kingdom regardless of whether actually within the European Union.

1.73 "EU Data Protection Laws" has the meaning set forth in Section 2.8(e).

1.74 "Evaluation and Validation Period" has the meaning set forth in Section 2.6(b).

1.75 "Excluded Base Editing Non-Cancer Field" has the meaning set forth in Section 1.140.

1.76 "Excluded Know-How" means any Know-How that is Controlled by an Acquiring Affiliate, which Know-How (a) was Controlled by such Acquiring Affiliate immediately prior to the effective date of such Change of Control; or (b) first becomes Controlled by such Acquiring Affiliate on or after the effective date of such Change of Control (but is not Controlled by Editas or any of its Affiliates (excluding, for purposes of this provision, any Acquiring Affiliate)) and was developed, invented, obtained or otherwise Controlled by such Acquiring Affiliate independently of this Agreement and without the direct or indirect use of any Editas Background IP, Collaboration IP or Confidential Information of Juno or any of its Affiliates; provided, however, that, in all cases, Excluded Know-How shall not include any Know-How that is used by or on behalf of Editas or any of its Affiliates (including any Acquiring Affiliate) in the performance of the Research Program or any other obligations under this Agreement.

1.77 "Excluded Ocular Field" has the meaning set forth in Section 1.140.

1.78 "Excluded Patents" means any Patent Rights Controlled by an Acquiring Affiliate, which Patent Rights (a) were Controlled by such Acquiring Affiliate immediately prior to the effective date of such Change of Control; or (b) first became Controlled by such Acquiring Affiliate on or after the effective date of such Change of Control (but are not Controlled by Editas or any of its Affiliates (excluding, for purposes of this provision, any Acquiring Affiliate)) and solely claim Excluded Know-How; provided, however, that, in all cases, Excluded Patents shall not include any Patent Rights that are (i) any substitutions, divisionals, continuations, continuations-in-part, reissues, renewals, registrations, confirmations, re-examinations, extensions, supplementary protection certificates and the like of any Editas Background Patents, Editas Collaboration Patents or Joint Collaboration Patents that were Controlled by Editas (or any of its Affiliates) prior to such Change of Control, as well as any other Patent Rights that claim priority to any of any such Editas Background Patents, Editas Collaboration Patents or Joint Collaboration Patents, or (ii) practiced by or on behalf of Editas or any of its Affiliates (including any Acquiring Affiliate) in the performance of the Research Program or any other obligations under this Agreement.

1.79 "Exclusions Lists" has the meaning set forth in Section 1.199.

1.80 "Exclusive Field" means the use of Genome Editing Technology in connection with the Research, Development, Manufacture, Commercialization or other exploitation of (a) α-β T-Cells or (b) Other Derived T-Cells.

1.81 "Executive Officers" means (a) with respect to Editas, Chief Executive Officer; and (b) with respect to Juno, the [**].

1.82 "Existing Acquirer Program" has the meaning set forth in Section 5.3(b).

1.83 "Extension Term" has the meaning set forth in Section 2.2.

1.84 "FDA" means the Food and Drug Administration of the United States, or the successor thereto.

1.85 "First Amended and Restated Agreement" has the meaning set forth in the preamble.

1.86 "First Amended Effective Date" has the meaning set forth in the preamble.

1.87 "Force Majeure" has the meaning set forth in Section 13.5.

1.88 "Foundational In-License" means the Cas9-I Agreement, Cas9-II Agreement, Cpf1 Agreement, 2014 MGH Agreement or 2016 MGH Agreement and "Foundational In-Licenses" means the Cas9-I Agreement, Cas9-II Agreement, Cpf1 Agreement, 2014 MGH Agreement and 2016 MGH Agreement.

1.89 "FTC" has the meaning set forth in Section 3.5(b).

1.90 "GDPR" has the meaning set forth in Section 2.8(e).

1.91 "GenEdit Agreement" means the Collaboration and License Agreement by and between GenEdit, Inc. and Editas, dated as of October 8, 2019.

1.92 "Genome Editing Technology" means any and all technology used to edit or modify the genome of a cell.

1.93 "Good Clinical Practices" or "GCP" means the applicable then-current ethical and scientific quality standards for designing, conducting, recording, and reporting trials that involve the participation of human subjects as are required by applicable Regulatory Authorities or applicable Law in the relevant jurisdiction, including in the United States, Good Clinical Practices established through FDA guidances, and, outside the United States, Guidelines for Good Clinical Practice – ICH Harmonized Tripartite Guideline (ICH E6).

1.94 "Good Laboratory Practices" or "GLP" means the applicable then-current good laboratory practice standards as are required by applicable Regulatory Authorities or applicable Law in the relevant jurisdiction, including in the United States, those promulgated or endorsed by the FDA in U.S. 21 C.F.R. Part 58, or the equivalent thereof as promulgated or endorsed by the applicable Regulatory Authorities outside of the United States.

1.95 "Good Manufacturing Practices" or "GMP" means the applicable then-current standards relating to Manufacturing practices for fine chemicals, intermediates, bulk products or finished products, biologics, gene or cell therapy, as are required by applicable Regulatory Authorities or applicable Law in the relevant jurisdiction, including, as applicable, (a) all applicable requirements detailed in the FDA's current Good Manufacturing Practices regulations, U.S. 21 C.F.R. Parts 210 and 211; (b) all applicable requirements detailed in the EMA's "The Rules Governing Medicinal Products in the European Community, Volume IV, Good Manufacturing Practice for Medicinal Products"; and (c) all equivalent applicable Laws promulgated by any Governmental Authority having jurisdiction over the manufacture of the applicable compound or product, as applicable.

1.96 "Governmental Authority" means any (a) federal, state, local, municipal, foreign or other government; (b) governmental or quasi-governmental authority of any nature (including any governmental division, subdivision, department, agency, bureau, branch, office, commission, council, board, instrumentality, officer, official, representative, organization, unit, body or entity and any court or other tribunal); (c) multinational governmental organization or body; or (d) entity or body exercising, or entitled to exercise, any executive, legislative, judicial, administrative, regulatory, police, military or taxing authority or power of any nature.

1.97 "gRNA" means an oligonucleotide containing RNA, DNA, or other DNA/RNA modifications that can form a complex with an RGEN and mediate the specific targeting of that complex to a DNA sequence of interest.

1.98 "Harvard" means the President and Fellows of Harvard College, an educational and charitable corporation existing under the laws and the constitution of the Commonwealth of Massachusetts.

1.99 "Harvard-Broad License" means any of the Cas9-I Agreement, the Cas9-II Agreement or the Cpf1 Agreement and "Harvard-Broad Licenses" means the Cas9-I Agreement, the Cas9-II Agreement and the Cpf1 Agreement.

1.100 "HHMI" means the Howard Hughes Medical Institute.

1.101 "HHMI Indemnitees" means HHMI, and its trustees, officers, employees, and agents.

1.102 "HHMI Names" has the meaning set forth in Section 11.2.

1.103 "HIPAA" has the meaning set forth in Section 1.135.

1.104 "HSR Act" has the meaning set forth in Section 1.16.

1.105 "HSR Filing" has the meaning set forth in Section 3.5(b).

1.106 "[**]" means [**].

1.107 "Implementation Date" has the meaning set forth in Section 3.5(b).

1.108 "Increased Tax" has the meaning set forth in Section 6.5(d).

1.109 "IND" means an investigational new drug application (including any amendment or supplement thereto) submitted to the FDA pursuant to U.S. 21 C.F.R. Part 312, including any amendments thereto. References herein to IND shall include, to the extent applicable, any comparable filing(s) outside the U.S. for the investigation of any product in any other country or group of countries (such as a Clinical Trial Application in the EU).

1.110 "Indemnitee" has the meaning set forth in Section 10.3.

1.111 "Indemnitor" has the meaning set forth in Section 10.3.

1.112 "Initial Collaboration Targets" has the meaning set forth in Section 2.4(a).

1.113 "Initial Research Program Term" means the period beginning on the Amendment Date and ending on the five (5) year anniversary thereof.

1.114 "In-License Agreement" means any of (a) the Foundational In-Licenses; (b) the [**] Agreement; (c) the GenEdit Agreement or (d) any other agreement pursuant to which Editas or any of its Affiliates obtains a license under any Subsequently Obtained IP and such Subsequently Obtained IP is elected by Juno and included pursuant to Section 7.6(b).

1.115 "In-Licensor" means the Third Party(ies) that granted a license(s) under the terms of an In-License Agreement.

1.116 "Institution Indemnitees" means each Institution, Rockefeller, Iowa, UTokyo, Wageningen and MIT and each of their current and former directors, governing board members,

trustees, officers, faculty, affiliated investigators, medical and professional staff, employees, students, and agents and their respective successors, heirs and assigns.

1.117 "Institution Names" has the meaning set forth in Section 11.2.

1.118 "Institutions" means Harvard and Broad.

1.119 "Iowa" means the University of Iowa Research Foundation.

1.120 "IP" means intellectual property of any and all types, including Patent Rights, Know-How and copyrights, but excluding trademarks and trademark applications.

1.121 "iPSC" has the meaning set forth in Section 1.173.

1.122 "Joint Collaboration IP" means, collectively, any and all Joint Collaboration Know-How and Joint Collaboration Patents.

1.123 "Joint Collaboration Know-How" means any and all Collaboration Know-How that is created, conceived, discovered, developed, generated, invented, made or reduced to practice jointly by or on behalf of Editas or any of its Affiliates, on the one hand, and Juno or any of its Affiliates, on the other hand, including with any Third Party.

1.124 "Joint Collaboration Patents" means any and all Patent Rights that claim Joint Collaboration Know-How, including the Patent Rights set forth on Schedule 1.124.

1.125 "Joint Counsel" has the meaning set forth in Section 7.2(b).

1.126 "JSC" or "Joint Steering Committee" has the meaning set forth in Section 4.2.

1.127 "Juno" has the meaning set forth in the preamble.

1.128 "Juno Collaboration IP" means any and all Collaboration IP that is created, conceived, discovered, developed, generated, invented, made or reduced to practice, by or on behalf of Juno (or any of its Affiliates), solely or jointly with any Third Party, but excluding any Joint Collaboration IP.

1.129 "Juno Collaboration Know-How" means any and all Collaboration Know-How included within the Juno Collaboration IP.

1.130 "Juno Collaboration Patents" means any and all Patent Rights that claim Juno Collaboration Know-How.

1.131 "Juno Indemnitees" has the meaning set forth in Section 10.2.

1.132 "Juno Indemnitor" has the meaning set forth in Section 11.1(a).

1.133 "Know-How" means any and all proprietary (a) information, techniques, technology, practices, trade secrets, inventions, methods (including methods of use or

administration or dosing), knowledge, data, results and software and algorithms, including pharmacological, toxicological and clinical test data and results, compositions of matter, chemical structures and formulations, sequences, processes, formulae, techniques, research data, reports, standard operating procedures, batch records, manufacturing data, analytical and quality control data, analytical methods (including applicable reference standards), assays and research tools, in each case, whether patentable or not; and (b) tangible manifestations thereof, including any Materials.

1.134 "Lapsed Collaboration RNP Complex" means any Lead Candidate or Related Collaboration RNP Complex that is deemed to be a "Lapsed Collaboration RNP Complex" pursuant to Section 3.2(c).

1.135 "Law" means any and all applicable laws, statutes, rules, regulations, orders, judgments or ordinances having the effect of law of any national, multinational, federal, state, provincial, county, city or other political subdivision, including, to the extent applicable, GCP, GLP and GMP, as well as all applicable data protection and privacy laws, rules and regulations, including, to the extent applicable, the United States Department of Health and Human Services privacy rules under the Health Insurance Portability and Accountability Act of 1996 ("HIPAA") and the Health Information Technology for Economic and Clinical Health Act and the EU General Data Protection Regulation (2016/679), in each case, together with any then-current modification, amendment and re-enactment thereof, and any legislative provision substituted therefor.

1.136 "Lead Candidate" means any Collaboration RNP Complex that satisfies the Lead Candidate Selection Criteria as determined by the JSC in accordance with Section 2.6(b).

1.137 "Lead Candidate Notification" has the meaning set forth in Section 2.6(b).

1.138 "Lead Candidate Selection Criteria" means the criteria for selection of a Lead Candidate as determined by the JSC in accordance with Section 2.6(a), as such criteria may be amended from time to time by the JSC.

1.139 "License Agreement" has the meaning set forth in Section 3.1.

1.140 "Licensed Field" means the use of Genome Editing Technology in connection with the Research, Development, Manufacture, Commercialization or other exploitation of (a) α-β T-Cells or (b) Other Derived T-Cells; provided, however, that (i) to the extent that, due to the Allergan Agreement, Editas does not have the right to grant rights hereunder to Juno to use Genome Editing Technology on α-β T-Cell or Other Derived T-Cell products specifically intended for the treatment, control, mitigation, prevention or cure of any disease (excluding cancer) of the eye or its adnexa (the "Excluded Ocular Field"), then the Licensed Field shall exclude the Excluded Ocular Field and (ii) to the extent that, due to the Beam Agreement, Editas does not have the right to grant rights hereunder to Juno to use Base Editing technology on α-β T-Cell or Other Derived T-Cell products specifically intended for any field outside of cancer (the "Excluded Base Editing Non-Cancer Field"), then the Licensed Field shall exclude the Excluded Base Editing Non-Cancer Field.

1.141 "Licensed Program Addendum" has the meaning set forth in Section 3.1.

1.142 "Manufacture" or "Manufacturing" means any and all activities related to the manufacturing of a product or any component or ingredient thereof, including test method development and stability testing, formulation, process development, manufacturing scale-up whether before or after Regulatory Approval, manufacturing any product in bulk or finished form for Development or Commercialization (as applicable), including filling and finishing, packaging, labeling, shipping and holding, in-process and finished product testing, release of a product or any component or ingredient thereof, quality assurance and quality control activities related to manufacturing and release of a product, and regulatory activities related to any of the foregoing. When used as a verb, "Manufacture" means to engage in Manufacturing.

1.143 "Marketing Authorization Application" or "MAA" means a marketing authorization application, biologics license application (BLA) or similar application, as applicable, and all amendments and supplements thereto, submitted to the FDA, or any equivalent filing in a country or regulatory jurisdiction other than the U.S. with the applicable Regulatory Authority, to obtain marketing approval for a product, in a country or in a group of countries.

1.144 "Materials" means any and all tangible chemical or biological research materials that are used by or on behalf of a Party in, or provided or otherwise made available by one Party or any of its Affiliates to the other Party or any of its Affiliates for use in, the performance of the Research Program or any of its other obligations under this Agreement, including any Editas Materials.

1.145 "MCKD1" has the meaning set forth in Section 2.4(b).

1.146 "MGH" means The General Hospital Corporation, d/b/a Massachusetts General Hospital.

1.147 "MGH Indemnitees" means MGH and its affiliates and their respective trustees, directors, officers, medical and professional staff, employees, and agents and their respective successors, heirs and assigns.

1.148 "MGH License" means the 2014 MGH Agreement or the 2016 MGH Agreement and "MGH Licenses" means the 2014 MGH Agreement and the 2016 MGH Agreement.

1.149 "MHLW" means the Ministry of Health, Labour and Welfare of Japan, or the Pharmaceuticals and Medical Devices Agency of Japan (or any successor to either of them) as the case may be.

1.150 "MIT" means the Massachusetts Institute of Technology, a not-for-profit Massachusetts Corporation with a principal place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139.

1.151 "Non-Bankruptcy Party" has the meaning set forth in Section 5.4.

1.152 "Non-Publishing Party" has the meaning set forth in Section 8.6.

1.153 "Officials" has the meaning set forth in Section 2.8(b).

1.154 "Opt-In Right" has the meaning set forth in Section 3.1.

1.155 "Opt-In Right Exercise Notice" has the meaning set forth in Section 3.2(a).

1.156 "Opt-In Term" means, with respect to a given Program, the period beginning on the date on which Editas delivers to Juno the complete Data Package for such Program in accordance with Section 2.6(d)(i) or 2.6(d)(ii), as applicable, and ending [**] thereafter (as such period may be extended as set forth in Section 2.6(d)(iv), Section 3.2(b) or Section 7.6(b)); provided that if Juno exercises its Opt-In Right for a given Program in accordance with this Agreement, then the Opt-In Term for such Program shall automatically be deemed extended until the Parties enter into a Licensed Program Addendum for such Program, and upon execution thereof, the Opt-In Term for such Program shall automatically be deemed to expire.

1.157 "Original Agreement" has the meaning set forth in the preamble.

1.158 "Original Effective Date" has the meaning set forth in the preamble.

1.159 "Other Derived T-Cell" means any Derived T-Cell, but excluding any (a) α-β T-Cell or (b) γ-δ T-Cell.

1.160 "Party" or "Parties" means, respectively, Editas or Juno individually, or Editas and Juno collectively.

1.161 "Patent Challenge" means (a) with respect to a given Editas Background Patent (other than any such Patent Rights Controlled by Editas under the Harvard-Broad Licenses) or Editas Collaboration Patent, a challenge to the validity, patentability or enforceability of such Editas Background Patent or Editas Collaboration Patent, in a legal action or an administrative proceeding initiated by or on behalf of Juno or its Affiliate, but excluding any such challenge in defense of any claims raised by or on behalf of Editas (or any of its Affiliates, sublicensees or In-Licensors) against Juno (or any of its Affiliates), or otherwise in connection with an assertion of a cross-claim or a counter-claim; and (b) with respect to any Patent Rights Controlled by Editas under the Harvard-Broad Licenses, the patent challenge terms of Section 5.6 applicable to such Harvard-Broad License shall apply.

1.162 "Patent Rights" means (a) all patents and patent applications in any country or supranational jurisdiction worldwide; (b) any substitutions, divisionals, continuations, continuations-in-part, reissues, renewals, registrations, confirmations, re-examinations, extensions, supplementary protection certificates and the like of any such patents or patent applications; and (c) foreign counterparts of any of the foregoing.

1.163 "Payee Party" has the meaning set forth in Section 6.5(b).

1.164 "Paying Party" has the meaning set forth in Section 6.5(b).

1.165 "Payment" has the meaning set forth in Section 2.8(b).

1.166 "Permitted Purposes" has the meaning set forth in Section 2.7(a).

1.167 "Person" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture or other similar entity or organization, including a government or political subdivision, department or agency of a government.

1.168 "Personal Data" means any information relating to an identified or identifiable individual or otherwise as defined under applicable Laws.

1.169 "Program" means the Research Program, as related to a given Lead Candidate and any Related Collaboration RNP Complexes with respect to such Lead Candidate.

1.170 "Program Assets" has the meaning set forth in Section 3.3(a).

1.171 "Program-Specific Information" has the meaning set forth in Section 8.2.

1.172 "Prosecution and Maintenance" or "Prosecute and Maintain" means, with respect to Patent Rights, the preparation, filing, prosecution and maintenance of such Patent Rights, as well as re-examinations, reissues and appeals with respect to such Patent Rights, together with the initiation or defense of interferences, oppositions, inter partes review, re-examinations, derivations, post-grant proceedings and other similar proceedings (or other defense proceedings with respect to such Patent Rights, but excluding the defense of challenges to such Patent Rights as a counterclaim in an infringement proceeding) with respect to the particular Patent Rights, and any appeals therefrom. For clarification, "Prosecution and Maintenance" or "Prosecute and Maintain" shall not include any other enforcement actions taken with respect to Patent Rights.

1.173 "PSC" means any pluripotent stem cell, including any induced pluripotent stem cell ("iPSC").

1.174 "Publishing Party" has the meaning set forth in Section 8.6.

1.175 "Regulatory Approval" means any and all approvals, licenses and authorizations of the applicable Regulatory Authority necessary for the marketing and sale of a product for a particular indication in a country or region, and including the approvals by the applicable Regulatory Authority of any expansion or modification of the label for such indication.

1.176 "Regulatory Authority" means any national or supranational Governmental Authority, including the FDA in the U.S., the EMA in the EU and the MHLW in Japan, or any health regulatory authority in any country or region that is a counterpart to the foregoing agencies, in each case, that holds responsibility for Research, Development (including the conduct of clinical trials), Manufacture or Commercialization of, and the granting of Regulatory Approval for, a product, as applicable, in such country or region.

1.177 "Related Collaboration RNP Complex" means, with respect to a given Lead Candidate, any other Collaboration RNP Complex that (a) incorporates or contains the same

RGEN as such Lead Candidate; and (b) is Directed to the same Collaboration Target as such Lead Candidate.

1.178 "Relinquished Target" has the meaning set forth in Section 2.4(b).

1.179 "Research" means any and all research activities (including to characterize, screen, discover, identify, sequence, generate and develop) with respect to a Target or any Derivative thereof, product or Genome Editing Technology (including any RNP Complex or component or variant form thereof), including derivatization and other modification of a product or any component thereof (including modification, removal or replacement of, or addition to, any such Genome Editing Technology).

1.180 "Research Program" means (a) a collaborative program of Research related to α-β T-Cells, Other Derived T-Cells, Targets and Genome Editing Technology (including RNP Complexes), undertaken by the Parties pursuant to this Agreement, including all Programs and (b) all research conducted under the Original Agreement and the First Amended and Restated Agreement. For clarity, a Research Program shall not include any activities performed pursuant to the License Agreement.

1.181 "Research Program Term" means the period commencing on the Original Effective Date and ending upon the later of (a) the expiration of the Initial Research Program Term; and (b) in the event that the Research Program Term is extended in accordance with Section 2.2, the expiration of the last to expire Extension Term; provided, however, that the Research Program Term shall automatically expire upon the earlier termination of this Agreement in accordance with ARTICLE 12.

1.182 "RGEN" means an RNA-guided engineered nuclease (or any variant form thereof) that, when paired with gRNA, is able to interact with specific DNA sequences.

1.183 "RNP Complex" means a complex comprising a gRNA and RGEN.

1.184 "Rockefeller" means The Rockefeller University.

1.185 "SEC" has the meaning set forth in Section 8.4(a)(i).

1.186 "Section 365(n)" has the meaning set forth in Section 5.4.

1.187 "Securities Regulators" has the meaning set forth in Section 8.4(c).

1.188 "Subsequently Obtained IP" has the meaning set forth in Section 7.6(a).

1.189 "Target" means (a) a gene; and (b) any variant, isoform or polymorphism of any such gene.

1.190 "T-Cell" means a cell that expresses or has ever expressed one or more T-cell receptors.

1.191 "Term" has the meaning set forth in Section 12.1.

1.192 "Territory" means worldwide.

1.193 "Third Party" means any Person other than Editas and Juno, and their respective Affiliates.

1.194 "Third Party Claim" means any and all suits, claims, actions, proceedings, or demands brought by a Third Party against a Party (or the Editas Indemnitees or Juno Indemnitees, as applicable).

1.195 "Third Party Damages" means all losses, costs, claims, damages, judgments, liabilities or expenses of any kind or nature payable to a Third Party by a Party (or the Editas Indemnitees or Juno Indemnitees, as applicable) under a Third Party Claim (including reasonable attorneys' fees and other reasonable out-of-pocket costs of litigation in connection therewith).

1.196 "Transferred Editas Materials" has the meaning set forth in Section 2.7(a).

1.197 "United States" or "U.S." means the United States of America and all of its territories and possessions.

1.198 "UTokyo" means the University of Tokyo.

1.199 "Violation" means that Editas or any of its officers or directors or any other Editas personnel (or other permitted agents of Editas performing activities hereunder including any of Editas' Affiliates, Third Party contractors and their respective officers and directors) has been: (a) convicted of any of the felonies identified among the exclusion authorities listed on the U.S. Department of Health and Human Services, Office of Inspector General (OIG) website, including 42 U.S.C. § 1320a-7(a) (http://oig.hhs.gov/exclusions/authorities.asp); (b) identified in the OIG List of Excluded Individuals/Entities (LEIE) database (http://exclusions.oig.hhs.gov/) or otherwise excluded from contracting with the federal government (see the System for Award Management (formerly known as the Excluded Parties Listing System) at http://sam.gov/portal/public/SAM/); or (c) listed by any U.S. federal agency as being suspended, debarred, excluded or otherwise ineligible to participate in federal procurement or non-procurement programs, including under 21 U.S.C. § 335a (http://www.fda.gov/ora/compliance_ref/debar/) (each of (a), (b) and (c) collectively, the "Exclusions Lists").

1.200 "Wageningen" means Wageningen University.

ARTICLE 2
RESEARCH PROGRAM

2.1 Conduct of a Research Program.

(a) *General*. Subject to the terms and conditions set forth herein, during the Research Program Term, Editas may conduct Research activities under the Research Program with respect to each Collaboration Target.

(b) *Costs*. Commencing on the Amendment Date Editas shall be solely responsible for any and all costs and expenses incurred by or on behalf of Editas or any of its Affiliates in performance of any activities under the Research Program. From and after Juno's exercise of its Opt-In Right with respect to a Program, the Editas Research activities in the Research Program with respect to such Program pursuant to this Agreement shall cease.

(c) *Activities Under Research Program*. Editas may (in its discretion) conduct (or have conducted) Research activities during the Research Program Term for a Collaboration RNP Complex in connection with α-β T-Cells or Other Derived T-Cells only under and in accordance with this Agreement, and subject to Juno's Opt-In Rights hereunder. For clarity, nothing in this Section 2.1(c) is intended to limit or otherwise modify Editas' rights to conduct activities (including research, development, manufacturing or commercialization activities) outside of the Exclusive Field, even as such activities relate to the research and development of RNP Complexes Directed to Collaboration Targets. Editas shall be responsible for research strategy and the conduct of activities under the Research Program during the Research Program Term. Notwithstanding anything to the contrary set forth herein, if any Research activities are undertaken by or on behalf of Editas or any of its Affiliates (other than in the conduct of an Existing Acquirer Program by any Acquiring Affiliate) with respect to any RNP Complex Directed to a Collaboration Target in connection with α-β T-Cells or Other Derived T-Cells in the Exclusive Field (other than with respect to any Lapsed Collaboration RNP Complexes), then such activities shall automatically be deemed to be undertaken pursuant to a Program under this Agreement.

2.2 Extension of Research Program Term. The Initial Research Program Term may be extended for up to two (2) additional one (1) year periods (each, an "Extension Term") (i.e., seven (7) years total). Juno may elect the first Extension Term, by written notice to Editas no later than [**] prior to the expiration date of the Initial Research Program Term, subject to payment of the extension fee described in Section 6.3 no later than the expiration of the Initial Research Program Term. If the first Extension Term is effective, Juno may request a second Extension Term by written notice to Editas any time up to [**] prior to the expiration of the first Extension Term and, no later than [**] after Juno's request, Editas shall agree or refuse such second Extension Term request by written notice to Juno. If Editas agrees to such second Extension Term request, Juno shall pay the extension fee described in Section 6.3 no later than the expiration of the first Extension Term and the Research Program Term shall be extended until the expiration of the second Extension Term. If Editas refuses such second Extension Term request, the Research Program Term shall expire upon the expiration of the first Extension Term.

2.3 Use of Third Parties. Subject to the terms of this Agreement, each Party shall have the right to engage Affiliates or Third Party subcontractors to perform its obligations or exercise any of the rights under this Agreement; provided, however, that, except for the Third Party subcontractors set forth on Schedule 2.3, which subcontractors have been engaged by or behalf of Editas as of the Amendment Date, all such subcontractors utilized by Editas to conduct the Research Program shall be first discussed at the JSC. Any such Third Party subcontractor must have entered into a written agreement with such Party that includes terms and conditions in such written agreement: (a) protecting and limiting use and disclosure of Confidential Information comparable to the requirements under this Agreement, including in accordance with,

or on terms no less stringent than, ARTICLE 8; (b) unless otherwise mutually agreed by the Parties, requiring the Third Party subcontractor and its personnel to assign or irrevocably exclusively license to such Party all right, title and interest in and to any IP created, conceived, discovered, developed, generated, invented, made or reduced to practice in connection with performance of subcontracted activities that if such activities had been performed by such Party, would be subject to a license (or option for a license) granted by such Party to the other Party hereunder; provided, however, that such IP may exclude improvements to the specific proprietary platform technology of such Third Party subcontractor that are generally applicable to such Third Party subcontractor's business to the extent not primarily related to, or primarily developed with the use of, any Editas Background IP, Collaboration IP or Confidential Information of the other Party; and (c) obligating such Third Party subcontractor to comply with all applicable provisions of this Agreement, including Section 2.5 and Section 2.8; provided that, following discussion at the JSC, this clause (c) shall not apply with respect to those Third Party subcontractors set forth on Schedule 2.3, solely to the extent that such Third Party subcontractors are performing activities pursuant to agreements with Editas in effect as of the Amendment Date. Each Party shall ensure that any such Third Party subcontractor shall meet the qualifications typically required by such Party for the performance of work similar in scope and complexity to the subcontracted activity and shall perform such work consistent with the terms of this Agreement; provided, however, that each Party shall remain at all times fully liable for its responsibilities under this Agreement.

2.4 Collaboration Targets.

(a) *Initial Collaboration Targets*. The Parties agree that, as of the Amendment Date, there are nine (9) initial Collaboration Targets as set forth on Schedule 2.4(a) (the "Initial Collaboration Targets").

(b) *Additional Targets*. From the Amendment Date until the date that is [**] prior to the end of the Research Program Term, Juno shall have the right (in its sole discretion), from time to time, by delivery of written notice to Editas in accordance with this Section 2.4(b), to include as Collaboration Targets up to eleven (11) additional Targets, other than (i) [**], (ii) [**] and (iii) any Relinquished Target (each, an "Additional Target"). For clarity, Juno shall not be permitted to name any Additional Target(s) fewer than [**] prior to the end of the Research Program Term. Such notice shall identify with specificity the Target(s) that Juno wishes to add, so that Editas may distinguish it (them) from other Targets. Juno shall only designate Additional Targets under this Section 2.4(b) that Juno in good faith believes are suitable for the Research Program. Any Additional Target that Juno designates pursuant to this Section 2.4(b) shall be a Collaboration Target under this Agreement upon Juno providing such notice and Schedule 2.4(a) shall be updated to reflect such Additional Target. Notwithstanding anything to the contrary herein, Juno hereby acknowledges that Editas' license under the Harvard-Broad Licenses to the Targets set forth on Schedule 2.4(b) (the "Co-Exclusive Targets") is co-exclusive with certain Third Parties. In the event that Juno designates a Co-Exclusive Target as a Collaboration Target pursuant to this Section 2.4(b) and subsequently exercises its Opt-In Rights with respect to a Program Directed to such Collaboration Target, Juno hereby acknowledges and agrees that the Editas Background Patents and Editas Background Know-How that are licensed to Editas under the Harvard-Broad Licenses would be sublicensed to Juno pursuant to the License Agreement on

a co-exclusive basis with the applicable Third Party for such Program. Notwithstanding anything to the contrary herein, Juno hereby acknowledges that Editas' license under the Harvard-Broad Licenses to exploit IP for use in medullary cystic kidney disease 1 ("MCKD1") is non-exclusive. In the event that Juno designates a Target for MCKD1 pursuant to this Section 2.4(b) and subsequently exercises its Opt-In Rights with respect to a Program Directed to such Target, Juno hereby acknowledges and agrees that the Editas Background Patents and Editas Background Know-How that are licensed to Editas under the Harvard-Broad Licenses would be sublicensed to Juno pursuant to the License Agreement on a non-exclusive basis for such Program to the extent such IP is used in the MCKD1 field. As used herein, "Relinquished Target" shall mean a Target (other than a Collaboration Target) proposed by Institutions (including at the request of a Third Party) to be relinquished pursuant to the inclusive innovation model mechanics under the Harvard-Broad Licenses and that the Parties thereafter discuss in good faith and mutually agree in writing is reasonably unlikely to potentially be included as a Collaboration Target hereunder and therefore should be relinquished by Editas pursuant to the inclusive innovation model mechanics under the Harvard-Broad Licenses; provided that, for clarity, any Target that is not designated as a Relinquished Target shall not be required to be included as an Additional Target (but, for clarity, Juno shall not have any right to exercise an Opt-In Right as to any Program for such Target unless Juno first designates such Target as an Additional Target).

2.5 Records; Inspection. During the Term and for a period of [**] thereafter (or such longer period of time as may be required by applicable Law), Editas shall maintain complete, current and accurate records of the Research Program (or cause such records to be maintained) in sufficient detail and in good scientific manner and appropriate for regulatory and Prosecution and Maintenance purposes as shall properly reflect all work done and results achieved by or on behalf of Editas or any of its Affiliates in the performance of the Research Program (including all data), and shall be prepared and maintained in accordance with applicable Law, including, as applicable, GCP, GLP and GMP record keeping requirements where applicable.

2.6 Lead Candidate Selection Criteria; Data Package.

(a) *Lead Candidate Selection Criteria*. The initial Lead Candidate Selection Criteria may be established by the JSC. The JSC shall have the right to amend the Lead Candidate Selection Criteria from time to time, which amendments may be made on an overall basis or on a Program-by-Program basis.

(b) *Evaluation Against Lead Candidate Selection Criteria*. During the Research Program Term, Editas may notify the JSC of any Collaboration RNP Complexes (including the sequences thereof) identified by or on behalf of Editas or any of its Affiliates in the course of its ongoing Research activities pursuant to a Research Program that Editas reasonably believes has satisfied, or will satisfy within [**] of such notice, the Lead Candidate Selection Criteria (such notice, a "Lead Candidate Notification"). The Lead Candidate Notification shall include a schedule of any In-License Agreements (including for any Subsequently Obtained IP) relevant to the applicable proposed Lead Candidate and any Related Collaboration RNP Complex(es). Following Juno's receipt of a particular Lead Candidate Notification, the JSC shall discuss in good faith for a period of up to [**] whether the applicable Collaboration RNP Complex satisfies the Lead Candidate Selection Criteria (the "Evaluation and

Validation Period"). Subject to this Section 2.6(b) and Section 2.6(c), if the JSC determines that any such Collaboration RNP Complex satisfies the Lead Candidate Selection Criteria, thereafter such Collaboration RNP Complex shall be designated a "Lead Candidate." A description of each Lead Candidate designated by the JSC in accordance with this Section 2.6(b) (including material data in connection therewith and sequences thereof) shall be included in the minutes of the JSC.

(c) *Validation*. Notwithstanding anything to the contrary set forth herein, during the Evaluation and Validation Period Juno may conduct its own testing to determine whether or not the applicable Collaboration RNP Complex satisfies the Lead Candidate Selection Criteria (but, for clarity, Juno may not unilaterally determine that a Collaboration RNP Complex satisfies the Lead Candidate Selection Criteria). In accordance with Section 2.7(a), Editas shall provide Juno with (i) reasonable research-grade quantities, not to exceed [**], of the applicable Collaboration RNP Complex and (ii) reasonable research-grade quantities of any other Editas Materials and methods reasonably requested by Juno in order to enable Juno to conduct the activities described under this Section 2.6(c).

(d) *Data Package*.

(i) On a Program-by-Program basis, within [**] following the JSC's designation of the Lead Candidate for such Program pursuant to Section 2.6(b), Editas shall provide to Juno (or its Designee) a Data Package for the applicable Program.

(ii) Without limiting Section 2.6(d)(i), (A) at any time following the date that is [**] prior to the end of the Research Program Term, upon written notice and payment of [**] Dollars ($[**]) by Juno to Editas, or (B) in the event that Juno exercises its right pursuant to Section 12.7, upon written notice by Juno to Editas (but for clarity, without additional consideration), in each case of clause (A) or (B), Juno may request a Data Package related to any Collaboration RNP Complex previously identified by Editas (other than any Lapsed Collaboration RNP Complex). No later than [**] following receipt of such notice from Juno, Editas shall provide such Data Package to Juno or its Designee. Notwithstanding the foregoing, Editas shall not be required to (x) deliver more than [**] pursuant to this Section 2.6(d)(ii) related to any Program, or (y) include in any such Data Package data other than such data in Editas' (or its Affiliate's) possession as of the date of receipt of written notice from Juno under this Section 2.6(d)(ii). Any Collaboration RNP Complex for which Juno requests a Data Package pursuant to this Section 2.6(d)(ii) shall thereafter be deemed a "Lead Candidate."

(iii) Juno may designate one or more of its Affiliates or Third Party subcontractors or advisors (each, a "Designee") to provide assistance to Juno under this Agreement, including to receive a Data Package pursuant to this Section 2.6(d). Any such Designee shall, prior to receiving such Data Package, be bound by confidentiality obligations and restrictions on use consistent with those set forth in ARTICLE 8; provided, further, that Juno shall remain responsible for any failure by any Designee who receives Editas Confidential Information to treat such information in accordance with ARTICLE 8.

(iv) Upon receipt of a Data Package, Juno (or its Designee) shall review such Data Package, and Juno (or its Designee) shall notify Editas, no later than [**] after

receiving such Data Package, of any reasonable requests for additional information and records related to such Program that is within Editas' (or its Affiliates') Control, and Editas shall respond to such requests within [**] thereof. If Editas does not provide such reasonably requested additional information to Juno (or its Designee) within such [**] period, then the Opt-In Term with respect to such Program shall be extended by a period of time equal to the number of days after such [**] period during which Editas fails to provide such reasonably requested additional information. For clarity, Editas shall have no obligation to respond to unreasonable requests for additional information from Juno and such requests shall not function to extend the Opt-In Term with respect to any Program.

2.7 Technology Transfer.

(a) *Materials Transfer*. During the Research Program Term, at the request of Juno from time to time, Editas shall promptly transfer to Juno reasonably sufficient research-grade quantities of any Collaboration RNP Complexes or other Editas Materials as reasonably requested by Juno (collectively, the "Transferred Editas Materials"), solely for the following uses and purposes (the "Permitted Purposes"): (i) to conduct activities assigned to Juno by the JSC, (ii) following the commencement of the Evaluation and Validation Period with respect to a Program, to determine whether the applicable Collaboration RNP Complex meets the Lead Candidate Selection Criteria in accordance with Section 2.6(c), (iii) following Data Package delivery for a particular Lead Candidate to evaluate whether to exercise its Opt-In Right with respect to the applicable Program and to prepare for the conduct of Development activities following the potential exercise of such Opt-In Right (including to grow and develop cell lines, develop assays and conduct other tests and activities to evaluate the Opt-In Right and to prepare for the conduct of Development activities following the potential exercise of the Opt-In Right), and (iv) for such other purposes as may be agreed to by the Parties in writing. All transfers of such Transferred Editas Materials by Editas to Juno shall be documented in a material transfer agreement in the form set forth on Exhibit B (an "Editas Material Transfer Agreement"), and shall set forth the type and name of the Transferred Editas Materials, the amount of the Transferred Editas Materials transferred and the date of the transfer of such Transferred Editas Materials. In no event shall Editas be required under this Agreement to provide to Juno (A) more than [**] of a particular Collaboration RNP Complex or (B) any Editas Materials (including RNP Complexes) of a quality higher than research grade. Juno shall only use the Transferred Editas Materials provided pursuant to this Section 2.7(a) for the Permitted Purposes and Juno shall use such Transferred Editas Materials in compliance with applicable Law, the terms and conditions of the Editas Material Transfer Agreement and this Agreement.

(b) *License; Ownership.* In connection with the Transferred Editas Materials for the Permitted Purposes, Editas shall grant, and hereby does grant effective upon entering into the applicable Editas Material Transfer Agreement, to Juno a non-exclusive, non-sublicensable (other than to its Affiliates and Third Party subcontractors performing the Permitted Purposes on behalf of Juno), license under the Patent Rights and Know-How Controlled by Editas necessary to use such Transferred Editas Materials solely for the Permitted Purposes. Except as otherwise provided under this Agreement, all such Transferred Editas Materials delivered by Editas to Juno shall remain the sole property of Editas, shall only be used by Juno in furtherance of the Permitted Purposes, and, subject to ARTICLE 12, shall be returned to Editas or destroyed, in

Editas' sole discretion, on a Program-by-Program basis upon the earliest to occur of (i) termination of this Agreement or the Editas Material Transfer Agreement, (ii) completion of the Permitted Purposes, (iii) discontinuation of the use of such Transferred Editas Materials by Juno, or (iv) the expiration of the Opt-In Term with respect to the Program to which the Transferred Editas Materials relate (provided that Juno shall not be required to return or destroy the applicable Transferred Editas Materials if Juno exercises its Opt-In Right for the applicable Program).

(c) *No Warranty*. ALL EDITAS MATERIALS TRANSFERRED PURSUANT TO AN EDITAS MATERIAL TRANSFER AGREEMENT OR PURSUANT TO SECTION 2.6(C) ARE PROVIDED "AS IS" AND WITHOUT ANY REPRESENTATION OR WARRANTY, EXPRESS OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE OR ANY WARRANTY THAT THE USE OF THE MATERIALS WILL NOT INFRINGE OR VIOLATE ANY PATENT RIGHTS OR OTHER PROPRIETARY RIGHT OF ANY THIRD PARTY. ALL EDITAS MATERIALS ARE EXPERIMENTAL IN NATURE AND SHALL BE USED BY JUNO WITH PRUDENCE AND APPROPRIATE CAUTION, AS NOT ALL OF THEIR CHARACTERISTICS MAY BE KNOWN.

(d) *License Agreements*. Notwithstanding the foregoing provisions of this Section 2.7, nothing in this Section 2.7 or the Editas Material Transfer Agreement shall limit any rights of the Parties under the License Agreement, including with respect to any Transferred Editas Materials, and the provisions of this Section 2.7 shall not apply with respect to applicable Transferred Editas Materials from and after execution of the Licensed Program Addendum for the applicable Program.

2.8 Compliance Provisions.

(a) *General*. To the extent that activities are conducted by or on behalf of a Party or its Affiliates pursuant to this Agreement, including all Research activities, as applicable, such Party shall ensure that such activities are conducted in compliance with all applicable Laws (including, to the extent applicable, GCP, GLP and GMP), and good business ethics, and such Party will promptly notify the other Party in writing after it becomes aware of any deviations from any of the foregoing. In addition, each Party hereby certifies that it has not employed or otherwise used in any capacity, and will not employ or otherwise use in any capacity, the services of any Person (i) debarred under United States law (including 21 U.S.C. § 335a) or any foreign equivalent thereof, or (ii) that is the subject of an FDA debarment investigation or proceeding (or similar proceeding by any Regulatory Authority outside the United States), in each case, in performing any portion of the activities hereunder, including any Research activities. Each Party will notify the other Party in writing immediately if any such debarment occurs or comes to its attention, and will, with respect to any person or entity so debarred promptly remove such person or entity from performing any such activities, function or capacity related to any such activities.

(b) *Governments and International Public Organizations*. Neither Party will make any payment (and each Party shall direct that its Affiliates and subcontractors do not make any payment), either directly or indirectly, of money or other assets, including (with respect to

Editas) any compensation such Party derives from this Agreement (hereinafter collectively referred to as a "Payment"), to government or political party officials, officials of international public organizations, candidates for public office, or representatives of other businesses or persons acting on behalf of any of the foregoing (hereinafter collectively referred to as "Officials") where such Payment would constitute a violation of any applicable Law. In addition, regardless of legality, neither Party will make any Payment (and will ensure that its Affiliates and subcontractors make no payment), either directly or indirectly to Officials if such Payment is for the purpose of influencing decisions or actions with respect to the subject matter of this Agreement or any other aspect of such Party's business.

(c) *No Authority*. Each Party acknowledges that no employee of the other Party or its Affiliates will have authority to give any direction, either written or oral, relating to the making of any commitment by such Party or its agents to any Third Party in violation of terms of this or any other provisions of this Agreement.

(d) *Exclusions Lists*. Neither Party will use (and will cause its Affiliates and subcontractors not to use) in the performance of the Research Program or other activities under this Agreement any Person (including any employee, officer, director or Third Party contractor) who is (or has been) on the Exclusions List, or who is (or has been) in Violation, in the performance of any activities hereunder. Each Party certifies to the other Party, as of the Amendment Date, such Party has screened itself, and its officers and directors (and its Affiliates or subcontractors, and their respective officers and directors) against the Exclusions Lists and that it has informed the other Party in writing whether such Party, or any of its officers or directors (or any of its Affiliates or subcontractors or any of their respective officers and directors) has been in Violation. After the execution of this Agreement, each Party will notify the other Party in writing immediately if any such Violation occurs or comes to its attention.

(e) *Personal Data*. Editas shall, to the extent applicable, ensure that all Personal Data disclosed or transferred under this Agreement, if any, is processed in accordance with applicable Laws, including the fair and lawful collection and processing of such Personal Data, the disclosure of such Personal Data to Juno in accordance with this Agreement and the transfer of such Personal Data (including any transfer from inside the EEA, UK or Switzerland to outside the EEA), including any applicable European law or regulation (such as the EU General Data Protection Regulation (2016/679) ("GDPR")) relating to the protection of Personal Data and all Laws implementing or supplementing the GDPR (collectively, "EU Data Protection Laws") and HIPAA. Editas shall promptly notify Juno if it becomes aware that any data, including Personal Data, provided to Juno under this Agreement is inaccurate or has been unlawfully obtained or processed or, where consent to process Personal Data has been provided, consent is withdrawn or Editas becomes aware that consent may not be reliable or any other processing ground is no longer applicable. Editas further covenants that any data or information that it provides to Juno under this Agreement will be anonymized and de-identified, with respect to any identified or identifiable natural person, to the extent applicable, as those terms are defined or interpreted pursuant to EU Data Protection Laws and HIPAA. Finally, Editas represents and warrants that it has the full right to provide any such Personal Data or Protected Health Information (as such term is defined under the EU Data Protection Laws or HIPAA, as applicable), as well as any tissue, fluid, or cells collected from a patient, or components of the

foregoing, that it provides to Juno under this Agreement to use solely as is permitted in accordance with this Agreement and the License Agreement.

2.9 Original Agreement and First Amended and Restated Agreement. The Parties hereby agree and acknowledge that all activities conducted under the Original Agreement or First Amended and Restated Agreement, as applicable, shall be deemed to have been conducted under this Agreement.

ARTICLE 3
OPT-IN RIGHTS

3.1 Opt-In Grant. Subject to the terms and conditions of this Agreement, on a Program-by-Program basis, Editas hereby grants to Juno an exclusive right (each, an "Opt-In Right"), exercisable at any time during the applicable Opt-In Term, in Juno's sole discretion, to enter into an exclusive license agreement with respect to a given Program, which license shall be effected by the execution of a Licensed Program Addendum (the "Licensed Program Addendum") in the form set forth as Schedule 2.1 to the License Agreement, which shall be appended to the license agreement set forth on Exhibit A (the "License Agreement"). For the avoidance of doubt, (i) Juno shall not be required to exercise its Opt-In Right for any given Program and (ii) if Juno determines, in its discretion, to exercise its Opt-In Right for a given Program, Juno shall only be required to exercise its Opt-In Right for such Program [**] (and shall only be required to pay one Opt-In Exercise Fee (as defined in the License Agreement) for such Program [**]) regardless of the number of Collaboration RNP Complexes (including the Lead Candidate) under such Program. Editas acknowledges and agrees that all Opt-In Rights granted by Editas to Juno as set forth herein will be granted by Editas exclusively to Juno until the end of the applicable Opt-In Term for the applicable Program, and, during such Opt-In Term, Editas shall not (and shall ensure that its Affiliates do not) grant any options (or other rights) to any other Person that would conflict with or are inconsistent with the Opt-In Rights granted to Juno hereunder. During the period from the receipt of the Data Package for a given Program until the end of the Opt-In Term for such Program, Editas will promptly respond to any of Juno's reasonable requests for additional information in Editas' (or its Affiliate's) possession and clarifications relating to such Data Package.

3.2 Opt-In Right Exercise.

(a) *Opt-In Right.* On a Program-by-Program basis, at any time during the applicable Opt-In Term, Juno shall have the right, but not the obligation, to exercise the Opt-In Right for such Program in its sole discretion by delivering written notice of such exercise to Editas prior to the end of the applicable Opt-In Term (the "Opt-In Right Exercise Notice"). Following each Opt-In Right Exercise Notice delivery, Editas shall prepare and submit to Juno for review a draft of the Licensed Program Addendum with respect to such Program (including completing the exhibits and schedules or updates thereto in order to incorporate such Program as a Licensed Program (as such term is defined in the License Agreement)) and, within [**] following Juno's receipt of such draft Licensed Program Addendum, subject to Section 3.5, Juno (or an Affiliate designated by Juno) and Editas shall execute the Licensed Program Addendum for such Program. For clarity, the Licensed Program Addendum shall serve only to add the Licensed Program to the License Agreement on the same terms and conditions set forth therein.

Neither Party shall be required to waive or amend any provision of the License Agreement in connection with the execution of any Licensed Program Addendum. Subject to Section 3.5, effective on the date of such Opt-In Right Exercise Notice and until the execution of such Licensed Program Addendum, the licenses to Juno set forth in the License Agreement are hereby granted by Editas to Juno with respect to the applicable Program (including the applicable Lead Candidate and Related Collaboration RNP Complexes in connection therewith), subject to, and in accordance with, the terms and conditions of the License Agreement; provided that if Editas executes the Licensed Program Addendum, but Juno does not execute such Licensed Program Addendum (other than as a result of any act or omission of Editas) within [**] following Juno's receipt of a complete draft of the Licensed Program Addendum in accordance with this Section 3.2(a), then the license granted in this sentence shall automatically terminate; provided, however, that, except as otherwise expressly provided herein, the Parties' other rights and obligations under this ARTICLE 3 shall remain in full force and effect.

(b) *Extension of Opt-In Term*. With respect to an Opt-In Right for a given Program, upon mutual agreement of the Parties, the Opt-In Term for such Opt-In Right shall be extended for a [**] extension term in order for Juno to further evaluate the Data Package for the applicable Program and determine whether to exercise its Opt-In Right for such Program.

(c) *Lapsed Collaboration RNP Complex*. If Juno does not exercise its Opt-In Right for a given Program in accordance with this Agreement prior to the end of the Opt-In Term (including any extension taken pursuant to Section 3.2(b)) for such Program, then (i) the applicable Lead Candidate and (ii) each Related Collaboration RNP Complex that was expressly identified in the Data Package for such Program, in each case ((i) and (ii)), shall be deemed to be a "Lapsed Collaboration RNP Complex" for purposes of this Agreement, the Research Program for such Lapsed Collaboration RNP Complex shall promptly cease, and this Agreement shall be deemed terminated with respect to such Lapsed Collaboration RNP Complex (subject to Section 12.6).

(d) *Certain Remedies*. Each Party agrees and acknowledges that if Juno exercises the applicable Opt-In Right for a given Program, then any failure by either Party to thereafter enter into a Licensed Program Addendum for such Program in accordance with this Section 3.2 would cause severe and irreparable damage to the other Party, for which money damages may represent an insufficient remedy, and in such event, notwithstanding the provisions of Section 13.2, the other Party shall be authorized and entitled to seek from any court of competent jurisdiction specific performance with respect to such violation as well as any other relief permitted by applicable Law, and may obtain that relief without making a showing of insufficiency of money damages or irreparable harm. Each Party agrees to waive any requirement that the other Party post bond as a condition for obtaining any such relief. The remedies described in this Section 3.2(d) shall be in addition to any other remedies available to either Party hereunder or at law or in equity.

3.3 Covenants.

(a) *No Conflicts*. On a Program-by-Program basis during the period beginning on the Amendment Date and ending upon the expiration of the Opt-In Term for such Program, Editas shall not, and shall cause its Affiliates not to, subject to Section 3.3(b), (i)

assign, transfer, convey, encumber (through any liens, charges, security interests, mortgages, or similar actions) or dispose of, or enter into any agreement with any Third Party to assign, transfer, convey, encumber (through lien, charge, security interest, mortgage, or similar action) or dispose of, any Editas Background IP, Editas Collaboration IP or any IP or other rights related to any Collaboration Target or Collaboration RNP Complexes that are necessary or useful for the conduct of any Research Program with respect to such Collaboration Target or Collaboration RNP Complexes or for the exercise of any rights of Juno under the License Agreement with respect to such Collaboration Target or Collaboration RNP Complexes, or other Materials generated under such Program (collectively, the "Program Assets"), except to the extent such assignment, transfer, conveyance, encumbrance or disposition would not conflict with, be inconsistent with or adversely affect in any material respect any of the rights or licenses granted to Juno hereunder, including the Opt-In Rights, or that may be granted under the License Agreement, or (ii) license or grant to any Third Party, or agree to license or grant to any Third Party, any rights to any Program Assets if such license or grant would conflict with, or be inconsistent with or adversely affect in any material respect any of the rights or licenses granted to Juno hereunder, including the Opt-In Rights, or that may be granted under the License Agreement. During the Term, Editas shall maintain Control of all Program Assets such that the Program Assets are available to license to Juno in accordance with this Agreement and the License Agreement. For the avoidance of doubt, the Parties agree and acknowledge that the restrictions described in clauses (i) and (ii) of the foregoing sentence shall not apply with respect to any Lapsed Collaboration RNP Complex.

(b) *Ordinary Course of Business*. Without limiting the provisions of Section 3.3(a), subject to the other applicable terms and conditions of this Agreement, during the Term, Editas shall operate and maintain the Program Assets in the ordinary course of business, and in compliance with applicable Law. Except (i) for amendments, modifications or termination of an In-License Agreement with respect to Know-How or Patent Rights that solely claim Genome Editing Technology that is not used (nor intended to be used, as determined by Editas in its sole discretion) in the Research Program, or (ii) to the extent Editas is legally required by a future court order to make any amendments or modifications to an In-License Agreement, Editas (A) shall not amend, modify, terminate, assign, make an election under or transfer any such In-License Agreement (other than an assignment to an Affiliate or successor of Editas receiving an assignment of this Agreement as permitted under Section 13.4(a)) unless Editas otherwise obtains Juno's prior written consent (such consent not to be unreasonably withheld, conditioned or delayed) if doing so would conflict with or otherwise adversely affect any of the rights or licenses (including the Opt-In Rights) granted to Juno hereunder or to be granted under the License Agreement; (B) shall not breach, or commit any acts or permit the occurrence of any omissions that would cause the material breach or termination, of any such In-License Agreement; (C) shall satisfy all of its obligations under each such In-License Agreement in all material respects; (D) shall maintain each such In-License Agreement in full force and effect; (E) shall enforce its rights under each such In-License Agreement to preserve any rights or licenses grant to Juno under this Agreement (including the Opt-In Rights) or to be granted under the License Agreement; and (F) shall provide Juno with prompt written notice of any claim of a breach of which it is aware under any such In-License Agreements or notice of termination of any such In-License Agreement. Without limiting the foregoing, if Editas intends to take any action or inaction to terminate any In-License Agreement (in whole or in part) Editas shall use

Commercially Reasonable Efforts to provide Juno with an opportunity to obtain a direct license from the applicable Third Party.

3.4 Tax Matters. Notwithstanding anything to the contrary in this Agreement or the License Agreement, including the use of the terms "option" or "opt-in" (or any derivations thereof), the Parties hereby agree and acknowledge that none of the Opt-In Rights will be treated as options for U.S. federal (or applicable state or local) income tax purposes, and the Parties agree not to take any position inconsistent with the foregoing.

3.5 Government Approvals.

(a) *Efforts*. Each of Editas and Juno will use its commercially reasonable good faith efforts to eliminate any concern on the part of any Governmental Authority regarding the legality of any proposed Licensed Program Addendum (or exercise of any rights or licenses under the License Agreement with respect to the applicable Program) under any Antitrust Law, including, if required by any Governmental Authority, promptly taking all steps to secure government antitrust clearance or cause the expiration or termination of any applicable waiting periods, including cooperating in good faith with any government investigation including the prompt production of documents and information demanded by a second request and of witnesses if requested. Notwithstanding the foregoing, this Section 3.5 and the term "commercially reasonable good faith efforts" do not require that either Party (or any of their respective Affiliates) (i) offer, negotiate, commit to or effect, by consent decree, hold separate order, trust or otherwise, the sale, divestiture, license or other disposition of any capital stock, assets, rights, products or businesses of Editas, Juno or their respective Affiliates, (ii) agree to any restrictions on the businesses of Editas, Juno or their respective Affiliates, or (iii) pay any amount or take any other action to prevent, effect the dissolution of, vacate, or lift any decree, order, judgment, injunction, temporary restraining order, or other order in any suit or proceeding that would otherwise have the effect of preventing or delaying the transactions contemplated by any proposed Licensed Program Addendum.

(b) *Filings*. At the written request of Juno, each of Editas and Juno will, within ten (10) Business Days after the execution of a Licensed Program Addendum (or at such later time as may be agreed to in writing by the Parties), as applicable, file with the U.S. Federal Trade Commission ("FTC") and the Antitrust Division of the U.S. Department of Justice ("DOJ") any HSR Filing required of it under the HSR Act in the reasonable opinion of Juno with respect to the transactions contemplated by the License Agreement with respect to the applicable Program, as well as any other similar filing with any other Governmental Authority as reasonably determined by Juno; provided that, if Juno determines that no such HSR Filing is required on any basis other than valuation pursuant to 16 C.F.R. § 801.10, it shall provide notice to Editas or its counsel and the Parties shall cooperate in good faith to resolve any disagreement as to whether an HSR Filing is required. The Parties shall cooperate with one another to determine any other similar filings with any other Governmental Authority, and to the extent necessary shall cooperate in the preparation of any such HSR Filing (as well as any other similar filing with any other Governmental Authority). Each Party shall be responsible for its own costs and expenses associated with any HSR Filing as well as any other similar filing with any other Governmental Authority; provided, however, that the Parties shall share equally all filing fees (other than penalties that may be incurred as a result of actions or omissions on the part of a

Party, which penalties shall be the sole financial responsibility of such Party) required to be paid to any Governmental Authority in connection with making any such HSR Filing (as well as any other similar filing with any other Governmental Authority). If the Parties make an HSR Filing (or any other similar filing with any other Governmental Authority) under this Section 3.5(b), the License Agreement shall terminate with respect to the applicable Program (i) (A) at the election of Juno, immediately upon notice to Editas, if the FTC or DOJ (or other applicable Governmental Authority) obtains a preliminary injunction under the HSR Act (or other applicable Antitrust Law) against the Parties to enjoin the transactions contemplated by the License Agreement with respect to such Program or (B) at the election of either Party, if such preliminary injunction has not been resolved within one (1) year following such preliminary injunction, or (ii) at the election of Juno, immediately upon notice to Editas, if the Clearance Date shall not have occurred on or prior to two hundred seventy (270) days after the effective date of the HSR Filing (or other similar filing with any other Governmental Authority). Notwithstanding anything to the contrary contained herein, except for the terms and conditions of this Section 3.5(b), none of the terms and conditions contained in the License Agreement with respect to the applicable Program (in each case, including any obligation of Juno to make any payments thereunder), as applicable, shall be effective until the "Implementation Date", which is agreed and understood to mean the later of (A) the date of execution of the applicable Licensed Program Addendum, or (B) if pursuant to this Section 3.5(b) a notification of the execution of such Licensed Program Addendum is made under the HSR Act (or any other similar filing with any other Governmental Authority), the Clearance Date. As used herein: (1) "Clearance Date" means the date on which all applicable waiting periods under the HSR Act (and other applicable Antitrust Law, as applicable) with respect to the transactions contemplated by the License Agreement with respect to the applicable Program have expired or have been terminated; and (2) "HSR Filing" means a filing by Editas and Juno with the FTC and the DOJ of a Notification and Report Form for Certain Mergers and Acquisitions (as that term is defined in the HSR Act) with respect to the matters set forth in the License Agreement with respect to the applicable Program together with all required documentary attachments thereto.

(c) *Information Exchange*. Each of Editas and Juno will, in connection with any HSR Filing (as well as any other similar filing with any other Governmental Authority as reasonably determined by Juno), (i) reasonably cooperate with each other in connection with any communication, filing or submission and in connection with any investigation or other inquiry (including any proceeding initiated by a private party), (ii) keep the other Party or its counsel informed of any communication received by such Party from, or given by such Party to, the FTC, the DOJ or any other Governmental Authority (including any communication received or given in connection with any proceeding by a private party), in each case regarding the transactions contemplated by the License Agreement and any proposed Licensed Program Addendum, (iii) consult with each other in advance of any meeting or conference with the FTC, the DOJ or any other Governmental Authority (or, in connection with any proceeding by a private party, with such private party), and to the extent permitted by the FTC, the DOJ or such other Governmental Authority (or such private party), give the other Party or their counsel the opportunity to attend and participate in such meetings and conferences and (iv) permit the other Party or its counsel to review in advance any submission, filing or communication (and documents submitted therewith) intended to be given by it to the FTC, the DOJ or any other Governmental Authority (or, in connection with any proceeding by a private party, to such

private party); provided that materials may be redacted to remove references concerning Juno's valuation of the business of Editas. Editas and Juno, as each deems advisable and necessary, may reasonably designate any competitively sensitive material to be provided to the other under this Section 3.5(c) as "Antitrust Counsel Only Material". Such materials and the information contained therein shall be given only to the outside antitrust counsel of the recipient and will not be disclosed by such outside counsel to employees, officers or directors of the recipient unless express permission is obtained in advance from the source of the materials (Editas or Juno, as the case may be) or the applicable Party's legal counsel.

(d) *Assistance*. Subject to this Section 3.5, at the reasonable request of Juno, Editas and Juno shall cooperate and use respectively all commercially reasonable good faith efforts to make all other registrations, filings and applications, in order to obtain as soon as practicable all governmental or other consents, transfers, approvals, orders, qualifications, authorizations, permits and waivers, if any, and to do all other things necessary for the consummation of the transactions as contemplated by the License Agreement and any proposed Licensed Program Addendum in accordance with applicable Antitrust Laws.

(e) *No Further Obligations*. If a License Agreement is terminated with respect to a given Program pursuant to this Section 3.5, then, notwithstanding any provision in this Agreement to the contrary, neither Party shall have any obligation to the other Party with respect to the subject matter of such License Agreement solely as it relates to such Program, including any payment obligations on the part of Juno (and to the extent any Opt-In Exercise Fee (as defined in the License Agreement) or any other payments have been made, such amounts shall be immediately refunded from Editas to Juno), in each case, to the extent related to such Program; provided that Juno shall be permitted to assign the applicable Licensed Program Addendum or the License Agreement, or any rights or obligations related thereto, to comply with any Antitrust Law (in which event such Opt-In Exercise Fee (as defined in the License Agreement) need not be refunded by Editas). For the avoidance of doubt, termination of the License Agreement with respect to a given Program pursuant to this Section 3.5 shall not affect in any way the terms or provisions of the License Agreement with respect to any other Licensed Program (as such term is defined in the License Agreement) and the License Agreement shall continue in full force and in effect with respect thereto.

3.6 License Agreement and Licensed Program Addendum. Notwithstanding anything to the contrary set forth herein, if a Licensed Program Addendum is entered into with respect to a given Program, then, except as otherwise expressly set forth in the License Agreement, Editas' conduct of the Research Program solely with respect to the Licensed Program hereunder shall cease, matters related to such Program shall no longer continue to be within the purview of the JSC or otherwise subject to the terms of this Agreement, and the provisions of the License Agreement shall thereafter control with respect to such Program (including the applicable Lead Candidate and Related Collaboration RNP Complex(es) for such Program).

ARTICLE 4
GOVERNANCE

4.1 Alliance Managers. Each Party has appointed a senior representative having a general understanding of cell therapy discovery and research issues to act as its alliance manager

under this Agreement (each, an "Alliance Manager"). The Alliance Managers will serve as the contact point between the Parties with respect to the Research Program, and will be primarily responsible for, among other things: (a) facilitating the flow of information and otherwise promoting communication, coordination of the day-to-day work and collaboration between the Parties; (b) providing single point communication for seeking consensus internally within the respective Party's organization; and (c) raising cross-Party or cross-functional disputes in a timely manner. The Alliance Managers shall conduct regular telephone conferences as deemed necessary or appropriate, to exchange informal information regarding the progress of the Research Program. Each Party may change its designated Alliance Manager from time to time upon prior written notice to the other Party. Each Alliance Manager may designate a substitute to temporarily perform the functions of that Alliance Manager by prior written notice to the other Party.

4.2 Joint Steering Committee. Juno and Editas have established a joint steering committee (the "Joint Steering Committee" or "JSC") to oversee, review and recommend direction of the Research Program.

(a) *Membership*. The JSC shall comprise [**] representatives of Juno named by Juno and [**] representatives of Editas named by Editas. A Party's representatives on the JSC shall have appropriate technical credentials, experience and knowledge, and ongoing familiarity with, the Research Program. Each Party has designated its representatives on the JSC. Each Party may each replace one or more of its JSC representatives at any time, in its sole discretion, upon written notice to the other Party (including by Electronic Delivery). From time to time, the JSC may establish subcommittees, to oversee particular projects or activities, and such subcommittees shall be constituted as the JSC deems necessary or advisable; provided that the JSC may not grant any responsibilities to a subcommittee that are beyond the scope of the responsibilities of the JSC as set forth herein.

(b) *Meetings*. During the Term, the JSC shall meet at least [**]. Additional meetings of the JSC may be held upon the mutual agreement of the Parties; provided, however, that in any case where a matter within the JSC's authority arises, the JSC shall convene a meeting and consider such matter as soon as reasonably practicable, but in no event later than [**] after the matter is first brought to the JSC's attention (or, if earlier, at the next regularly scheduled JSC meeting). Meetings of the JSC shall be effective only if at least [**] representatives of each Party are present or participating. The time and location of each meeting shall be as agreed by the Parties, and meetings may be held in person, alternating locations between the Parties or at such other locations as the Parties agree, or by telephone or video conference; provided, however, that at least [**] of the JSC shall be held in person each Calendar Year. With the prior consent of the other Party, each Party may invite non-member representatives of such Party and any Third Party to attend meetings of the JSC as non-voting participants; provided that (i) any such non-member representative or Third Party is bound by obligations of confidentiality, non-disclosure and non-use consistent with those set forth in ARTICLE 8 and is obligated to assign inventions to the relevant Party as necessary to effect the intent of Section 7.1 prior to attending such meeting, (ii) such non-member representative or Third Party shall not have any voting or decision-making authority on the JSC and (iii) with respect to any Third Party, such Third Party shall be approved by the other Party in writing (such

approval not to be unreasonably withheld, conditioned or delayed) prior to attendance at such meeting. Each Party shall be responsible for all of its own costs and expenses associated with preparing for and attending meetings of the JSC, including all travel and living expenses. The JSC shall be co-chaired by a representative from each Party. The chairpersons shall set the agendas for the JSC meetings in advance.

(c) *Minutes*. The JSC shall keep accurate minutes of its deliberations which shall record all proposed decisions and all actions recommended or taken. The Parties will rotate the responsibility for taking, preparing and issuing minutes for each JSC meeting, which shall be sent to all members of the JSC within [**] after each meeting. Such minutes shall be effective only after such minutes have been approved by both Parties in writing. Definitive minutes of all JSC meetings shall be finalized reasonably promptly after the meeting to which the minutes pertain. All records of the JSC shall at all times be available to both Editas and Juno.

(d) *Responsibilities*. Except as otherwise set forth in this Agreement, subject to the final decision-making authority as set forth in Section 4.2(f), the responsibilities of the JSC shall include:

(i) overseeing, monitoring and reviewing progress of the Research Program, including managing the strategic direction of the Research Program;

(ii) encouraging and facilitating open and frequent exchange between the Parties regarding Research Program activities;

(iii) encouraging and facilitating cooperation and communication between the Parties with respect to the initiation of new Programs and the conduct of each Program;

(iv) discussing any Third Party engaged by or behalf of Editas to conduct the Research Program in accordance with Section 2.3;

(v) discussing requests for Editas to relinquish Targets pursuant to the inclusive innovation model mechanics set forth in the Harvard-Broad Licenses in accordance with Section 2.4(b)(iii);

(vi) discussing and approving any additional permitted internal research uses of α-β T-Cells by Editas;

(vii) reviewing and discussing any data, information or results of the Research Program, including any Collaboration RNP Complexes or other information provided by Editas to Juno hereunder;

(viii) determining the initial Lead Candidate Selection Criteria and any amendments thereto in accordance with Section 2.6(a);

(ix) determining whether any Collaboration RNP Complexes satisfy the Lead Candidate Selection Criteria in accordance with Section 2.6(b);

(x) subject to ARTICLE 8, discussing a communications strategy for the results of the Research Program (including publications in journals, posters, presentations at conferences and abstracts submitted in advance of conferences);

(xi) discussing and attempting to resolve any disputes in any JSC subcommittees; and

(xii) performing such other responsibilities as may be expressly delegated to the JSC under this Agreement or otherwise mutually agreed by the Parties in writing from time to time.

(e) *Limitations on JSC Authority*. The JSC shall not have any authority beyond the specific matters expressly delegated to it under Section 4.2(d) and, in particular, shall not have any power to (i) select any Additional Targets or trigger exercise of any Opt-In Right (in each case, which shall be at Juno's sole discretion, subject to the terms and conditions of this Agreement), (ii) determine whether a Party has fulfilled or breached any obligation under this Agreement, or (iii) amend, modify, interpret or waive the terms of this Agreement. For the avoidance of doubt, unless otherwise mutually agreed by the Parties, the JSC shall not have any authority over any decisions regarding Collaboration IP, including the Prosecution and Maintenance, enforcement or defense thereof, which shall remain subject to the terms of ARTICLE 7. Each Party shall retain the rights, powers and discretion granted to it under this Agreement or the License Agreement, and the JSC shall have no authority to alter, diminish, expand or waive compliance by a Party with a Party's obligations under this Agreement or the License Agreement, and no such rights, powers or discretion shall be delegated or vested in the JSC unless such delegation or vesting of rights is expressly provided for in this Agreement or the Parties expressly so agree in writing.

(f) *Decision Making*.

(i) Except as otherwise set forth in this Agreement, all decisions of the JSC shall be made by unanimous vote, with each Party having one (1) vote. If the JSC cannot agree on a matter for which the JSC has decision-making authority within [**] after the matter was first considered by the JSC, then either Party may, by written notice to the other, refer such matter to the Executive Officers for discussion and attempted resolution in good faith. Such resolution, if any, of a referred matter by the Executive Officers shall be final and binding upon the Parties and shall be considered a decision of the JSC for purposes of this Agreement. If within [**] after the matter was first submitted to the Executive Officers pursuant to this Section 4.2(f)(i) (or such longer time frame the Executive Officers may otherwise agree upon), the Executive Officers are unable to reach consensus, then, other than as set forth in Section 4.2(f)(ii), Editas shall have the deciding vote (which decision shall be made in good faith) with respect to any other matters within the purview of the JSC; provided that Editas shall consider in good faith the positions of Juno in making such final decision.

(ii) Notwithstanding Section 4.2(f)(i), a Party shall not have the right to exercise a deciding vote (A) in a manner that effectively waives or modifies the terms of this Agreement; (B) in a manner that negates any consent rights or other rights specifically allocated to the other Party under this Agreement, including making any decision that is stated to require

the mutual agreement or mutual consent of the Parties or that is at the sole discretion of a Party; (C) in a manner that would require the other Party to perform activities or incur any additional costs that the other Party has not agreed to perform or incur as set forth in this Agreement, or as otherwise agreed in writing by the other Party, and, for clarity, no Research activities shall be required to be performed by Juno under this Agreement without Juno's prior written consent, in its discretion; (D) in a manner that would require a Party to perform any act that it reasonably believes to be inconsistent with any Law, including any approval, order, policy, guidelines of a Regulatory Authority or ethical requirements or ethical guidelines; (E) to allocate intellectual property rights; (F) to determine that such Party has fulfilled any obligation under this Agreement or that the other Party has breached any obligation under this Agreement; (G) to determine that any milestone events or other events have or have not occurred, including whether or not a given Collaboration RNP Complex satisfies the Lead Candidate Selection Criteria; or (H) to permit additional internal research uses by Editas of α-β T-Cells. In the event that any matter set forth in the preceding clauses (A) through (H) is unresolved through the JSC and subsequently such dispute cannot be resolved by the Executive Officers in accordance with Section 4.2(f)(i), then (1) for all such matters set forth in the preceding clauses (C) and (H), there shall be no change unless the Parties otherwise mutually agree in writing, and (2) for all such matters set forth in the preceding clauses (A), (B), (D), (E), (F) or (G), either Party may require the specific issue to be referred for binding arbitration pursuant to Section 13.2. The Parties agree to share equally the cost of the proceedings, including fees of the panel members; provided that each Party shall bear its own attorneys' fees and associated costs and expenses.

(g) *Disbanding of JSC*. The JSC shall be disbanded upon expiration of the Term.

ARTICLE 5
LICENSES

5.1 Licenses to Editas. Subject to the terms and conditions of this Agreement, Juno hereby grants to Editas, and Editas hereby accepts, during the Research Program Term, a non-exclusive, worldwide, royalty-free, fully paid-up license (with the right to sublicense only to its Affiliates and Third Party subcontractors performing activities hereunder on behalf of Editas, subject and subordinate to all the relevant terms and conditions of this Agreement) under the Juno Collaboration IP, solely to conduct its activities under and in accordance with this Agreement.

5.2 Licenses to Juno.

(a) *General*. Subject to the terms and conditions of this Agreement, Editas hereby grants to Juno, and Juno hereby accepts, on a Program-by-Program basis until the expiration of the Opt-In Term with respect to a given Program during the Term, a non-exclusive, worldwide, royalty-free, fully paid-up license (with the right to sublicense only to its Affiliates and Third Party subcontractors performing activities hereunder on behalf of Juno, subject and subordinate to all the relevant terms and conditions of this Agreement, including the provisions set forth in Section 5.6) under the Editas Background IP and Editas Collaboration IP, solely to perform its obligations or exercise its rights under and in accordance with this Agreement, including to evaluate the data generated in the conduct of activities under the Research Program.

(b) *Research License*. Subject to the terms and conditions of this Agreement, Editas hereby grants to Juno, and Juno hereby accepts, a non-exclusive, worldwide, royalty-free, fully paid-up license (with the right to sublicense only to its Affiliates and Third Party subcontractors performing activities hereunder on behalf of Juno, subject and subordinate to all the relevant terms and conditions of this Agreement, including the provisions set forth in Section 5.6) under the Editas Background IP and Editas Collaboration IP, solely to Research and Develop products for use in the Licensed Field, which may include use of research tools in connection therewith, including [**].

5.3 Exclusivity.

(a) During the Term, except to the extent required for Editas to fulfill its obligations to Juno under and in accordance with this Agreement or the License Agreement, Editas shall not and, subject to Section 5.3(b), shall ensure that its Affiliates shall not, anywhere in the world, (i) alone or with or through or for any Third Party, conduct or participate in any Research, Development, Manufacturing, Commercialization or other exploitation activities in the Exclusive Field; or (ii) grant a license, sublicense or other rights to any Third Party to conduct any of the activities in the foregoing Section 5.3(a)(i); provided, however, that the foregoing shall not apply with respect to any Research, Development, Manufacturing, Commercialization or other exploitation activities solely related to a Lapsed Collaboration RNP Complex. For the avoidance of doubt, during the Term, any agreement entered into between Editas or any of its Affiliates and a Third Party involving the use of Genome Editing Technology shall expressly exclude the grant of any license, sublicense or other rights, or the conduct of any activities, in the Exclusive Field, provided, however, that the foregoing shall not apply with respect to any Research, Development, Manufacturing, Commercialization or other exploitation activities solely related to a Lapsed Collaboration RNP Complex. For clarity, Editas and its Affiliates shall not be prohibited pursuant to this Section 5.3(a), from (A) on their own or through or with any Third Party, Researching, Developing, Manufacturing, Commercializing or conducting other exploitation activities (including through grants of licenses, sublicenses or other rights to any Third Party to conduct any of the foregoing activities) with respect to its exploitation of Genome Editing Technology, including the use of Collaboration RNP Complexes, outside of the Exclusive Field; or (B) conducting internal research activities using α-β T-Cells either (1) as a preliminary research tool for screening gRNA, (2) for conducting specificity analysis or assessing DNA modifications, in each case, related to the function of RNP Complexes or (3) for other internal research purposes as may be approved by the JSC (subject to Section 4.2(f)(ii)); provided that, with respect to the foregoing clause (B), (x) Editas shall promptly disclose to Juno in writing any results or other Know-How generated from such activities to the extent related to any Collaboration RNP Complex or Collaboration Target in connection with the Exclusive Field and (y) Editas shall not disclose to any Third Party any results or other Know-How generated from such activities to the extent primarily related to any Collaboration RNP Complex or Collaboration Target in connection with the Exclusive Field. The restrictions set forth in this Section 5.3(a) shall not restrict Editas and its Affiliates from performing their obligations under (1) the Allergan Agreement as to the Excluded Ocular Field, alone or with or for Allergan, (2) the Beam Agreement as to the Excluded Base Editing Non-Cancer Field, or (3) the BlueRock Agreement as to the BlueRock Field, in each case, as such agreements exist as of the

Amendment Date and solely for so long as such agreements, or their surviving provisions (to the extent the applicable provisions survive), remain in force and effect.

(b) *Exceptions for Change of Control*. Notwithstanding the provisions of Section 5.3(a), in the event that, following the Effective Date, Editas undergoes a Change of Control and an Acquiring Affiliate is engaged in any activities immediately prior to the effective date of such Change of Control that would violate Section 5.3(a) if conducted by Editas (an "Existing Acquirer Program"), then Editas shall not be in breach of the provisions of Section 5.3(a) as a result of the continued conduct of such Existing Acquirer Program by such Acquiring Affiliate during the Term; provided that (i) such Existing Acquirer Program is conducted by such Acquiring Affiliate independently of the activities of this Agreement (including maintaining separate lab notebooks) and without use of, or reference to, any Editas Background IP, Collaboration IP or any Confidential Information of Juno or any of its Affiliates, (ii) no personnel of Editas or any of its Affiliates that are conducting or have conducted any activities under the Research Program or otherwise under this Agreement, or that has or had access to any Confidential Information of Juno or any of its Affiliates, shall work on the Existing Acquirer Program, and (iii) Editas puts in place firewalls and other protections reasonably acceptable to Juno that are reasonably designed to ensure that the foregoing clauses (i) and (ii) are complied with during the Term.

(c) *[**]*. Notwithstanding anything to the contrary contained herein during the Term, Editas shall not (and shall cause its Affiliates not to), use any Patent Rights, Know-How or other IP, or any other materials or resources (including any portion of payments from Juno hereunder), that (i) are licensed or otherwise provided by Juno (or any of its Affiliates) hereunder; or (ii) were otherwise created, conceived, discovered, generated, invented, made or reduced to practice in the course of conducting any activities pursuant to this Agreement, in each case ((i) or (ii)) in connection with [**].

5.4 Insolvency. If this Agreement is terminated due to the rejection of this Agreement by or on behalf of a Party (the "Non-Bankruptcy Party") in or during any bankruptcy or similar proceeding of the other Party (the "Bankruptcy Party"), all licenses and rights to licenses granted under or pursuant to this Agreement by the Bankruptcy Party to the Non-Bankruptcy Party are and shall otherwise be deemed to be licenses of rights to "intellectual property" (including for purposes of Section 365(n) of Title 11 of the United States Bankruptcy Code ("Section 365(n)") and other similar Laws in any other jurisdiction). The Parties agree that the Non-Bankruptcy Party, as a licensee of such rights under this Agreement, shall retain and may fully exercise all of its rights and elections under any applicable insolvency statute, and that upon (a) commencement of bankruptcy or similar proceeding by or against the Bankruptcy Party, (b) any rejection or similar disavowal of this Agreement by the Bankruptcy Party in or during any such proceeding and (c) any election by the Non-Bankruptcy Party to exercise its rights to continue its licenses hereunder pursuant to Section 365(n) or any similar provision of applicable law in any jurisdiction, the Non-Bankruptcy Party shall be entitled to a complete duplicate of or complete access to (as the Non-Bankruptcy Party deems appropriate), any such intellectual property and all embodiments of such intellectual property as may be necessary for the Non-Bankruptcy Party to enjoy its license rights hereunder. Such intellectual property and all embodiments thereof shall be promptly delivered to the Non-Bankruptcy Party following the

occurrence of the events described in the foregoing clauses (a) through (b) of this Section 5.4 and upon written request therefor by the Non-Bankruptcy Party. The provisions of this Section 5.4 shall be (i) without prejudice to any rights the Non-Bankruptcy Party may have arising under any applicable insolvency statute or other applicable Law and (ii) effective only to the extent permitted by applicable Law.

5.5 Rights Retained by the Parties. Except as expressly set forth in this Agreement, neither Party shall acquire any license or other intellectual property interest, by implication or otherwise, in any Confidential Information of the other Party or under any IP in which such other Party or any of its Affiliates has rights.

5.6 Compliance with In-License Agreements. The terms of this Agreement, insofar as they relate to a sublicense of Editas Background IP Controlled by Editas or any of its Affiliates pursuant to an In-License Agreement, shall be subject to the terms and conditions of the relevant In-License Agreement, in each case, but only to the extent that the applicable In-License Agreement requires such terms and conditions to be imposed on a sublicensee pursuant to such In-License Agreement, as follows: (a) with respect to any Editas Background IP Controlled by Editas or any of its Affiliates pursuant to the Cas9-I Agreement, the provisions set forth on Schedule 5.6(a) shall apply; (b) with respect to any Editas Background IP Controlled by Editas or any of its Affiliates pursuant to the Cas9-II Agreement, the provisions set forth on Schedule 5.6(b) shall apply; (c) with respect to Editas Background IP Controlled by Editas or any of its Affiliates pursuant to the Cpf1 Agreement, the provisions set forth on Schedule 5.6(c) shall apply; (d) with respect to any Editas Background IP Controlled by Editas or any of its Affiliates pursuant to the 2014 MGH Agreement, the provisions set forth on Schedule 5.6(d) shall apply; and (e) with respect to any Editas Background IP Controlled by Editas or any of its Affiliates pursuant to the 2016 MGH Agreement, the provisions set forth on Schedule 5.6(e) shall apply. Schedule 5.6 shall be updated with respect to any Subsequently Obtained IP in accordance with Section 7.6(b).

ARTICLE 6
PAYMENTS

6.1 Initial Fees. The Parties recognize that, in partial consideration of Editas' initial grant of the rights and licenses to Juno under (a) the Original Agreement, Juno paid Editas an upfront fee of twenty-five million dollars ($25,000,000) within [**] following the Original Effective Date; and (b) the First Amended and Restated Agreement, Juno paid Editas an upfront fee of five million dollars ($5,000,000) within [**] following the First Amended Effective Date.

6.2 Amendment Fee. In partial consideration of Editas' grant of the additional rights and licenses to Juno hereunder, Juno shall pay to Editas a non-refundable, non-creditable fee of seventy million dollars ($70,000,000) within [**] following the Amendment Date.

6.3 Extension Fee. With respect to each Extension Term elected and implemented in accordance with Section 2.2, Juno shall pay to Editas a non-refundable, non-creditable extension fee of [**] dollars ($[**]), payable prior to the end of the then-current Research Program Term and in accordance with the requirements of Section 2.2. For clarity, the maximum amount payable pursuant to this Section 6.3 is [**] dollars ($[**]).

6.4 Payment Method. Except as otherwise provided in other sections of this Agreement, all payments due to a Party hereunder shall be due and payable within [**] after receipt of an invoice from the other Party and shall be paid via a bank wire or ACH transfer is U.S. dollars to such bank account as such Party shall designate. All dollar amounts specified in this Agreement are U.S. dollar amounts. For clarity, currency transaction rates used by Juno shall be in accordance with its standard accounting practices consistently applied and in accordance with its accounting practices for external reporting purposes. Editas has the right to verify that the exchange rates used by Juno for a given month shall align with Juno's standard accounting practices consistently applied and with its accounting practices for external reporting purposes. If the due date of any payment hereunder is not a Business Day, such payment may be paid on the following Business Day. Any undisputed payments that are not paid on the date such payments are due under this Agreement shall bear interest to the extent permitted by Law at the prime rate as reported by *The Wall Street Journal* on the date such payment is due, plus an additional [**] percent ([**]%), calculated on the number of days such payment is delinquent.

6.5 Taxes.

(a) *Income Taxes*. Each Party will pay any and all income taxes levied on account of all payments it receives under this Agreement, except as otherwise provided in this Section 6.5.

(b) *Tax Withholding*. Each Party shall be entitled to deduct and withhold from any amounts payable under this Agreement such taxes as are required to be deducted or withheld therefrom under any provision of applicable Law. The Party that is required to make such withholding (the "Paying Party") will: (i) deduct those taxes from such payment, (ii) timely remit the taxes to the proper taxing authority, and (iii) send evidence of the obligation together with proof of tax payment to the other Party (the "Payee Party") on a timely basis following that tax payment. Each Party agrees to reasonably cooperate with the other Party in claiming refunds or exemptions from such deductions or withholdings under any relevant agreement or treaty which is in effect to ensure that any amounts required to be withheld pursuant to this Section 6.5 are reduced in amount to the fullest extent permitted by applicable Law.

(c) *Tax Documentation*. Editas has provided a properly completed and duly executed IRS Form W-9 (or other applicable form) to Juno. Prior to the receipt of any payment under this Agreement, Editas (and any other recipient of payments by Juno under this Agreement) shall, to the extent it is legally permitted to, provide to Juno, at the time or times reasonably requested by Juno or as required by applicable Law, such properly completed and duly executed documentation (for example, IRS Forms W-8 or W-9 or foreign equivalents) as will permit payments made under this Agreement to be made without, or at a reduced rate of, withholding for taxes.

(d) *Gross-Up for Increased Taxes*. In the event that a withholding tax is imposed at an increased rate on any amount payable under this Agreement solely as a result of (i) any assignment or delegation under Section 13.4 by the paying Party or its predecessor or successor in interest to another Person, (ii) any extension of rights, licenses, immunities and obligations under Section 13.14 by the paying Party or its predecessor or successor in interest to another Person, (iii) the payment of the amount by a Person other than the Party obligated to

make such payment under this Agreement, or (iv) any combination of the foregoing clauses (i), (ii) or (iii), in each case ((i) – (iv)), after the Amendment Date with a resulting harm to the Party entitled to receive the payment (e.g., the Party entitled to receive the Payment or its Affiliate is not entitled to seek any offsetting credit), then the increase in withholding tax resulting from such action or combination of actions to the extent of such harm (the "Increased Tax") shall be subject to the provisions of this Section 6.5(d). To the extent an Increased Tax is determinable at the time of the associated payment, the amount otherwise payable under this Agreement shall be increased sufficiently that, after payment of all Increased Taxes (including, for the sake of clarity, Increased Tax on any increased payment under this Section 6.5(d)) the net amount received by the recipient of the payment is equal to the net amount such recipient would have received in the absence of action or actions resulting in the Increased Tax to the extent of such harm.

6.6 Editas Third Party Agreements. Notwithstanding anything to the contrary contained herein, and except as set forth in Section 7.6 and in Section 7.17 of the License Agreement, Editas shall be solely responsible for all costs and payments of any kind (including all upfront fees, annual payments, milestone payments and royalty payments) arising under any agreements between Editas (or any of its Affiliates) and any Third Party (including under any In-License Agreement), which costs or payments arise in connection with, or as a result of, the Research Program activities conducted hereunder. Juno shall use Commercially Reasonable Efforts to comply with Editas' reasonable requests for financial information with respect to its activities hereunder that is reasonably available to Juno as necessary for Editas to comply with its reporting obligations to any of its In-Licensors under the In-License Agreements; provided that Editas shall ensure that each such In-Licensor is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in ARTICLE 8 to maintain the confidentiality thereof and not to use such information except as expressly permitted by this Agreement; provided, further, that Editas shall remain responsible for any failure by any In-Licensor who receives such information to treat such information as required under ARTICLE 8.

6.7 Confidentiality. Each Party shall treat all financial information of the other Party that is subject to review under this ARTICLE 6 (including all royalty reports) as such other Party's Confidential Information.

ARTICLE 7
INTELLECTUAL PROPERTY

7.1 Ownership of Collaboration IP; Disclosure.

(a) *Background IP*. Each Party shall retain ownership of intellectual property rights existing as of the Original Effective Date, or created, conceived, discovered, developed, generated, invented, made, reduced to practice or acquired independently of the Research Program, and nothing in this Agreement shall assign any ownership to the other Party with respect to such intellectual property rights. Without limiting the foregoing, as between the Parties (including their respective Affiliates), Editas will retain all right, title and interest in and to all Editas Background IP, except to the extent that any such rights are licensed or granted to Juno under this Agreement or the License Agreement.

(b) *Inventorship*. Notwithstanding the provisions of Section 13.1, inventorship of any inventions (whether patentable or not) created, conceived, discovered, developed, generated, invented, made or reduced to practice by or on behalf of a Party or its Affiliates, whether solely or jointly with any Third Party (or with the other Party or its Affiliates), in the course of activities performed under this Agreement, shall be determined by application of U.S. patent law pertaining to inventorship and ownership of any inventions created, conceived, discovered, developed, generated, invented, made or reduced to practice by or on behalf of a Party or its Affiliates shall follow inventorship and, except as otherwise provided in this Section 7.1, ownership of IP shall be determined by inventorship.

(c) *Editas Collaboration IP*. As between the Parties (including their respective Affiliates), Editas will retain all right, title and interest in and to Editas Collaboration IP, except to the extent that any such rights are licensed or granted to Juno under this Agreement or the License Agreement. As between Editas and any Third Party, Editas shall ensure that it owns and Controls all Collaboration RNP Complexes such that it is able to grant the rights and licenses to Juno hereunder (and under the License Agreement) with respect to such Collaboration RNP Complexes as contemplated herein and therein.

(d) *Juno Collaboration IP.* As between the Parties (including their respective Affiliates), Juno will retain all right, title and interest in and to Juno Collaboration IP, except to the extent that any such rights are licensed or granted to Editas under this Agreement or the License Agreement. As between the Parties, Juno shall have the sole right (not the obligation) in its discretion and at its expense, to Prosecute and Maintain, enforce and defend the Juno Collaboration Patents.

(e) *Joint Collaboration IP*. As between the Parties, subject to Section 7.1(g), the Parties shall each own an equal, undivided interest in all Joint Collaboration IP. Except as expressly provided in this Agreement (including Section 5.3) or the License Agreement, each Party shall have the right to exploit the Joint Collaboration IP and neither Party shall have any obligation to account to the other for profits, or to obtain any approval of the other Party to license or exploit Joint Collaboration IP, by reason of joint ownership thereof, and each Party hereby waives any right it may have under the Laws of any jurisdiction to require any such consent or accounting.

(f) *Disclosure of Collaboration IP*. Each Party shall promptly disclose to the other Party (i) with respect to Editas, any Editas Collaboration IP or Joint Collaboration IP and (ii) with respect to Juno, any Joint Collaboration IP, in each case, made in connection with this Agreement.

(g) *Cooperation*. Without limiting (but subject to) the foregoing, each Party shall (i) cause its employees, consultants, sublicensees, agents and contractors to assign to such Party, such Person's right, title and interest in and to all Collaboration IP, and intellectual property rights therein, and (ii) include in any Third Party subcontractor agreement that each Third Party subcontractor shall be required to assign all right, title and interest in and to any Collaboration IP to such Party, and such Party shall ensure that such Third Party's obligations to assign the Collaboration IP to such Party remain in full force and effect for so long as this Agreement or the License Agreement remains in effect.

7.2 Prosecution and Maintenance of Editas Collaboration Patents and Joint Collaboration Patents.

(a) *Editas Collaboration Patents*. Editas shall be responsible, at its expense, and shall have the exclusive right to Prosecute and Maintain the Editas Collaboration Patents. Editas shall keep Juno informed of any material developments with respect to the Prosecution and Maintenance of such Editas Collaboration Patents including by providing copies of all substantive office actions, examination reports, communications or any other substantive documents to or from any patent office, including notice of all interferences, reissues, re-examinations, inter partes reviews, derivations, post grant proceedings or oppositions. Without limiting the foregoing, Editas shall (i) provide Juno with copies of the text of the applications relating to the Editas Collaboration Patents as soon as practical but at least [**] before filing, except for urgent filings in which case Editas shall provide copies as soon as practical before, simultaneously with or immediately after filing; (ii) provide Juno with a copy of each submission made to and material document received from a patent authority, court or other tribunal regarding any Editas Collaboration Patents reasonably promptly after making such filing or receiving such material document, including a copy of each application as filed together with notice of its filing date and application number; (iii) keep Juno advised of the status of all material communications, actual and prospective filings or submissions regarding the Editas Collaboration Patents, and shall give Juno copies of any such material communications, filings and submissions proposed to be sent to any patent authority or judicial body; and (iv) consider in good faith Juno's comments on the material communications, filings and submissions for the Editas Collaboration Patents; provided, however, that, solely with respect to Editas Collaboration Patents that are jointly owned by Editas and BlueRock pursuant to the BlueRock Agreement (i.e., BlueRock is a joint inventor on such Patent Right) (the "Editas-BlueRock Joint Patents"), the foregoing prosecution and maintenance rights set forth in this Section 7.2(a) shall be subject to the prosecution and maintenance rights of BlueRock set forth in the BlueRock Agreement for such Editas-BlueRock Joint Patent, as the BlueRock Agreement exists as of the Amendment Date and solely for so long as the BlueRock Agreement, or the surviving provisions thereof (to the extent the applicable provisions survive), remains in force and effect.

(b) *Joint Collaboration Patents*. Subject to this Section 7.2(b), the Parties shall be jointly responsible for Prosecuting and Maintaining the Joint Collaboration Patents, including conducting any interferences, re-examinations, inter partes review, post-grant proceedings, reissues and oppositions relating thereto and shall equally share all costs related thereto. The Parties have jointly selected counsel ("Joint Counsel") for the Prosecution and Maintenance of all Joint Collaboration Patents. The Joint Counsel shall give Juno and Editas (or each Party's designee) an opportunity to review the text of each application, office action response or other substantive document relating to a prospective Joint Collaboration Patent before filing with any patent office in the Territory, shall incorporate Juno's and Editas' (or each Party's designee) reasonable comments with respect thereto, and shall supply Juno and Editas (or each Party's designee) with a copy of each such application, office action response or other substantive document as filed, together with notice of its filing date and serial number; provided, however, that in the event of conflicting instructions, on a Program-by-Program basis, during the Term, the Joint Counsel shall adhere to the instructions of Editas. Both Parties shall cooperate with Joint Counsel for all activities relating to Joint Collaboration Patent prosecution and

maintenance. If Editas instructs the Joint Counsel to allow a Joint Collaboration Patent to lapse or become abandoned in any country without having first filed a substitute, or decides not to participate in any interferences, reissues, re-examinations, inter partes reviews, derivations, post grant proceedings or oppositions with respect to a Joint Collaboration Patent, it shall notify Juno of such decision or intention at least [**] prior to the date upon which such Patent shall lapse or become abandoned, and, if after consultation between the Parties, Editas still intends to allow such Joint Collaboration Patent to lapse or become abandoned, Juno shall thereupon have the right (but not the obligation) to assume the Prosecution and Maintenance thereof at Juno's sole expense with counsel of its choice (which may be the Joint Counsel, in Juno's sole discretion). If Juno assumes the Prosecution and Maintenance of any such Joint Collaboration Patent, such Patent shall thereafter be considered a Juno Collaboration Patent, and Editas shall assign, and hereby assigns, its ownership interest in such Joint Collaboration Patent to Juno. The foregoing shall not apply where, with reference to a specific patent family, Editas, in its reasonable determination, decides not to file a continuing application in a particular country due to the existence of one or more pending patents in such country. Notwithstanding the foregoing, Juno may elect, by written notice to Editas, to have a given Joint Collaboration Patent become an Editas Collaboration Patent, in which case the provisions of Section 7.2(a) shall apply, and Juno shall assign, and hereby assigns, its ownership interest in such Joint Collaboration Patent to Editas.

(c) *Cooperation*.

(i) Each Party shall reasonably cooperate with and assist the Party responsible (or the Joint Counsel, as applicable) for Prosecution and Maintenance of an Editas Collaboration Patent or Joint Collaboration Patent pursuant to Section 7.2(a) or Section 7.2(b), as applicable, upon the reasonable request of such Party, including by making scientists and scientific records reasonably available and the execution of all such documents and instruments and the performance of such acts as may be reasonably necessary in order to permit the other Party to continue any filing, prosecution, maintenance or extension of such Patent Rights.

(ii) Except as otherwise expressly set forth in this Section 7.2, each Party shall be responsible for all costs and expenses associated with its Prosecution and Maintenance activities under this Section 7.2 with respect to Editas Collaboration Patents and Joint Collaboration Patents for which it is responsible pursuant to Section 7.2(a) or Section 7.2(b), as applicable. Notwithstanding the foregoing, Juno will not be responsible for any Prosecution and Maintenance costs associated with any subject matter divided out of such Patent Rights that is not licensed to Juno (and Editas shall reimburse Juno for any such costs incurred by Juno or any of its Affiliates).

7.3 Enforcement of Editas Collaboration Patents and Joint Collaboration Patents.

(a) *Notice*. If either Party learns of an infringement or threatened infringement by a Third Party of (i) any Joint Collaboration Patent or (ii) any Editas Collaboration Patent by reason of the manufacture, use or sale of any RNP Complex(es) Directed to a Collaboration Target (or products constituting, incorporating, comprising or containing any such RNP Complex), or (A) any such Joint Collaboration Patent is challenged in any action or proceeding or (B) any such Editas Collaboration Patent is challenged in any action or proceeding

relating to any RNP Complex Directed to a Collaboration Target (or products constituting, incorporating, comprising or containing any such RNP Complex), in each case of (A) and (B), other than any oppositions, cancellations, interferences, reissue proceedings, reexaminations, inter partes, review or post grant proceedings, which are addressed above, such Party shall promptly notify the other Party and shall provide such other Party with available evidence of such infringement, and following such notification, the Parties shall confer.

(b) *Enforcement of Editas Collaboration Patents*. Subject to the License Agreement, as between the Parties, Editas shall have the sole right, but not the obligation, to institute, prosecute, and control any action or proceeding with respect to any infringement of any Editas Collaboration Patent, by counsel of its own choice, in Editas' own name and under Editas' direction and control; provided, however, that, solely with respect to Editas-BlueRock Joint Patents, the foregoing enforcement rights set forth in this Section 7.3(b) shall be subject to the enforcement rights of BlueRock set forth in the BlueRock Agreement for such Editas-BlueRock Joint Patent as the BlueRock Agreement exists as of the Amendment Date and solely for so long as the BlueRock Agreement, or the surviving provisions thereof (to the extent the applicable provisions survive), remains in force and effect.

(c) *Enforcement of Joint Collaboration Patents*. Subject to the License Agreement, promptly after notice under Section 7.3(a) with respect to a Joint Collaboration Patent, the Parties shall meet to discuss whether they wish to enforce such Joint Collaboration Patent. If the Parties elect to enforce such Joint Collaboration Patent, such enforcement action shall be jointly conducted by jointly selected counsel (which may be Joint Counsel). Absent agreement regarding whether to enforce such Joint Collaboration Patent within [**] and notwithstanding anything to the contrary herein, each Party shall have the right to enforce such Joint Collaboration Patent; provided that the enforcing Party shall in good faith give careful consideration to the non-enforcing Party's views and to potential effects on the non-enforcing Party's business in making the decision of whether or not to commence such enforcement action.

(d) *Settlement*. A settlement or consent judgment or other voluntary final disposition of a suit under this Section 7.3 may be entered into without the consent of the Party not bringing suit; provided, however, that any such settlement, consent judgment or other disposition of any action or proceeding by a Party under this Section 7.3 shall not, without the consent of the Party not bringing suit, (i) impose any liability or obligation on the Party not bringing suit, (ii) include the grant of any license, covenant or other rights to any Third Party that would conflict with or reduce the scope of the subject matter included under the licenses as granted to the Party not bringing suit under this Agreement or as could be granted to Juno under the License Agreement, (iii) conflict with or reduce the scope of the subject matter claimed in any Patent owned by the Party not bringing suit, or (iv) adversely affect the interest of the Party not bringing suit in any material respect; provided that such consent shall not be unreasonably withheld.

(e) *Joinder*. In the case of any action or proceeding in accordance with Section 7.3(c), at the enforcing Party's written request, and at such enforcing Party's expense (subject to Section 7.3(g)), the other Party will join any such action or proceeding as a party and will use Commercially Reasonable Efforts to cause any Third Party as necessary to join such

action or proceeding as a party if doing so is necessary for the purposes of establishing standing or is otherwise required by applicable Law to pursue such action or proceeding.

(f) *Cooperation*. In addition to the obligations set forth in Sections 7.3(a) through 7.3(e), each Party will provide to the Party enforcing any such rights under this Section 7.3 reasonable assistance and cooperation in such enforcement, at such enforcing Party's request and expense (subject to Section 7.3(g)). The enforcing Party will keep the other Party regularly informed of the status and progress of such enforcement efforts. Each Party bringing any such action or proceeding in accordance with this Section 7.3 shall have an obligation to consult with the other Party and will take comments of such other Party into good faith consideration with respect to the infringement, claim construction, or defense of the validity or enforceability of any claim in any Editas Collaboration Patent or Joint Collaboration Patent that are the subject of such proceeding.

(g) *Costs.* Except as otherwise expressly set forth in this Section 7.3, each Party shall bear all of its costs incurred in connection with its activities under this Section 7.3. Any damages or other monetary awards recovered in any action, suit or proceeding brought under this Section 7.3 shall be shared as follows: (i) the amount of such recovery actually received by the Party controlling such action shall first be applied to costs and expenses incurred by each Party in connection with such action (including, for this purpose, a reasonable allocation of expenses of internal counsel), and (ii) (A) with respect to any Editas Collaboration Patent, any remaining proceeds shall be allocated to Editas and (B) with respect to any Joint Collaboration Patent, any remaining proceeds shall be allocated between the Parties, such that (i) if the Parties are jointly bringing suit under this Section 7.3, the proceeds shall be allocated evenly between the Parties and (ii) if the Parties are not jointly bringing suit under this Section 7.3, the Party bringing suit under this Section 7.3 retains [**] and the other Party retains [**] of such amount.

7.4 Defense of Claims Brought by Third Parties. If a Party becomes aware of any actual or threatened claim that the conduct of any Research Program activities hereunder, or the Research, Development, Manufacture or Commercialization of any Collaboration Target or Collaboration RNP Complex, infringes the intellectual property rights of any Third Party, such Party shall promptly notify the other Party. In any such instance, the Parties shall as soon as practicable thereafter meet to discuss in good faith regarding the best response to such notice.

7.5 Common Interest Agreement. The Parties shall negotiate in good faith to enter into a common interest agreement within [**] after the Amendment Date.

7.6 Subsequently Obtained IP.

(a) If, following the Amendment Date, Editas or any of its Affiliates (other than an Acquiring Affiliate, unless such Acquiring Affiliate has provided access to Editas or any of its Affiliates to the applicable IP, in which case such Acquiring Affiliate shall be subject to this Section 7.6 with respect to such IP) enters into a license agreement pursuant to which Editas or such Affiliate acquires Control of (i) any IP that claims or covers, or is otherwise necessary or useful for, any Collaboration RNP Complex or Collaboration Target or the research, development, making, having made, import, use, offering to sell, selling or otherwise exploiting any Collaboration RNP Complex or Collaboration Target, or (ii) any other Genome Editing

Technology or IP intended to be used in the conduct of the Research Program, in each case ((i) or (ii)) that was not previously included in Editas Background IP (collectively, the "Subsequently Obtained IP"), Editas shall use Commercially Reasonable Efforts to (A) obtain license terms with respect to such Subsequently Obtained IP that are not more onerous with respect to Programs for which sublicenses are granted to Juno hereunder (or may be granted with respect to any Licensed Program (as such term is defined in the License Agreement) under the License Agreement) than they are with respect to any other actual or potential programs or products for which such Subsequently Obtained IP may be practiced or otherwise used; provided that Editas shall in no event disproportionately burden any Juno potential Licensed Product (as such term is defined in the License Agreement) and (B) allow for sublicensing to Juno in accordance with this Agreement and the License Agreement. Following execution of the applicable in-license agreement, Editas shall promptly provide to Juno a written description of any applicable Subsequently Obtained IP, together with a true, correct and complete copy of any such Third Party license (provided that such copy may be redacted as to terms not applicable to a sublicensee thereunder). On a Program-by-Program basis, unless and until any such Subsequently Obtained IP is sublicensed to Juno in accordance with Section 7.6(b), such Subsequently Obtained IP shall (A) be deemed not to be Controlled by Editas for purposes of the licenses granted to Juno hereunder and (B) unless otherwise agreed by the Parties in writing, Editas shall not, and shall cause its Affiliates and any Third Party subcontractors to not, practice or otherwise use any such Subsequently Obtained IP in the performance of the applicable Program.

(b) As to any Subsequently Obtained IP that relates to, or is otherwise necessary or useful for the conduct of, a Program (i) for which Editas has provided notice to Juno pursuant to Section 7.6(a), and (ii) under which Editas is permitted to grant sublicense rights to Juno, Juno shall notify Editas in writing, within [**] after the date on which Editas delivers to Juno the Lead Candidate Notification with respect to such Program (or, if Editas has previously delivered the Lead Candidate Notification with respect to such a Program, then within [**] after Editas provides to Juno a copy of the applicable Third Party license agreement pursuant to Section 7.6(a)), whether Juno desires to receive a sublicense of rights granted under such Third Party license agreement with respect to such Subsequently Obtained IP in connection with Juno's exercise of its Opt-In Right as to such Program and, following Editas' receipt of Juno's notice pursuant to this Section 7.6(b), then the Parties shall in good faith negotiate and mutually agree on (A) any additional terms with respect to such Subsequently Obtained IP under the applicable Third Party license agreement applicable to Juno as a sublicensee thereunder and to be included on Schedule 5.6 ("Additional Sublicense Terms"); and (B) Juno's agreement to reimburse Editas for any royalties actually paid by Editas under such Third Party agreement directly on account of sales of Licensed Products (as defined in the License Agreement) under the License Agreement by Juno, its Affiliates and other sublicensees and (C) Juno's reasonable pro rata allocation of any milestone payments actually paid by Editas under such Third Party agreement solely with respect to the sublicense of such Subsequently Obtained IP as such milestone payments result from the exploitation of the applicable Licensed Product (as defined in the License Agreement) under the License Agreement, which pro rata allocation shall be mutually agreed by the Parties based on the reasonable expected exploitation of such Subsequently Obtained IP by Juno and its Affiliates and other sublicensees with respect to the applicable Licensed Product (as defined in the License Agreement) in the Licensed Field (as

defined in the License Agreement) for such Program pursuant to the License Agreement as compared to all other current and reasonably anticipated potential products relevant to such Third Party agreement (including Licensed Products (as defined in the License Agreement) and any such products that may be researched, developed or commercialized outside the Licensed Field) ((B) and (C), collectively, the "Allocable Costs"). In the event that the Parties are unable to agree on any such Additional Sublicense Terms or Allocable Costs pursuant to this Section 7.6(b), the Parties shall escalate the matter to the Executive Officers for resolution, and if the Executive Officers are unable to resolve such issue within [**], the matter shall be resolved by binding arbitration pursuant to Section 13.2 (and until such matter is resolved, such Subsequently Obtained IP shall be deemed not to be Controlled by Editas for purposes of the licenses granted to Juno hereunder or under the License Agreement); provided that if the Opt-In Term for the applicable Program would otherwise expire prior to the end of the foregoing dispute resolution period, then such Opt-In Term shall automatically be extended until [**] after the end of such dispute resolution period. Following determination of the Additional Sublicense Terms and Allocable Costs with respect to any Subsequently Obtained IP for a given Program in accordance with this Section 7.6(b), Juno may elect to include such Subsequently Obtained IP for such Program by providing written notice to Editas no later than the expiration of the Opt-In Term with respect thereto, in which case, (1) such Third Party license agreement shall be considered an "In-License Agreement" under this Agreement and under the License Agreement solely with respect to the Program(s) and such Subsequently Obtained IP will be deemed to be included in the Editas Background IP hereunder and in the Editas Licensed Background IP (as defined in the License Agreement) under the License Agreement, and (2) the Licensed Program Addendum for such Program shall include such Additional Sublicense Terms and Allocable Costs; provided that, for clarity, any amounts due and payable by Juno or any of its Affiliates with respect to any such sublicense under Subsequently Obtained IP shall be limited to such Allocable Costs as set forth in the applicable Licensed Program Addendum, which shall be paid in accordance with the terms of the License Agreement and shall be considered Juno Third Party Payments (as defined in the License Agreement) thereunder, and in no event shall Juno or any of its Affiliates incur any additional payment obligations with respect to such Subsequently Obtained IP under this Agreement.

7.7 Post-Opt-In Right Exercise. On a Program-by-Program basis, after Juno's exercise of its Opt-In Right with respect to a given Program, the Prosecution and Maintenance and enforcement of the Editas Background Patents, Editas Collaboration Patents and Joint Collaboration Patents for such Program shall be in accordance with the License Agreement.

ARTICLE 8
CONFIDENTIALITY AND PUBLICATION

8.1 Confidential Information. Except as otherwise expressly provided herein, the Parties agree that, for the Term and for [**] thereafter, the receiving Party shall (a) not, except as expressly provided in this ARTICLE 8, disclose to any Third Party any Confidential Information furnished to it by the disclosing Party pursuant to this Agreement (including under the Original Agreement or First Amended and Restated Agreement); (b) maintain in confidence such Confidential Information using not less than the efforts such receiving Party uses to maintain in confidence its own proprietary information of similar kind and value, but in no event less than a

reasonable degree of efforts; and (c) not use such Confidential Information for any purpose except those permitted by this Agreement, or the License Agreement, including, in the case of Juno, the exercise of the rights and licenses (including the Opt-In Rights) granted to Juno hereunder and thereunder (it being understood that this Section 8.1 shall not create or imply any rights or licenses not expressly granted under this Agreement or the License Agreement). For purposes of this Agreement, "Confidential Information" means any confidential or proprietary information, samples or other materials, including Know-How, which are disclosed by or on behalf of one Party to the other Party pursuant to this Agreement (including under the Original Agreement or the First Amended and Restated Agreement), regardless of whether any of the foregoing is marked "confidential" or with other similar designation to indicate its confidential or proprietary nature or communicated to the other Party by or on behalf of the disclosing Party in oral, written, visual, graphic or electronic form.

8.2 Program-Specific Information. Notwithstanding anything to the contrary herein, (a) the identity of the Collaboration Targets; (b) the Collaboration RNP Complexes; (c) the Collaboration Know-How comprising the data or results of the Research Program, including the content of the applicable Data Package (other than Joint Collaboration Know-How) ((a) – (c), collectively, the "Program-Specific Information"); and (d) the Joint Collaboration Know-How, in each case of clauses (a) – (d), shall be deemed Confidential Information of both Parties (without regard to Section 8.3(a) or 8.3(d)), each Party shall be deemed to be the disclosing Party with respect to thereto, and each Party shall be subject to the obligations of confidentiality and the restrictions on use and disclosure with respect thereto as set forth in this ARTICLE 8. Notwithstanding the foregoing, from and after the end of the Term, with respect to (i) any Collaboration RNP Complex that became a Lapsed Collaboration RNP Complex during the Term, or (ii) any Collaboration RNP Complex that was not included in a Program for which Juno has exercised its Opt-In Right, in each case ((i) or (ii)), that is not otherwise a Licensed RNP Complex (as defined in the License Agreement), there shall no longer be any Program-Specific Information relating to any such Collaboration RNP Complex and, for clarity, any Confidential Information that would otherwise have been Program-Specific Information with respect thereto shall thereafter be deemed to be the Confidential Information of the Disclosing Party, as applicable.

8.3 Exceptions. The obligations set forth in Section 8.1 shall not apply with respect to any portion of the Confidential Information of the disclosing Party that the receiving Party can show by competent written proof:

(a) was already known to the receiving Party, other than under an obligation of confidentiality or restriction of use, at the time of disclosure;

(b) was generally available to the public or otherwise part of the public domain at the time of its disclosure to the receiving Party;

(c) became generally available to the public or otherwise part of the public domain after its disclosure, including through a publication in accordance with Section 8.5, in each case, other than through any act or omission of the receiving Party in breach of this Agreement;

(d) was independently developed by or on behalf of the receiving Party without reference to or reliance upon the disclosing Party's Confidential Information, as demonstrated by documented evidence prepared contemporaneously with such independent development; or

(e) was disclosed to the receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the disclosing Party not to disclose such information to others.

8.4 Permitted Use and Disclosures.

(a) *Authorized Disclosure*. Notwithstanding Section 8.1, the receiving Party may disclose Confidential Information belonging to the disclosing Party in the following instances:

(i) subject to Sections 8.4(b) and 8.4(c), to comply with applicable Law (including the rules and regulations of the U.S. Securities and Exchange Commission ("SEC") or any national securities exchange) or with judicial process (including prosecution or defense of litigation), if, in the reasonable opinion of the Receiving Party's counsel, such disclosure is necessary for such compliance or for such judicial process (including prosecution or defense of litigation);

(ii) to any of its officers, employees, acquirers, consultants, agents or Affiliates (including (A) in the case of Juno, to any actual or potential collaborators, licensees, or sublicensees and (B) in the case of either Party, to such Party's subcontractors for purpose of such subcontractor performing obligations of such Party under this Agreement) as it deems necessary or advisable in the course of conducting activities in accordance with this Agreement in order to carry out its responsibilities or exercise its rights under this Agreement (including, (1) in the case of Juno, the exercise of the rights and licenses (including, the evaluation of its Opt-In Rights) granted to Juno hereunder and (2) in the case of either Party, to use the Joint Collaboration Know-How as set forth in Section 7.1(e)); provided that each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; provided, further, that in each of the above situations in this Section 8.4(a)(ii), the receiving Party shall remain responsible for any failure by any Person who receives Confidential Information from such receiving Party pursuant to this Section 8.4(a)(ii) to treat such Confidential Information as required under this ARTICLE 8;

(iii) with respect to Editas, any Editas Collaboration Know-How comprising the data or results of the Research Program or Joint Collaboration Know-How specific to the Collaboration RNP Complex or to Editas' Genome Editing Technology platform, to (A) any Third Party collaborator or sublicensee in connection with an actual or potential *bona fide* collaboration outside the Exclusive Field or (B) (1) Allergan as required pursuant to the Allergan Agreement, but solely to the extent such Know-How is specific to the Excluded Ocular Field, (2) Beam as required pursuant to the Beam Agreement, but solely to the extent such Know-How is specific to the Excluded Base Editing Non-Cancer Field, or (3) BlueRock as

required pursuant to the BlueRock Agreement, but solely to the extent such Know-How is specific to the BlueRock Field (provided that, for clarity, in each case ((1), (2) or (3)), such Know-How is not specific to any cancer field); provided, however, that in no event shall Editas or any of its Affiliates disclose or otherwise make available to any Third Party the sequence of any Collaboration RNP Complex (including the sequences of the gRNA or RGEN) or the sequence of any donor template or its component parts prior to such Third Party becoming an actual *bona fide* collaboration partner of Editas, without the prior written consent of Juno; provided, further, each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; provided, further, that in each of the above situations in this Section 8.4(a)(iii), Editas shall remain responsible for any failure by any Person who receives Confidential Information from Editas pursuant to this Section 8.4(a)(iii) to treat such Confidential Information as required under this ARTICLE 8;

(iv) solely with respect to disclosure of the terms of this Agreement, to (A) investors in connection with any private placement of equity securities of such Party or any of its Affiliates, (B) underwriters (and their legal counsel) in connection with other market financing of equity securities of such Party or any of its Affiliates or (C) lenders in connection with any loan or debt financing transaction of such Party or any of its Affiliates; provided that (1) each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; (2) in each of the above situations in this Section 8.4(a)(iv), the receiving Party shall remain responsible for any failure by any Person who receives Confidential Information from such receiving Party pursuant to this Section 8.4(a)(iv) to treat such Confidential Information as required under this ARTICLE 8; and (3) the disclosing Party shall only provide each such disclosee with a copy of this Agreement redacted as to terms not required in connection with the contemplated transaction; and

(v) disclosure, solely on a "need to know basis", to its advisors (including attorneys and accountants) in connection with activities hereunder; provided that, prior to any such disclosure, each disclosee must be bound by written obligations of confidentiality, non-disclosure and non-use no less restrictive than the obligations set forth in this ARTICLE 8 (provided, however, that in the case of legal or other professional advisors subject to professional standards of confidentiality, no written agreement shall be required), which for the avoidance of doubt, will not permit use of such Confidential Information for any purpose except those expressly permitted by this Agreement; provided, however, that, in each of the above situations in this Section 8.4(a)(v), the receiving Party shall remain responsible for any failure by any Person who receives Confidential Information from such receiving Party pursuant to this Section 8.4(a)(v) to treat such Confidential Information as required under this ARTICLE 8.

(b) *Terms of Disclosure*. If and whenever any Confidential Information is disclosed in accordance with Section 8.4(a), such disclosure shall not cause any such information to cease to be Confidential Information except to the extent that such disclosure results in a

public disclosure of such information (other than by breach of this Agreement). Where reasonably possible and subject to Section 8.4(c), the receiving Party shall notify the disclosing Party of the receiving Party's intent to make any disclosures pursuant to Section 8.4(a)(i) sufficiently prior to making such disclosure so as to allow the disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the information, and the receiving Party will provide reasonable assistance to the disclosing Party with respect thereto; provided that, in such event, the receiving Party will use reasonable measures to ensure confidential treatment of such information and shall only disclose such Confidential Information of the disclosing Party as is necessary for the purposes of Section 8.4(a)(i), as applicable.

(c) *Securities Filings; Disclosure under Applicable Law*. Each Party acknowledges and agrees that the other Party may submit this Agreement to (or file this Agreement with) the SEC or any national securities exchange in any jurisdiction (collectively, the "Securities Regulators"), or to other Persons as may be required by applicable Law, and if a Party does submit this Agreement to (or file this Agreement with) any Securities Regulators, or other Persons as may be required by applicable Law, such Party agrees to consult with the other Party with respect to the preparation and submission of a confidential treatment request for this Agreement and to mutually agree on the redactions to this Agreement to be submitted for confidential treatment request, such agreement not to be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, if a Party is required by applicable Law or any Securities Regulator to make a disclosure of the terms of this Agreement in a filing or other submission as required by applicable Law or Securities Regulator, and (i) such Party has provided copies of the disclosure to the other Party reasonably in advance of such filing or other disclosure under the circumstances, (ii) such Party has promptly notified the other Party in writing of such requirement and any respective timing constraints, and (iii) such Party has given the other Party a reasonable time under the circumstances from the date of notice by such Party of the required disclosure to comment upon and request confidential treatment for such disclosure, then such Party will have the right to make such disclosure at the time and in the manner reasonably determined by its counsel to be required by applicable Law or Securities Regulator if the other Party has not responded within such reasonable time period. Notwithstanding the foregoing, it is hereby understood and agreed that if a Party seeks to make a disclosure as required by applicable Law or Securities Regulator as set forth in this Section 8.4(c), and the other Party provides comments within the respective time periods or constraints specified herein or within the respective notice, the Party seeking to make such disclosure or its counsel, as the case may be, will in good faith consider incorporating such comments, and, with respect to submitting this Agreement to (or filing this Agreement with) any Securities Regulators, or other Persons as may be required by applicable Law, the Parties shall mutually agree on the redactions to this Agreement to be submitted for confidential treatment request, such agreement not to be unreasonably withheld, conditioned or delayed.

8.5 Publicity.

(a) *Press Release*. Subject to Section 8.4 and this Section 8.5, each Party shall not, and agrees to cause their Affiliates not to, issue any press release or other public statement disclosing this Agreement or the transactions contemplated hereby unless such press release or other public statement is approved by the other Party in writing; provided that either

Party shall be authorized to make any disclosure, without the approval of the other Party, that is required by applicable Law (including the U.S. Securities Act of 1933, as amended, and the U.S. Securities Exchange Act of 1934, as amended) or the rules of any Securities Regulator, or by judicial process, subject to and in accordance with Section 8.4. Without limiting the foregoing, the Parties agree that Editas (i) shall issue an initial press release regarding the execution of this Agreement promptly following, but in no event more than [**] following, the execution of this Agreement, in a form as mutually agreed to by the Parties in writing prior to the issuance thereof and (ii) following any exercise of Juno's Opt-In Right, Editas shall have the right to disclose the fact that Juno has exercised its Opt-In Right with respect to a Program; provided that Editas shall notify Juno reasonably in advance of any such press release or public statement and shall include any reasonable and timely comments from Juno, including any reasonable request to limit such press release or public statement, including to remove any Program-Specific Information or other Confidential Information of Juno or any of its Affiliates therein; provided, further, that Editas shall not disclose details regarding the Licensed Program, including any information sufficient to identify any Collaboration Target or Collaboration RNP Complex.

(b) *Additional Restrictions on Disclosure*. Without limiting any other restrictions on disclosure as set forth in this ARTICLE 8, with respect to any press release or other public statement proposed to be made by Editas which discloses any information with respect to the Research Program, or otherwise relates to any Collaboration Target or Collaboration RNP Complex, or the Research, Development, Manufacture or Commercialization of the foregoing in the Exclusive Field, such press release or other public statement may not be issued without Juno's prior written consent, except for such disclosures by Editas as required by applicable Law or Securities Regulators (solely and to the extent Editas' counsel determines such disclosure is required by applicable Law or Securities Regulators) and in accordance with Section 8.4, and in such case Editas shall use reasonable efforts to afford Juno a reasonable period of time to review any such disclosure and any comments made by Juno will be considered in good faith. Notwithstanding the foregoing, any information that has been previously publicly disclosed in accordance with this Agreement may be disclosed again as long as such disclosure is presented in substantially the same context and does not exceed the scope of such prior public disclosure. Subject to the foregoing, if Juno proposes that Editas use specific wording or language with respect thereto, Editas shall in good faith consider incorporating such wording or language.

8.6 Scientific Publications. During the Term, subject to Section 8.4 and Section 8.5, neither Party shall, and each Party shall cause its Affiliates not to, first publish or first present in a public forum the scientific or technical results of any activity performed pursuant to this Agreement (including any Program-Specific Information) without the opportunity for prior review and comment by the other Party in accordance with this Section 8.6. Each Party (the "Publishing Party") agrees to provide the other Party (the "Non-Publishing Party") with the opportunity to review any proposed abstract, manuscript or scientific presentation (including any verbal presentation) that relates to its activities performed pursuant to this Agreement during the Term, at least [**] prior to its intended submission for publication. The Non-Publishing Party shall respond in writing promptly and in no event later than [**] after receipt of the proposed publication (provided that the Non-Publishing Party shall use Commercially Reasonable Efforts to accommodate a shorter time period if notified by the Publishing Party and required due to

circumstances outside of the Publishing Party's control), with one or more of the following: (a) comments on the proposed publication, which the Publishing Party shall consider in good faith; (b) a specific statement of concern, based upon the need to seek Patent Rights protection or to block publication or public disclosure (including publications in journals, posters, presentations at conferences and abstracts submitted in advance of conferences) if the Non-Publishing Party reasonably determines that the proposed disclosure includes any intellectual property that should be maintained as a trade secret to protect Program-Specific Information, in which event the Publishing Party agrees not to submit such publication or make such presentation that contains such information for a reasonable period of time, and in no event more than [**], and the Parties agree to review and decide whether to seek patent protection for any such intellectual property in such publication or presentation which may be patentable or to resolve any other issues; or (c) an identification of the Non-Publishing Party's Confidential Information that is contained in the publication reviewed, which the Publishing Party shall remove, if requested by the Non-Publishing Party. Both Parties understand that a reasonable commercial strategy may require delay of publication of information, or filing of patent applications first, with respect to activities performed or results obtained pursuant to this Agreement during the Term, or not to publish at all if necessary to preserve trade secrets. The Parties agree to review and decide whether to delay publication of such information to permit filing of patent applications. For the avoidance of doubt, in no event shall either Party have the right to publish or present any Confidential Information of the other Party, except as provided in Section 8.4 or with the prior written consent of such other Party (in its sole discretion).

8.7 Nondisclosure of Terms. Each of the Parties agrees that the terms of this Agreement are Confidential Information of each Party and not to disclose the terms of this Agreement to any Third Party without the prior written consent of the other Party, which consent shall not be unreasonably withheld, except that each Party may disclose any of them in accordance with the provisions of Section 8.3, Section 8.4 and Section 8.5.

8.8 Use of Names and Marks. Except as otherwise expressly set forth herein, neither Party shall use the name, trade name, trademark or other designation of the other Party or its employees in connection with any products, promotion or advertising without the prior written permission of the other Party; provided that such permission shall not be required to the extent use thereof may be required by applicable Law or Securities Regulators, including the rules of any securities exchange or market on which a Party's (or its Affiliate's) securities are listed or traded.

8.9 Compliance with In-License Agreements. To the extent required under the terms of an In-License Agreement, Juno agrees that Editas may disclose this Agreement and its terms to the applicable In-Licensors; provided that Editas shall ensure that each such In-Licensor to whom this Agreement or its terms are disclosed is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in ARTICLE 8 to maintain the confidentiality thereof and not to use such information except as expressly permitted by this Agreement; and provided, further, that Editas shall remain responsible for any failure by any In-Licensor who receives such information to treat such information as required under ARTICLE 8.

ARTICLE 9
REPRESENTATIONS, WARRANTIES AND COVENANTS

9.1 Representations and Warranties of Juno. Juno represents and warrants that, as of the Original Effective Date (as though made then), the First Amendment Effective Date (as though made then) and the Amendment Date:

(a) it is duly organized, validly existing and in good standing under the applicable Law of the jurisdiction of its formation and has full corporate power and authority to enter into this Agreement, and to carry out the provisions hereof;

(b) it has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

(c) this Agreement has been duly executed and delivered on behalf of Juno, and constitutes a legal, valid, binding obligation, enforceable against it in accordance with its terms, except to the extent that enforcement of the rights and remedies created hereby is subject to (i) bankruptcy, insolvency, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors, or (ii) Laws governing specific performance, injunctive relief and other equitable remedies;

(d) the execution, delivery and performance of this Agreement by Juno does not breach or conflict with any agreement or any provision thereof, or any instrument or understanding, oral or written, to which Juno (or any of its Affiliates) is a party or by which Juno (or any of its Affiliates) is bound, nor violate any applicable Law of any Governmental Authority having jurisdiction over Juno (or any of its Affiliates);

(e) no government authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any applicable Law currently in effect, is or will be necessary for, or in connection with, the transaction contemplated by this Agreement, or for the performance by it of its obligations under this Agreement, except as set forth in Section 3.5;

(f) it has obtained all necessary authorizations, consents and approvals of any Third Party that is required to be obtained by it as of the Amendment Date for, or in connection with, the transaction contemplated by this Agreement, or for the performance by it of its obligations under this Agreement, except as set forth in Section 3.5; and

(g) to Juno's knowledge, other than Juno's interest in the Joint Collaboration IP, there is no Collaboration IP Controlled by Juno as of the Amendment Date.

9.2 Representations and Warranties of Editas. Editas represents and warrants that, as of the Original Effective Date (as though made then), the First Amendment Effective Date (as though made then) and the Amendment Date:

(a) it is duly organized, validly existing and in good standing under the applicable Law of the jurisdiction of its formation and has full corporate power and authority to enter into this Agreement, and to carry out the provisions hereof;

(b) it has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

(c) this Agreement has been duly executed and delivered on behalf of Editas, and constitutes a legal, valid, binding obligation, enforceable against it in accordance with its terms, except to the extent that enforcement of the rights and remedies created hereby is subject to (i) bankruptcy, insolvency, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors, or (ii) Laws governing specific performance, injunctive relief and other equitable remedies;

(d) the execution, delivery and performance of this Agreement by Editas does not breach or conflict with any agreement or any provision thereof, or any instrument or understanding, oral or written, to which Editas (or any of its Affiliates) is a party or by which Editas (or any of its Affiliates) is bound, nor violate any applicable Law of any Governmental Authority having jurisdiction over Editas (or any of its Affiliates);

(e) no government authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any applicable Law currently in effect, is or will be necessary for, or in connection with, the transaction contemplated by this Agreement, or for the performance by it of its obligations under this Agreement (including the grant of the rights to Juno hereunder, including the Opt-In Rights), except as set forth in Section 3.5; and

(f) it has obtained all necessary authorizations, consents and approvals of any Third Party that is required to be obtained by it as of the Amendment Date for, or in connection with, the transaction contemplated by this Agreement, or for the performance by it of its obligations under this Agreement, except as set forth in Section 3.5.

9.3 Additional Representations and Warranties of Editas. Except as otherwise set forth on Schedule 9.3, Editas represents and warrants that, as of the Amendment Date:

(a) Schedule 1.65 contains a complete and accurate list of all Editas Collaboration Patents that claim or cover any Genome Editing Technology, Initial Collaboration Target or RNP Complexes (or components thereof) that may be utilized with or otherwise Directed to any Initial Collaboration Target (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or components thereof)), including the composition, use, research, Development, Manufacture or Commercialization of any of the foregoing, and Editas Controls all such Editas Collaboration Patents. All issued patents within the Editas Collaboration Patents are in full force and effect, and have not been determined to be invalid or unenforceable, in whole or in part;

(b) no claim has been issued or served, or written threat of a claim or litigation made by any Person, against Editas or its Affiliates that alleges that any Patent Right within the Program Assets is invalid or unenforceable;

(c) (i) except with respect to the Editas Background IP licensed to Editas pursuant to an In-License Agreement, Editas or its Affiliate is the sole and exclusive owner of

the Program Assets and (ii) neither Editas nor its Affiliates have granted any mortgage, pledge, claim, security interest, lien or other charge of any kind on the Program Assets, and the Program Assets are free and clear of any mortgage, pledge, claim, security interest, lien or charge of any kind. Except with respect to the Editas Background IP licensed to Editas pursuant to an In-License Agreement, neither Editas nor any of its Affiliates have entered into any agreement under which Editas or any of its Affiliates has obtained a license or sublicense of rights from a Third Party to any Program Assets or that is otherwise necessary or useful to conduct its Research activities hereunder;

(d) with respect to any In-License Agreement, (i) Editas has provided Juno with a true, correct and complete copy thereof (provided that such copy may be redacted as to terms not applicable to a sublicensee thereunder), (ii) each is in full force and effect, (iii) neither Editas nor its Affiliates is in breach thereof, and (iv) neither Editas nor its Affiliates has received any notice from the In-Licensor to such In-License Agreement any breach or notice of threatened breach by Editas or its Affiliates thereof;

(e) except for the Program Assets, Editas and its Affiliates do not own or Control, any Patent Rights or Know-How that is necessary or useful to conduct its Research activities hereunder, and no Third Party has made claims regarding ownership of, nor are there other defects or deficiencies in the ownership of, the Program Assets in a manner that would materially adversely affect the scope (when taken as a whole) of Juno's licenses granted under this Agreement;

(f) except as otherwise disclosed by Editas' patent counsel via teleconference to Juno's patent counsel, to Editas' and any of its Affiliates' knowledge, the use of the Program Assets intended to be used in the Research Program as contemplated hereunder or the research, Development, Manufacture or Commercialization of any Genome Editing Technology, Initial Collaboration Target or RNP Complexes (or components thereof) that may be utilized with or otherwise Directed to any Initial Collaboration Target (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or components thereof)), would not result in the infringement of any issued patent owned by a Third Party and as to which Editas does not have a sufficient license or other right of use;

(g) neither Editas nor its Affiliates have received any written notice of any claim that any Patent Rights or Know-How (including any trade secret right) owned or controlled by a Third Party would be infringed or misappropriated by the Research Program activities hereunder or by the research, Development, Manufacture, or Commercialization of any Genome Editing Technology, Initial Collaboration Target or RNP Complexes (or components thereof) that may be utilized with or otherwise Directed to any Initial Collaboration Target (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or components thereof));

(h) Editas has the full right and authority to grant all of the rights and licenses granted to Juno (or purported to be granted to Juno) hereunder, and to be granted under the License Agreement, and neither Editas nor its Affiliates have granted any right or license to any Third Party that remains in effect as of the Amendment Date relating to any of the Program Assets in the Licensed Field, or the research, Development, Manufacture or Commercialization

of any Genome Editing Technology in the Licensed Field, or any Initial Collaboration Target or RNP Complexes (or components or sequences thereof) that could reasonably be expected to be utilized with or otherwise Directed to the Initial Collaboration Targets (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or any components or sequences thereof)) in the Licensed Field, in each case, that would conflict with or limit the scope of any of the rights or licenses (including the Opt-In Rights) granted to Juno hereunder or to be granted under the License Agreement or would otherwise violate Section 5.3(a);

(i) there are no claims, judgments, settlements, litigations, suits, actions, disputes, arbitration, judicial or legal administrative or other proceedings or governmental investigations pending or, to Editas' or its Affiliates' knowledge, threatened against Editas or any of its Affiliates which would reasonably be expected to adversely affect the Program Assets, or Editas' Control thereof;

(j) neither Editas nor any of its Affiliates have issued a claim against a Third Party alleging that a Third Party is infringing or has infringed or misappropriated any Program Assets, and, except as otherwise disclosed by Editas' patent counsel via teleconference to Juno's patent counsel, to Editas' or its Affiliates' knowledge, no issued patents within the Program Assets are being infringed and no trade secrets within the Program Assets are being misappropriated by any Third Party;

(k) neither Editas nor its Affiliates have employed or otherwise used in any capacity, the services of any Person suspended, proposed for debarment or debarred under United States law, including under 21 U.S.C. § 335a, or any foreign equivalent thereof, with respect to any Program Assets, or the research, Development, Manufacture or Commercialization of any Genome Editing Technology, Initial Collaboration Target or RNP Complexes (or any components or sequences thereof) that may be utilized with or otherwise Directed to any Initial Collaboration Target (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or any components or sequences thereof)), or is otherwise Directed to any Initial Collaboration Target. All Research Program activities related to any Genome Editing Technology, Initial Collaboration Target or RNP Complexes (or any components or sequences thereof) that could reasonably be expected to be utilized with or otherwise Directed to any Initial Collaboration Target (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or any components or sequences thereof)), conducted by or on behalf of Editas or any of its Affiliates prior to the Amendment Date (including under the Research Program) has been conducted in accordance with all applicable Laws (including, to the extent applicable, GCP, GLP and GMP);

(l) Editas has disclosed to Juno all material information and data, and all material correspondences to or from any Regulatory Authority, existing as at the Amendment Date in the possession or control of Editas or its Affiliates, in each case, related to any Initial Collaboration Target or RNP Complexes (or any components or sequences thereof) that could reasonably be expected to be utilized with or otherwise Directed to any Initial Collaboration Target (or product that constitutes, incorporates, comprises or contains any such RNP Complex (or any components or sequences thereof)), including the composition, use, research, Development, Manufacture or Commercialization of any of the foregoing; and

(m) Editas is required to include the provisions of Section 5.6 (including Schedule 5.6 thereto) and ARTICLE 11, in each case, to comply with the applicable In-License Agreement.

9.4 Additional Covenants of Editas.

(a) During the Term, Editas hereby further covenants to Juno that Editas shall promptly notify Juno in writing if any additional Editas Background Patents that claim or cover (i) any Program Assets, (ii) the research, Development, Manufacture or Commercialization of any Genome Editing Technology useful in the Licensed Field, or (iii) any Collaboration Target or Collaboration RNP Complexes (or any components or sequences thereof) or any other RNP Complexes (or any components or sequences thereof) that could reasonably be expected to be utilized with or otherwise Directed to any Collaboration Target in the Licensed Field (or product that constitutes, incorporates, comprises or contains any such Collaboration RNP Complexes or other RNP Complex (or any components or sequences thereof)), including the composition or use of any of the foregoing, becomes known to Editas.

(b) Editas shall promptly notify Juno in writing in the event that Editas no longer is subject to the restrictions on granting rights to Juno hereunder with respect to the Excluded Ocular Field under the Allergan Agreement or the Excluded Base Editing Non-Cancer Field under the Beam Agreement, or if BlueRock no longer has co-exclusive rights in the BlueRock Field under the BlueRock Agreement. Following the Amendment Date, Editas and its Affiliates shall not amend the Allergan Agreement, Beam Agreement or BlueRock Agreement in a manner that could conflict with or otherwise adversely affect the rights granted to Juno hereunder or under the License Agreement, including an expansion of the field under the Allergan Agreement, Beam Agreement or BlueRock Agreement, as applicable.

9.5 Disclaimer. JUNO AND EDITAS SPECIFICALLY DISCLAIM ANY GUARANTEE THAT THE RESEARCH PROGRAM SHALL BE SUCCESSFUL, IN WHOLE OR IN PART, OR THAT ANY OTHER PARTICULAR RESULTS WILL BE ACHIEVED WITH RESPECT TO THE RESEARCH PROGRAM, ANY COLLABORATION TARGET OR ANY COLLABORATION RNP COMPLEX HEREUNDER. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, EDITAS AND JUNO MAKE NO REPRESENTATIONS AND EXTEND NO WARRANTIES OR CONDITIONS OF ANY KIND, EITHER EXPRESS OR IMPLIED (AND EACH PARTY HEREBY EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES NOT EXPRESSLY PROVIDED IN THIS AGREEMENT), INCLUDING WITH RESPECT TO THE EDITAS BACKGROUND IP, COLLABORATION IP, INFORMATION DISCLOSED HEREUNDER, COLLABORATION TARGETS OR COLLABORATION RNP COMPLEXES, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR USE OR PURPOSE, VALIDITY OR ENFORCEABILITY OF ANY COLLABORATION IP, PATENTED OR UNPATENTED, OR NONINFRINGEMENT OF THE INTELLECTUAL PROPERTY RIGHTS OF THIRD PARTIES.

ARTICLE 10
INDEMNIFICATION

10.1 Juno. Juno agrees to indemnify, defend and hold harmless Editas and its Affiliates and its and their respective directors, officers, employees, agents and their respective successors, heirs and assigns (the "Editas Indemnitees") from and against any Third Party Damages to the extent arising out of or relating to, directly or indirectly, any Third Party Claim to the extent based upon: (a) bodily injury or death resulting from any activities under the Research Program performed by or on behalf of Juno or its Affiliates; (b) the negligence or willful misconduct of Juno or its Affiliates or its or their respective directors, officers, employees or agents, in connection with Juno's performance of its obligations under this Agreement; or (c) any breach by Juno of any of its representations, warranties or covenants made in this Agreement, except, in each case, to the extent such Third Party Damages result from any Third Party Claim covered under Section 10.2(c) or (d).

10.2 Editas. Editas agrees to indemnify, defend and hold Juno and its Affiliates and its and their respective directors, officers, employees, agents and their respective successors, heirs and assigns (the "Juno Indemnitees") harmless from and against any Third Party Damages to the extent arising out of or relating to, directly or indirectly, any Third Party Claim to the extent based upon: (a) bodily injury or death resulting from any activities under (i) the Research Program performed by or on behalf of Editas or its Affiliates or (ii) the Allergan Agreement, Beam Agreement or BlueRock Agreement or (b) bodily injury or death resulting from any Collaboration RNP Complex Researched, Developed, Manufactured, Commercialized, used, sold or otherwise distributed by or on behalf of Editas, its Affiliates or sublicensees outside of the Exclusive Field; (c) the negligence or willful misconduct of Editas or its Affiliates or its or their respective directors, officers, employees or agents, in connection with Editas' performance of its obligations under this Agreement; or (d) any breach by Editas of any of its representations, warranties and covenants made in this Agreement, except, in each case, to the extent such Third Party Damages result from any Third Party Claim covered under Section 10.1(b) or (c).

10.3 Indemnification Procedure. If a Party is seeking indemnification under Section 10.1 or Section 10.2, as applicable (the "Indemnitee"), it shall inform the other Party (the "Indemnitor") of the claim giving rise to the obligation to indemnify pursuant to Section 10.1 or Section 10.2, as applicable, as soon as reasonably practicable after receiving notice of the claim (provided, however, any delay or failure to provide such notice shall not constitute a waiver or release of, or otherwise limit, the Indemnitee's rights to indemnification under Section 10.1 or Section 10.2, as applicable, except to the extent that such delay or failure materially prejudices the Indemnitor's ability to defend against the relevant claims). The Indemnitor shall have the right to assume the defense of any such claim for which the Indemnitee is seeking indemnification pursuant to Section 10.1 or Section 10.2, as applicable. The Indemnitee shall cooperate with the Indemnitor and the Indemnitor's insurer as the Indemnitor may reasonably request, and at the Indemnitor's cost and expense. The Indemnitee shall have the right to participate, at its own expense and with counsel of its choice, in the defense of any claim or suit that has been assumed by the Indemnitor. The Indemnitor shall not settle any claim without the prior written consent of the Indemnitee, not to be unreasonably withheld, conditioned or delayed; provided, however, that the Indemnitor shall not be required to obtain such consent if the settlement (a) involves only the payment of money and will not result in the Indemnitee (or other Editas Indemnitees or Juno Indemnitees, as applicable) becoming subject to injunctive or other similar type of relief; (b) does not require an admission by the Indemnitee (or other Editas

Indemnitees or Juno Indemnitees, as applicable); and (c) if Editas is the Indemnitor, does not adversely affect the rights or licenses granted to Juno (or its Affiliate) under this Agreement or under the License Agreement. The Indemnitee shall not settle or compromise any such claim without the prior written consent of the Indemnitor, which it may provide in its sole discretion. If the Parties cannot agree as to the application of Section 10.1 or Section 10.2, as applicable, to any claim, pending resolution of the dispute pursuant to Section 13.2, the Parties may conduct separate defenses of such claims, with each Party retaining the right to claim indemnification from the other Party in accordance with Section 10.1 or Section 10.2, as applicable, upon resolution of the underlying claim. In each case, the Indemnitee shall reasonably cooperate with the Indemnitor, and shall make available to the Indemnitor all pertinent information under the Control of the Indemnitee, which information shall be subject to ARTICLE 8.

10.4 Insurance. During the Term and for a period of [**] thereafter, each Party shall maintain, at its cost, a program of insurance (or, with respect to Juno, self-insurance) against liability and other risks associated with its activities and obligations under this Agreement, and its indemnification obligations hereunder, in such amounts, subject to such deductibles and on such terms as are customary for such Party for the activities to be conducted by it under this Agreement. It is understood that such insurance shall not be construed to create a limit on either Party's liability with respect to its indemnification obligations under this ARTICLE 10, or otherwise.

10.5 LIMITATION OF LIABILITY. NEITHER EDITAS NOR JUNO, NOR ANY OF THEIR RESPECTIVE AFFILIATES, WILL BE LIABLE TO THE OTHER PARTY OR ITS AFFILIATES UNDER OR IN CONNECTION WITH THIS AGREEMENT FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR PUNITIVE OR EXEMPLARY DAMAGES (INCLUDING LOST PROFITS OR LOST REVENUES), WHETHER LIABILITY IS ASSERTED IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), INDEMNITY, CONTRIBUTION OR OTHERWISE, AND IRRESPECTIVE OF WHETHER THAT PARTY OR ANY REPRESENTATIVE OF THAT PARTY HAS BEEN ADVISED OF, OR OTHERWISE MIGHT HAVE ANTICIPATED THE POSSIBILITY OF, ANY SUCH LOSS OR DAMAGE. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 10.5 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY UNDER SECTION 10.1 OR SECTION 10.2 FOR ANY THIRD PARTY DAMAGES OR THE LIABILITY OF EITHER PARTY FOR ANY BREACHES OF ARTICLE 8 OR EDITAS FOR BREACH OF ANY OF ITS OBLIGATIONS UNDER SECTION 5.3.

ARTICLE 11
OTHER TERMS RELATING TO IN-LICENSES

11.1 Indemnification under the Harvard-Broad Licenses. Notwithstanding the provisions of ARTICLE 10 to the contrary, the provisions of this Section 11.1 shall apply to Juno's obligation to indemnify Institution Indemnitees, MGH Indemnitees, MIT Indemnitees and HHMI Indemnitees:

(a) *Indemnification*. Juno shall, and shall cause its Affiliates to, indemnify, defend and hold harmless the Institution Indemnitees and MIT Indemnitees from and against any claim, suit, investigation, action, demand, judgment, liability, cost, expense, damage, deficiency, loss or obligation of any kind or nature (including reasonable attorneys' fees and other costs and expenses of litigation or defense), based upon, arising out of, or otherwise relating to Juno's or its Affiliates' or Designees' activities under this Agreement or any sublicense or subcontract by Juno hereunder, including any cause of action relating to product liability concerning any product, process, or service made, used, sold or performed by Juno or any of its Affiliates or Designees pursuant to any right or license granted under this Agreement (collectively, "Claims") except to the extent any such Claim results from or arises out of the gross negligence or willful misconduct of an Institution Indemnitee or MIT Indemnitee seeking indemnification hereunder or material breach of the applicable Harvard-Broad License by an Institution. Juno and each of its Affiliates are referred to as "Juno Indemnitor" below.

(b) *Notification of Editas; Editas Right to Consent*. In the event that a Juno Indemnitor receives notice of any Claim for which indemnification may be sought hereunder, Juno shall promptly, but no longer than [**] later, notify Editas of such Claim and as soon as reasonably practicable thereafter provide Editas with all documentation and information Juno Indemnitor may have in its possession with regard thereto. Neither Juno, nor any of its Affiliates, may settle such Claim on terms that admit any liability on the part of Editas, impose any obligation on Editas, or diminish the rights of Editas without Editas' prior written consent, which may be given or withheld in Editas' sole discretion.

(c) *Procedures*. With respect to any Claim for which indemnification is sought by an Institution Indemnitee or MIT Indemnitee pursuant to Section 11.1(a), Juno acknowledges and agrees that the provisions of such Harvard-Broad License (as in effect as of the Amendment Date) relating to the procedures for indemnification shall apply as if such procedures were written in full herein, with the defined terms "Company" being deemed to refer to Juno, "Indemnitor" being deemed to refer to Juno and each of its Affiliates and "Indemnitees" being deemed to refer to Institution Indemnitees and MIT Indemnitees.

(d) *HHMI Indemnity*. HHMI Indemnitees shall be indemnified, defended by counsel acceptable to HHMI, and held harmless by Juno, from and against any Claim. The previous sentence shall not apply to any Claim that is determined with finality by a court of competent jurisdiction to result solely from the gross negligence or willful misconduct of an HHMI Indemnitee. Notwithstanding any other provision of this Agreement, Juno's obligation to defend, indemnify and hold harmless the HHMI Indemnitees under this paragraph shall not be subject to any limitation or exclusion of liability or damages or otherwise limited in any way.

(e) *MGH Indemnity*. Juno shall indemnify, defend and hold harmless MGH Indemnitees against any Claim, except to the extent any such Claim results directly from the gross negligence or willful misconduct of an MGH Indemnitee. With respect to any Claim for which indemnification is sought by an MGH Indemnitee pursuant to this Section 11.1(e), Juno acknowledges and agrees that the provisions of such MGH License (as in effect as of the Amendment Date) relating to the procedures for indemnification shall apply as if such procedures were written in full herein, with the defined terms "Company" being deemed to refer

to Juno, "Hospital" being deemed to refer to MGH and "Indemnitee(s)" being deemed to refer to MGH Indemnitee(s).

(f) Notwithstanding the foregoing provisions of this Section 11.1, (i) the Juno Indemnitors shall have no obligations to defend, indemnify or hold harmless any Institution Indemnitees, MGH Indemnitees, MIT Indemnitees and HHMI Indemnitees, if any Juno Indemnitors would have a claim for indemnification from Editas pursuant to Section 10.2 (in which case Editas shall be responsible for defending, indemnifying and holding harmless any Institution Indemnitees, MGH Indemnitees, MIT Indemnitees and HHMI Indemnitees, and the Juno Indemnitors shall be entitled to seek indemnification in accordance with Section 10.2) and (ii) the provisions of Section 10.5 shall apply.

11.2 Use of Names. Except as provided in this Section 11.2, Juno shall not, and shall ensure that its Affiliates shall not, use or register the name "The Broad Institute, Inc.," "Wyss Institute for Biologically Inspired Engineering at Harvard University," "President and Fellows of Harvard College," "Massachusetts Institute of Technology," "Lincoln Laboratory," "The Rockefeller University," "University of Tokyo," "TODAI TLO, Ltd.," "Wageningen University," "Wageningen University & Research," "University of Iowa Research Foundation," "University of Iowa," "The General Hospital Corporation," "Massachusetts General Hospital," "MGH," [**] "GenEdit," or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify such Persons or any of such Persons' schools, units, divisions or affiliates or any trustee, director, officer, staff member, employee, student or other agent of such Person ("Institution Names") for any purpose in connection with this Agreement, except as required by applicable Law or otherwise with the prior written approval of, and in accordance with restrictions required by, such Person. Juno further agrees, except as required by applicable Law or as otherwise provided below in this Section 11.2, not to use any Institution Names for any purpose in connection with this Agreement except with the prior written approval of, and in accordance with the restrictions required by, the applicable counterparty. Without limiting the foregoing, Juno shall, and shall ensure that its Affiliates shall cease all use of Institution Names in connection with this Agreement as permitted under this Agreement on the termination or expiration of this Agreement except as required by applicable Law or otherwise approved in writing by the applicable counterparty, as applicable. This restriction shall not apply to any information required by Law to be disclosed to any governmental entity. In connection with this Agreement, except as required by applicable Law, Juno shall not use or register the name "Howard Hughes Medical Institute" or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify HHMI or any unit of HHMI ("HHMI Names") or of any HHMI employee (including [**]) in a manner that reasonably could constitute an endorsement of a commercial product or service; but that use for other purposes, even if commercially motivated, is permitted provided that (1) the use is limited to accurately reporting factual events or occurrences, and (2) any reference to an HHMI Name or any HHMI employees (including [**]) in press releases or similar materials intended for public release is approved by HHMI in advance.

11.3 Intended Third Party Beneficiaries.

(a) *Institutions*. Juno acknowledges and agrees that for so long as the Editas Background IP includes IP licensed by Editas from Institutions under the applicable Foundational In-License:

(i) solely with respect to IP licensed to Editas under the Cas9-I License, Harvard and Broad are intended third party beneficiaries of this Agreement for the purpose of enforcing all Patent Rights challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the Patent Rights challenge, indemnification and insurance provisions of this Agreement with respect thereto; and HHMI, MIT and Rockefeller are intended third party beneficiaries of this Agreement for the purpose of enforcing HHMI's and MIT's respective rights with respect thereto, including indemnification and insurance provisions, under this Agreement as required by the Cas9-I License;

(ii) solely with respect to the IP licensed to Editas under the Cas9-II License, Broad is an intended third party beneficiary of this Agreement for the purpose of enforcing all Patent Rights challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the Patent Rights challenge, indemnification and insurance provisions of this Agreement with respect thereto; and Broad, Harvard, MIT and Iowa are intended third party beneficiaries of this Agreement for the purpose of enforcing Broad's, Harvard's, MIT's and Iowa's respective rights with respect thereto, including indemnification and insurance provisions, under this Agreement as required by the Cas9-II License; and

(iii) solely with respect to the IP licensed to Editas under the Cpf1 License, Broad is an intended third party beneficiary of this Agreement for the purpose of enforcing all Patent Rights challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the Patent Rights challenge, indemnification and insurance provisions of this Agreement with respect thereto; and Broad, Harvard, MIT, UTokyo and Wageningen are intended third party beneficiaries of this Agreement for the purpose of enforcing Broad's, Harvard's, MIT's, UTokyo's and Wageningen's respective rights with respect thereto, including indemnification and insurance provisions, under this Agreement as required by the Cpf1 License.

(b) *MGH*. Juno acknowledges and agrees that for so long as the Editas Background IP includes any IP licensed by Editas from MGH under the 2014 MGH Agreement or 2016 MGH Agreement, then solely with respect to the IP licensed to Editas under the 2014 MGH Agreement or 2016 MGH Agreement, MGH is an intended third party beneficiary of this Agreement for the purpose of enforcing all Patent Rights challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the Patent Rights challenge, indemnification or insurance provisions of this Agreement with respect thereto.

ARTICLE 12
TERM AND TERMINATION

12.1 Term. This Agreement shall commence on the Original Effective Date and, unless earlier terminated, shall continue in full force and effect until the last to occur of the following: (a) expiration of all Opt-In Terms; and (b) expiration of the Research Program Term (the "Term").

12.2 Termination for Breach.

(a) Material Breach. This Agreement may be terminated by a Party for the material breach by the other Party of this Agreement; provided that the breaching Party has not cured such breach within sixty (60) days after the date of written notice to the breaching Party of such breach (the "Cure Period"), which notice shall describe such breach in reasonable detail and shall state the non-breaching Party's intention to terminate this Agreement. For clarity, but subject to Section 12.2(b), the Cure Period for any allegation made as to a material breach under this Agreement will run from the date that written notice was first provided to the breaching Party by the non-breaching Party. Any such termination of this Agreement under this Section 12.2(a) shall become effective at the end of the Cure Period, unless the breaching Party has cured such breach prior to the expiration of such Cure Period, or, if such breach is not susceptible to cure within the Cure Period, then such Cure Period shall be extended for an additional sixty (60) days so long as such material breach is susceptible to cure within such extension period and the breaching Party has used and continues to use commercially reasonable efforts to cure such material breach during such extension period.

(b) Disagreement as to Material Breach. Notwithstanding Section 12.2(a), if the Parties in good faith disagree as to whether there has been a material breach of this Agreement pursuant to Section 12.2(a), then: (i) the Party that disputes that there has been a material breach may contest the allegation by referring such matter, within [**] following such written notice of alleged material breach, for resolution to the Executive Officers, who shall meet promptly to discuss the matter and determine, within [**] following referral of such matter, whether or not a material breach has occurred pursuant to Section 12.2(a); provided that if the Executive Officers are unable to resolve such dispute within such [**] period after it is referred to them, the matter will be resolved as provided in Section 13.2; (ii) the relevant Cure Period with respect thereto will be tolled from the date the breaching Party notifies the non-breaching Party of such dispute and through the resolution of such dispute in accordance with the applicable provisions of this Agreement; (iii) during the pendency of such dispute, all of the terms and conditions of this Agreement shall remain in effect and the Parties shall continue to perform all of their respective obligations hereunder; and (iv) if it is ultimately determined that the breaching Party committed such material breach, then the breaching Party shall have the right to cure such material breach, after such determination, within the Cure Period (as may be extended in accordance with Section 12.2(a)) which shall commence as of the date of such determination. Notwithstanding the foregoing, the applicable dispute resolution terms of Section 5.6 shall apply with respect to termination rights solely with respect to any IP Controlled by Editas under the Harvard-Broad Licenses.

12.3 Termination upon Notice. Juno may terminate this Agreement upon not less than six (6) months' prior written notice to Editas.

12.4 Termination for Bankruptcy. To the extent allowed under Law, either Party shall have the right to terminate this Agreement in the event of the commencement of any proceeding in or for bankruptcy, insolvency, dissolution or winding up by or against the other Party (other than pursuant to a corporate restructuring) that is not dismissed or otherwise disposed of within [**] thereafter.

12.5 Termination for Patent Challenge. In the event that Juno (or its Affiliate or Third Party sublicensee) brings a Patent Challenge against an Editas Background Patent or Editas Collaboration Patent or knowingly assists another party in a Patent Challenge against an Editas Background Patent or Editas Collaboration Patent, except as required under a court order or subpoena or where Juno (or its Affiliate or Third Party sublicensee) is required by legal process to be joined as a party to the Patent Challenge proceeding, Editas shall have the option to terminate this Agreement at its sole discretion with respect to such Editas Background Patent(s) or Editas Collaboration Patent(s), as applicable, that are subject of the Patent Challenge upon [**] written notice to Juno if such Patent Challenge or assistance, as applicable, is not dropped by Juno within such [**] period; provided that Editas shall not have the right to terminate this Agreement with respect to the applicable Editas Background Patent(s) or Editas Collaboration Patent(s), as applicable, under this Section 12.5, with respect to any such Patent Challenge by a Third Party sublicensee if Juno terminates the sublicense granted to such sublicensee with respect to the challenged Editas Background Patent(s) or Editas Collaboration Patent(s), as applicable, within [**] of Editas' notice to Juno under this Section 12.5. Notwithstanding the foregoing, the applicable terms of Section 5.6 shall apply with respect to any Patent Challenge brought by Juno against Patent Rights Controlled by Editas under the Harvard-Broad Licenses.

12.6 Effect of Expiration or Termination.

(a) *Accrued Rights and Obligations*. Expiration or termination of this Agreement for any reason shall not release either Party from any liability which, at the time of such expiration or termination, has already accrued to the other Party or which is attributable to a period prior to such expiration or termination nor preclude either Party from pursuing any rights and remedies it may have hereunder or at law or in equity with respect to any breach of this Agreement. Such expiration or termination shall not relieve either Party from obligations which are expressly indicated to survive expiration or termination of this Agreement, including as set forth in Section 12.6(c). Following the expiration of the Term, the licenses granted to Juno pursuant to Section 5.2(b) shall become perpetual and fully paid-up licenses.

(b) *Return of Confidential Information*. Upon any termination of this Agreement, each Party shall promptly return to the other Party or destroy all Confidential Information of the other Party (other than joint Confidential Information), except as reasonably necessary to exercise any surviving rights (or, in the case of Juno, the exercise of any rights or licenses under the License Agreement) and except for one copy of which may be retained for archival purposes (which shall remain subject to the confidentiality and non-use provisions of ARTICLE 8).

(c) *Survival Sections*. Without limiting Section 12.6(a), the rights and obligations of the Parties set forth in the following Sections and Articles of this Agreement shall survive the expiration or termination of this Agreement, in addition to those other terms and conditions that are expressly stated to survive termination or expiration of this Agreement: ARTICLE 1 (to the extent the definitions are used in other surviving provisions), Section 2.5, Section 2.7(c), Section 2.7(d), Section 3.4, Section 3.5, Section 3.6, Section 5.2(b), Section 5.4, Section 5.5, Sections 6.4 and 6.5 (with respect to any payment obligations accrued but unpaid prior to the effectiveness of such termination or expiration), Section 6.6, Section 6.7, Section 7.1, Sections 7.2 and 7.3 (solely with respect to Joint Collaboration Patents if there is no Program under the License Agreement covering the applicable Joint Collaboration Patents), Section 7.7, ARTICLE 8, Section 9.5, ARTICLE 10, ARTICLE 11 (solely to the extent the applicable In-License Agreement, or the surviving provisions thereof (to the extent the applicable provisions survive), is in full force and effect) Section 12.6, Section 12.7 and ARTICLE 13.

(d) *Termination Not Sole Remedy*. The termination provisions of this ARTICLE 12 are in addition to any other relief and remedies available to either Party under this Agreement and at law or equity.

(e) *Relationship to License Agreement*. Termination of this Agreement shall not affect in any way the terms or provisions of the License Agreement, and the License Agreement shall continue in full force and effect in accordance with its terms and conditions.

12.7 Certain Additional Remedies of Juno in Lieu of Termination. If Juno has the right to terminate this Agreement pursuant to Section 12.2, then in lieu of Juno terminating pursuant to Section 12.2 and without limiting any other rights or remedies of Juno, Juno may elect to have this Agreement continue in full force and effect as modified by this Section 12.7 by providing written notice to Editas prior to the date that otherwise would have been the effective date of termination had Juno exercised its right to terminate this Agreement under Section 12.2; provided that (a) Juno has provided notice to Editas asserting the alleged breach as required by Section 12.2, and (b) Editas fails to cure such breach prior to the expiration of the applicable Cure Period (provided that if Editas has notified Juno that it disputes that it is in material breach in accordance with Section 12.2(b), then the Cure Period shall be tolled during the pendency of such dispute as set forth in Section 12.2(b)). In such an event, Juno shall be entitled to (but shall not be required to), by written notice to Editas: (x) designate any Collaboration RNP Complex (other than a previously Lapsed Collaboration RNP Complex) as a "Lead Candidate"; and (y) on a Program-by-Program basis, exercise its Opt-In Right as set forth in Section 3.2 with respect to any such Program as to which Juno has not previously exercised its Opt-In Right (each, an "Accelerated Program") and enter into a Licensed Program Addendum for any such Program and in such case with respect to such Accelerated Program, (A) Juno shall not be required to pay the Opt-In Exercise Fee (under, and as defined in, the License Agreement) in connection with the exercise of such Opt-In Right with respect to such Accelerated Program; (B) the diligence requirements under the License Agreement with respect to such Accelerated Program shall not apply to such Accelerated Programs; and (C) Juno shall remain responsible for any and all amounts thereafter payable by Juno under the License Agreement (other than the Opt-In Exercise Fee but including all milestones and royalties) with respect to any Accelerated Program for which Juno made such election under this Section 12.7; provided that the milestones and

royalties that would otherwise be payable under the License Agreement with respect to any Accelerated Program shall be reduced by [**] percent ([**]%). For the avoidance of doubt, there shall be no impact on any Program under the License Agreement other than an Accelerated Program.

ARTICLE 13
MISCELLANEOUS

13.1 Governing Laws; Venue; Jurisdiction. This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of New York, without regard to principles of conflicts or choice of laws that would cause the application of the laws of another jurisdiction and excluding the United Nations Convention on Contracts for the International Sales of Goods; provided, however, that with respect to matters involving the validity or infringement of Patent Rights in a given country, such matter may be brought in the applicable country and the applicable Laws of the applicable country shall apply (subject to Section 7.1(b)). Subject to Section 13.2, Disputes arising out of this Agreement shall be subject to the exclusive jurisdiction and venue of the state and federal courts located in New York, New York (and the appellate courts thereof), and each Party hereby irrevocably consents to the personal and exclusive jurisdiction and venue thereof.

13.2 Disputes.

(a) *General*. Except for decisions that are subject to the final decision-making authority of the JSC pursuant to Section 4.2(f) or a given Party, in each case, as expressly set forth in this Agreement and so long as such decisions are made in accordance with this Agreement, any dispute, claim or controversy of any nature arising out of or relating to this Agreement, including any action or claim based on tort, contract or statute, or concerning the interpretation, effect, termination, validity, performance or breach of this Agreement (each, a "Dispute"), arises between the Parties and the Parties cannot resolve such Dispute within [**] of a written request by either Party to the other Party, the Parties agree to refer the Dispute to the respective Executive Officers of each Party for resolution.

(b) *Arbitration*. If, after an additional [**], such representatives have not succeeded in negotiating a resolution of the Dispute, and a Party wishes to begin an arbitration to resolve such Dispute arising under this Agreement, such Party shall provide written notice (the "Arbitration Request") to the other Party of such intention and a statement of the issues for resolution. From the date of the Arbitration Request and until such time as such Dispute has become finally settled, the running of the time periods as to which Party must cure a breach of this Agreement becomes suspended as to any breach that is the subject matter of the Dispute. Within [**] after the receipt of the Arbitration Request, the other Party may, by written notice, add additional issues for resolution in a statement of counter-issues.

(c) *Arbitration Procedure*. Any arbitration pursuant to this ARTICLE 13 will be held in New York, New York, United States unless another location is mutually agreed by the Parties. The arbitration will be governed by the United States Arbitration Act, 9 U.S.C. §§ 1-16, to the exclusion of any inconsistent state Law. The Parties shall mutually agree on the rules to govern discovery and the rules of evidence for the arbitration within [**] after the Arbitration

Request. If the Parties fail to timely agree to such rules, the United States Federal Rules of Civil Procedure will govern discovery and the United States Federal Rules of Evidence will govern evidence for the arbitration. The arbitration will be conducted by a single arbitrator knowledgeable in the subject matter at issue in the dispute and acceptable to both Parties; provided that the Parties may by mutual agreement elect to have the arbitration conducted by a panel of three (3) arbitrators. If the Parties fail to agree on a mutually acceptable arbitrator within [**] after the Arbitration Request, then the arbitrator shall be selected by the New York, New York office of the American Arbitration Association. The arbitrator may proceed to an award, notwithstanding the failure of either Party to participate in the proceedings. The arbitrator shall, within [**] after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The arbitrator shall be limited in the scope of his or her authority to resolving only the specific matter which the Parties have referred to arbitration for resolution and shall not have authority to render any decision or award on any other issues. Subject to Section 10.5, the arbitrator shall be authorized to award compensatory damages, but shall not be authorized to award punitive, special, consequential, or any other similar form of damages, or to reform, modify or materially change this Agreement. The arbitrator also shall be authorized to grant any temporary, preliminary or permanent equitable remedy or relief the arbitrator deems just and equitable and within the scope of this Agreement, including an injunction or order for specific performance. The award of the arbitrator shall be the sole and exclusive remedy of the Parties, except for those remedies that are set forth in this Agreement or which apply to a Party by operation of the applicable provisions of this Agreement, and the Parties hereby expressly agree to waive the right to appeal from the decisions of the arbitrator, and there shall be no appeal to any court or other authority (government or private) from the decision of the arbitrator. Judgment on the award rendered by the arbitrator may be enforced in any court having competent jurisdiction thereof.

(d) *Arbitration Costs*. Each Party shall bear its own attorneys' fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the arbitrator; provided, however, that the arbitrator, in his or her award, shall be authorized to determine whether a Party is the prevailing Party, and if so, to award to that prevailing Party reimbursement for its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, transcripts, photocopy charges and travel expenses).

(e) *Confidentiality*. All proceedings and decisions of the arbitrator shall be deemed Confidential Information of each of the Parties, and shall be subject to ARTICLE 8.

(f) *Equitable Relief; Cumulative Remedies*. Notwithstanding anything to the contrary herein, including Section 13.2(b), either Party may, without waiving any remedy under this Agreement, seek from any court having jurisdiction equitable relief, including any injunctive or provisional relief and specific performance to protect the rights or property of that Party. Such remedies will not be deemed to be the exclusive remedies for a breach of this Agreement but will be in addition to all other remedies available at law or equity. In addition, notwithstanding the provisions of Section 13.2(b), either Party may bring an action in any court having jurisdiction to enforce an award rendered pursuant to Section 13.2(b). The Parties further agree not to raise as a defense or objection to the request or granting of such relief that any

breach of this Agreement is or would be compensable by an award of money damages. No remedy referred to in this Agreement is intended to be exclusive, but each shall be cumulative and in addition to any other remedy referred to in this Agreement or otherwise available under applicable Law.

(g) *Pending Final Resolution*. Until final resolution of the Dispute in accordance with this Agreement, (i) this Agreement will remain in full force and effect; and (ii) the time periods for cure as to any termination will be tolled. The Parties further agree that any payments made pursuant to this Agreement pending resolution of the dispute shall be refunded if a final determination is made in accordance with this Agreement that such payments are not due.

(h) *WAIVER OF JURY TRIAL*. EXCEPT AS LIMITED BY APPLICABLE LAW, EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED IN CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE ACTIONS OF EITHER PARTY HERETO IN THE NEGOTIATION, ADMINISTRATION, PERFORMANCE AND ENFORCEMENT HEREOF.

13.3 Independent Contractors. The relationship of the Parties under this Agreement is that of independent contractors. Nothing contained herein is intended or is to be construed so as to constitute (a) Editas as a partner, agent, or joint venturer of Juno; or (b) Juno as a partner, agent or joint venturer of Editas. Neither Editas nor Juno, respectively, shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of Juno or Editas, respectively, or to bind Juno or Editas, respectively, to any contract, agreement, or undertaking with any Third Party.

13.4 Assignment.

(a) *General*. The Parties agree that, except as expressly permitted hereunder, neither this Agreement, nor their rights and obligations under this Agreement, shall be delegated, assigned or otherwise transferred by a Party, in whole or part, whether voluntarily or by operation of law, including by way of sale of assets, merger or consolidation, without prior written consent of the other Party. Notwithstanding the foregoing, a Party may, without such consent, assign this Agreement and its rights and obligations hereunder in their entirety (i) to an Affiliate (provided, however, that such Party will remain fully and unconditionally liable and responsible to the other Party for the performance and observance of all such duties and obligations by such Affiliate), provided that, upon written request by the other Party, such Party will disclose to the other Party whether it has assigned this Agreement to an Affiliate and in such case, the identity of such Affiliate, or (ii) its successor in interest in connection with its merger, consolidation, or sale of all or substantially all of its assets or that portion of its business pertaining to the subject matter of this Agreement. Subject to the foregoing, this Agreement shall be binding on and inure to the benefit of the Parties and their permitted successors and assigns. Any attempted delegation, assignment or transfer in violation of this Section 13.4 shall be null and void *ab initio*.

(b) *Additional Restrictions for Institution In-Licenses*. Without limiting the foregoing, Juno agrees that the rights granted under this Agreement pursuant to the Harvard-

Broad Licenses may not be assigned by Juno, whether by operation of law or otherwise, without the consent of the Institutions, except that Juno may assign or transfer such rights under this Agreement without the consent of the Institutions, to a successor in interest of all or substantially all of Juno's assets or business related to the Collaboration RNP Complexes or this Agreement, whether by merger, consolidation, sale of assets, or Change of Control or other transaction; provided that (i) Juno shall provide the Institutions with a written notice of such assignment or Change of Control including the identity of the assignee, transferee or controlling party, and a copy of the assignment and assumption agreement or other documentary evidence sufficient to demonstrate Juno's compliance with this Section 13.4(b) within [**] after such assignment or Change of Control, and (ii) such assignee or transferee agrees in writing to assume the obligations to the Institutions and HHMI that are being assigned or transferred. Failure of an assignee to agree to be bound by the terms hereof or failure of Juno to notify Institutions and provide copies of assignment documentation as specified above shall be grounds for termination of Juno's sublicense under the applicable Harvard-Broad License(s) with respect to Juno's rights under the applicable Editas Background Patent(s) that are the subject of such Harvard-Broad License(s).

(c) *Additional Restrictions for MGH In-Licenses*. Juno may assign or transfer the rights granted under this Agreement to Juno pursuant to the MGH License: (i) without the consent of MGH, to an Affiliate of Juno or in connection with the transfer or sale of all or substantially all of Juno's assets or business related to the Collaboration RNP Complexes or this Agreement, whether by merger, consolidation, sale of assets, change in control or other transaction, provided that Juno promptly shall provide MGH with a written notice of such assignment including the identity of the assignee or transferee and such assignee or transferee agrees in writing to assume the obligations to MGH that are being assigned or transferred; and (ii) in any other circumstance, only with the prior written consent of MGH, such consent not to be unreasonably withheld, conditioned or delayed. Juno shall notify MGH in writing of any such assignment and provide a copy of the assignment and assumption agreement or other documentary evidence sufficient to demonstrate Juno's compliance with this Section 13.4(c) within [**] after such assignment. Failure of an assignee to agree to be bound by the terms hereof or failure of Juno to notify MGH and provide copies of assignment documentation shall be grounds for termination of Juno's sublicense under the MGH License with respect to Juno's rights under the applicable Editas Background Patent(s) that are the subject of the MGH License.

(d) *Assignment to Bristol-Myers Squibb.* Editas hereby represents and warrants that, as of the Amendment Date, it has notified each of the Institutions and MGH of the pending merger between Bristol-Myers Squibb Company (or its affiliate) and Celgene Corporation (or its affiliate), and no further consents on the part of the Institutions or MGH, and no further actions on the part of Juno or its successors, are required under the Harvard-Broad Licenses or the MGH Licenses in connection with any assignment of this Agreement as a result thereof; provided that within [**] after the effective date of such merger, Juno shall provide a signed notice with respect thereto to the Institutions and MGH.

13.5 Force Majeure. A Party shall not be liable for delay or failure in the performance of any of its obligations hereunder if such delay or failure is due to a cause beyond the reasonable control of such Party, including acts of God, fires, earthquakes, acts of war, terrorism,

or civil unrest, or hurricane or other inclement weather ("Force Majeure"); provided, however, that the affected Party promptly notifies the other Party and further provided that the affected Party shall use its commercially reasonable efforts to avoid or remove such causes of non-performance and to mitigate the effect of such occurrence, and shall continue performance in accordance with the terms of this Agreement whenever such causes are removed. When such circumstances arise, the Parties shall negotiate in good faith any modifications of the terms of this Agreement that may be necessary or appropriate in order to arrive at an equitable solution.

13.6 Right to Develop Independently. Except as otherwise expressly set forth in this Agreement, including Section 5.3, nothing in this Agreement shall impair either Party's right to independently acquire, license, develop for itself, or have others develop for it, intellectual property and technology performing similar functions as the other Party's intellectual property or to market and distribute products or services based on such other intellectual property and technology.

13.7 Notices. Any notice required or permitted to be given by this Agreement shall be in writing and in English and shall be (a) delivered by hand or by overnight courier with tracking capabilities; (b) mailed postage prepaid by first class, registered, or certified mail; or (c) delivered by facsimile followed by delivery via either of the methods set forth in Section 13.7 (a) or (b), in each case, addressed as set forth below unless changed by notice so given:

If to Juno:

Celgene Corporation
86 Morris Avenue
Summit, New Jersey 07901
U.S.A.
Attention: General Counsel
Facsimile: [**]

If to Editas:

Editas Medicine, Inc.
11 Hurley St
Cambridge, MA 021421
Attention: Chief Executive Officer

With copies to (which shall not constitute notice):

Editas Medicine, Inc.
11 Hurley St
Cambridge, MA 02141
Attention: General Counsel

Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109
Attention: Steven D. Barrett, Esq.

Any such notice shall be deemed given on the date received, except any notice received after

5:30 p.m. (in the time zone of the receiving party) on a Business Day or received on a non-Business Day shall be deemed to have been received on the next Business Day. A Party may add, delete, or change the person or address to which notices should be sent at any time upon written notice delivered to the other Parties in accordance with this Section 13.7.

13.8 Interpretation.

(a) *Generally*. This Agreement has been diligently reviewed by and negotiated by and among the Parties, and in such negotiations each of the Parties has been represented by competent (in house or external) counsel, and the final agreement contained herein, including the language whereby it has been expressed, represents the joint efforts of the Parties and their counsel. Accordingly, in interpreting this Agreement or any provision hereof, no presumption shall apply against either Party as being responsible for the wording or drafting of this Agreement or any such provision, and ambiguities, if any, in this Agreement shall not be construed against either Party, irrespective of which Party may be deemed to have authored the ambiguous provision.

(b) *Definitions; Interpretation*. The definitions of the terms herein shall apply equally to the singular and plural forms of the terms defined and where a word or phrase is defined herein, each of its other grammatical forms shall have a corresponding meaning. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine, and neuter forms. The word "will" shall be construed to have the same meaning and effect as the word "shall". The words "including", "includes", "include", "for example" and "e.g." and words of similar import will be deemed to be followed by the words "without limitation." The word "or" shall be construed as the inclusive meaning identified with the phrase "and/or". The words "hereof", "herein" and "herewith" and words of similar import shall, unless otherwise stated, be construed to refer to this Agreement as a whole and not to any particular provision of this Agreement. Unless the context requires otherwise or otherwise specifically provided, (i) all references herein to Articles, Sections, Schedules or Exhibits shall be construed to refer to Articles, Sections, Schedules and Exhibits of this Agreement and (ii) reference in any Section to any subclauses are references to such subclauses of such Section.

(c) *Subsequent Events*. Unless the context requires otherwise, (i) any definition of or reference to any agreement, instrument, or other document herein shall be construed as referring to such agreement, instrument, or other document as from time to time amended, supplemented, or otherwise modified (subject to any restrictions on such amendments, supplements, or modifications set forth herein), (ii) any reference to any applicable Law herein shall be construed as referring to such applicable Law as from time to time enacted, repealed, or amended, and (iii) any reference herein to any Person shall be construed to include the Person's successors and assigns (subject to Section 13.4).

(d) *Headings*. Headings, captions and the table of contents are for convenience only and are not to be used in the interpretation of this Agreement.

(e) *Independent Significance*. Although the same or similar subject matters may be addressed in different provisions of this Agreement, the Parties intend that, except as reasonably apparent on the face of the Agreement or as expressly provided in this Agreement,

each such provision shall be read separately, be given independent significance and not be construed as limiting any other provision of this Agreement (whether or not more general or more specific in scope, substance or content).

13.9 Further Assurances. At any time or from time to time on and after the date of this Agreement, a Party shall at the written and reasonable request of the requesting Party: (a) deliver to the requesting Party such records, data or other documents consistent with the provisions of this Agreement; (b) execute, and deliver or cause to be delivered, all such consents, documents or further instruments of transfer or license; and (c) take or cause to be taken all such ministerial actions, as the requesting Party may reasonably deem necessary or desirable in order for the requesting Party to obtain the full benefits of this Agreement and the transactions contemplated hereby.

13.10 Severability. If any provision, or portion thereof, in this Agreement is held by a court of competent jurisdiction to be void, invalid or unenforceable to any extent, such holding shall not affect the validity or enforceability of the remaining terms and provisions hereof or the validity or enforceability of the invalid, void or unenforceable term or provision in any other situation or in any other jurisdiction, and the term or provision shall be considered severed from this Agreement solely for such situation and solely in such jurisdiction, unless the invalid, void or unenforceable term or provision is of such essential importance to this Agreement that it is to be reasonably assumed that the Parties would not have entered into this Agreement without the invalid, void or unenforceable term or provision. If the final judgment of such court declares that any term or provision hereof is invalid, void or unenforceable, the Parties agree to (a) reduce the scope, duration, area or applicability of the term or provision or to delete specific words or phrases to the minimum extent necessary to cause such term or provision as so reduced or amended to be enforceable; and (b) make a good faith effort to replace any invalid, void or unenforceable term or provision with a valid and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

13.11 Waiver. Any waiver, modification, release or amendment of any obligation under or of any provision of this Agreement or of a Party's rights or remedies under this Agreement must be in writing to be effective. Failure, neglect, or delay by a Party to enforce the provisions of this Agreement or its rights or remedies at any time, shall not be construed as a waiver of such Party's rights under this Agreement and shall not in any way affect the validity of the whole or any part of this Agreement or prejudice such Party's right to take subsequent action. No exercise or enforcement by either Party of any right or remedy under this Agreement shall preclude the enforcement by such Party of any other right or remedy under this Agreement or that such Party is entitled by Law to enforce.

13.12 Entire Agreement; Modification. This Agreement, together with the attached exhibits (including the License Agreement and form of Editas Material Transfer Agreement) and schedules, as well as any and all executed Licensed Program Addendum and Editas Material Transfer Agreement, as applicable, and any amendments hereto or thereto made in accordance with the terms hereof or thereof, constitutes the entire understanding and agreement between the Parties with respect to the subject matter hereof and supersedes any and all prior and contemporaneous negotiations, representations, agreements, and understandings, written or oral, that the Parties may have reached with respect to the subject matter hereof. Except as otherwise

expressly set forth herein, this Agreement may not be altered, amended or modified in any way except by a writing (excluding email or similar electronic transmissions) signed by the authorized representatives of both Parties. Upon execution of this Agreement by both Parties, the Original Agreement and the First Amended and Restated Agreement shall be amended and restated in its entirety as set forth herein and superseded by this Agreement. If a Licensed Program Addendum is entered into with respect to a given Program, then to the extent there is a conflict between the provisions of this Agreement, the provisions of the License Agreement shall control with respect to such Program.

13.13 No Third Party Beneficiaries. Except as expressly set forth in this Agreement, there are no Third Party beneficiaries hereunder and the provisions of this Agreement are for the exclusive benefit of the Parties, and no other person or entity shall have any right or claim against either Party by reason of these provisions or be entitled to enforce any of these provisions against such Party.

13.14 Extension to Affiliates. Juno shall have the right to extend the rights, licenses, immunities and obligations granted in this Agreement to one or more of its Affiliates. All applicable terms and provisions of this Agreement shall apply to any such Affiliate to which this Agreement has been extended to the same extent as such terms and provisions apply to Juno. Juno shall remain fully liable for any acts or omissions of such Affiliates and for such Affiliates' performance and observance of all duties and obligations under this Agreement.

13.15 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Any such counterpart, to the extent delivered by means of a fax machine or by .pdf, .tif, .gif, .jpeg or similar attachment to electronic mail (any such delivery, an "Electronic Delivery") shall be treated in all manner and respects as an original executed counterpart and shall be considered to have the same binding legal effect as if it were the original signed version thereof delivered in person. No Party hereto shall raise the use of Electronic Delivery to deliver a signature or the fact that any signature or agreement or instrument was transmitted or communicated through the use of Electronic Delivery as a defense to the formation of a contract, and each Party forever waives any such defense, except to the extent that such defense relates to lack of authenticity.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by their authorized representatives as of the Amendment Date.

EDITAS MEDICINE, INC.		JUNO THERAPEUTICS, INC.	
By:	/s/ Cynthia Collins	By:	/s/ Gary Henningson
Name:	Cynthia Collins	Name:	Gary Henningson
Title:	President and CEO	Title:	VP and Treasurer

[SIGNATURE PAGE TO SECOND AMENDED AND
RESTATED COLLABORATION AND LICENSE AGREEMENT]

EXHIBIT A

License Agreement

Incorporated by reference to Exhibit 10.21 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2019

Exhibit 10.21

EXECUTION VERSION

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm to the Company, if publicly disclosed. Double asterisks denote omissions.

LICENSE AGREEMENT

by and between

EDITAS MEDICINE, INC.

and

JUNO THERAPEUTICS, INC.

Dated as of November 11, 2019

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LIST OF SCHEDULES AND EXHIBITS

LICENSE AGREEMENT

This LICENSE AGREEMENT (this "**Agreement**") is entered into and made effective as of November 11, 2019 (the "**Execution Date**") by and between Editas Medicine, Inc., a Delaware corporation, having its principal place of business at 11 Hurley St., Cambridge, MA 02141 corporation ("**Editas**") and Juno Therapeutics, Inc., a Delaware corporation, having its principal place of business at 400 Dexter Avenue North, Suite 1200, Seattle, WA 98109 ("**Juno**"). Juno and Editas are each referred to herein by name or as a "**Party**" or, collectively, as the "**Parties**".

RECITALS

WHEREAS, Editas and Juno are parties to that certain Amended and Restated Collaboration and License Agreement, dated as of May 3, 2018 (the "**First Amended and Restated Agreement**"), pursuant to which, among other things, Editas generated the Licensed RNP Complex for the Initial Licensed Program as of the Effective Date;

WHEREAS, Juno and Editas desire to enter into this License Agreement pursuant to which, among other things, Editas shall grant to Juno an exclusive license to exploit the Licensed RNP Complexes, together with IP related thereto, for use in the Research, Development, Manufacture and Commercialization of (a) α-β T-Cell therapies or (b) Other Derived T-Cell therapies, in each case, on the terms and subject to the conditions set forth in this Agreement;

WHEREAS, Editas and Juno are entering into that certain Second Amended and Restated Collaboration and License Agreement, dated as of the date hereof (the "**Master Collaboration Agreement**"), pursuant to which, among other things, the First Amended and Restated Agreement shall be amended and restated and Editas may conduct a Research Program (as defined in the Master Collaboration Agreement) to generate RNP Complexes that modulate the expression of Collaboration Targets (as defined in the Master Collaboration Agreement) selected by Juno; and

WHEREAS, pursuant to the terms of the Master Collaboration Agreement, upon each exercise by Juno of its Opt-In Right (as defined in the Master Collaboration Agreement) with respect to a given Program (as defined in the Master Collaboration Agreement), the Parties shall enter into a Licensed Program Addendum, pursuant to which, among other things, such Program shall become a Licensed Program and Editas shall grant to Juno an exclusive license to exploit Licensed RNP Complexes with respect to such Licensed Program, together with IP related thereto, for use in the Research, Development, Manufacture and Commercialization of (a) α-β T-Cell therapies or (b) Other Derived T-Cell therapies, in each case, on the terms and subject to the conditions set forth in this Agreement.

NOW, THEREFORE, in consideration of the foregoing and the mutual agreements set forth below, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE 1
DEFINITIONS

Unless specifically set forth to the contrary herein, the following terms shall have the respective meanings set forth below. Capitalized terms used, but not defined, herein will have the meanings ascribed to them in the Master Collaboration Agreement.

1.1 "**α-β T-Cell**" means a T-Cell that expresses or has ever expressed a T-cell receptor (TCR) dimer consisting of an alpha (α) chain and a beta (β) chain, including any cell derived therefrom. For clarity, "α-β T-Cell" includes any Derived T-Cell that is an α-β T-Cell.

1.2 "**γ-δ T-Cell**" means a T-Cell that expresses a γ-δ T-cell receptor dimer consisting of a gamma (γ) chain and a delta (δ) chain, but excluding any α-β T-Cell. For clarity, "γ-δ T-Cell" includes any Derived T-Cell that is a γ-δ T-Cell.

1.3 "**2014 MGH Agreement**" means that certain Exclusive Patent License Agreement by and between MGH and Editas effective as of August 29, 2014, as amended by First Amendment thereto dated June 29, 2015 and Second Amendment thereto dated November 17, 2016.

1.4 "**2016 MGH Agreement**" means that certain Exclusive Patent License Agreement by and between MGH and Editas effective as of August 2, 2016.

1.5 "**Accounting Standards**" means U.S. generally accepted accounting principles ("**GAAP**") or, to the extent that Juno adopts International Financial Reporting Standards ("**IFRS**"), then "Accounting Standards" shall mean IFRS, in either case, consistently applied.

1.6 "**Acquiring Affiliate**" means, with respect to a given Licensed Program, (a) any Third Party that acquires Editas through a Change of Control following the Effective Date for such Licensed Program; and (b) such Third Party's Affiliates immediately prior to the effective date of such Change of Control.

1.7 "**Additional Allocable Costs**" has the meaning set forth in Section 7.17.3.

1.8 "**Additional Subsequently Obtained Sublicense Terms**" has the meaning set forth in Section 7.17.3.

1.9 "**Affiliate**" means any Person, whether *de jure* or *de facto*, which is directly or indirectly controlling, controlled by or under common control of a Party for so long as such control exists and regardless of whether such Affiliate is or becomes an Affiliate on or after the Effective Date. For the purposes of this Section 1.9, "control" (including, with correlative meanings, the terms "controlled by" and "under common control with") means (a) direct or indirect ownership of fifty percent (50%) or more of the voting securities or other voting interest of any Person (including attribution from related parties), or if not meeting the preceding, the maximum voting right that may be held by the particular Party under the laws of the country where such entity exists; or (b) the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through ownership of voting securities, by contract, as a general partner, as a manager, or otherwise.

1.10 "**Agreement**" has the meaning set forth in the preamble.

1.11 "**Allergan**" means Allergan Pharmaceuticals International Limited.

1.12 "**Allergan Agreement**" means the Strategic Alliance and Option Agreement by and between Editas and Allergan, dated as of March 14, 2017.

1.13 "**Annual Product Net Sales**" means, on a Licensed Product-by-Licensed Product basis, the total Net Sales by Juno, its Affiliates and Sublicensees in the Territory in a particular Calendar Year, calculated in accordance with Accounting Standards consistently applied.

1.14 "**Annual Product U.S. Net Sales**" means, on a Licensed Product-by-Licensed Product basis, the total Net Sales by Juno, its Affiliates and Sublicensees in the United States of such Licensed Product in a particular Calendar Year, calculated in accordance with Accounting Standards consistently applied.

1.15 "**Arbitration Request**" has the meaning set forth in Section 12.2.2.

1.16 "**Base Editing**" means [**].

1.17 "**Base Editing Window**" means a region within [**] nucleotides of a specific polynucleotide sequence bound by the nucleic acid binding protein.

1.18 "**Base Editor**" means [**].

1.19 "**Beam**" means Beam Therapeutics Inc.

1.20 "**Beam Agreement**" means that certain License Agreement by and between Editas and Beam, dated May 9, 2018.

1.21 "**BLA**" means a biologics license application, or similar application, submitted to the applicable Regulatory Authority in a jurisdiction in the Territory.

1.22 "**BlueRock**" means BlueRock Therapeutics LP.

1.23 "**BlueRock Agreement**" means that certain License and Collaboration Agreement by and between Editas and BlueRock, dated April 2, 2019.

1.24 "**BlueRock Field**" means [**].

1.25 "**Biosimilar Application**" means an application filed with the FDA filed pursuant to Section 351(k) of the Public Health Service Act (42 U.S.C. § 262(k)) (or other applicable Law), or, if filed outside of the United States, the foreign equivalent thereof, for marketing authorization of a Biosimilar Product.

1.26 "**Biosimilar Product**" means, with respect to a given Licensed Product in a given country in the Territory, any gene therapy product sold by a Third Party not authorized by or on behalf of Juno, its Affiliates or Sublicensees, that is Directed to the same Target as the Licensed

Product and, on the basis of a prior Regulatory Approval granted to such Licensed Product, (a) is approved by the FDA as a "biosimilar" or "interchangeable" product pursuant to Section 351(k) of the Public Health Service Act (42 U.S.C. § 262(k)) (or other applicable Law), (b) is approved by the EMA as a "similar biological medicinal product" pursuant to EU Directive 2001/83/EC (or other applicable Law), or (c) has received analogous abbreviated Regulatory Approval from the applicable Regulatory Authority in another foreign jurisdiction.

1.27 "**BPCIA**" means Biologics Price Competition and Innovation Act of 2009, as amended.

1.28 "**Broad**" means the Broad Institute, Inc., a non-profit Massachusetts corporation.

1.29 "**Business Day**" means a day that is not a Saturday, Sunday or a day on which banking institutions in Seattle, Washington or Boston, Massachusetts are authorized by Law to remain closed.

1.30 "**Calendar Quarter**" means the period beginning on the Effective Date and ending on December 31, 2019, and thereafter each successive period of three (3) consecutive calendar months ending on the last day of March, June, September, or December, respectively; provided that the final Calendar Quarter shall end on the last day of the Term.

1.31 "**Calendar Year**" means the period beginning on the Effective Date and ending on December 31, 2019, and thereafter each successive period of twelve (12) consecutive calendar months beginning on January 1 and ending on December 31; provided that the final Calendar Year shall end on the last day of the Term.

1.32 "**Cas9-I Agreement**" means the Amended and Restated Cas9-I License Agreement entered into by and among Harvard, Broad and Editas, dated as of December 16, 2016, as amended by that certain first amendment thereto dated March 3, 2017.

1.33 "**Cas9-II Agreement**" means the Cas9-II License Agreement by and between Broad and Editas, dated as of December 16, 2016.

1.34 "**Change of Control"** means, with respect to a Party, (a) a merger or consolidation of such Party with a Third Party which results in the voting securities of such Party outstanding immediately prior thereto ceasing to represent at least fifty percent (50%) of the combined voting power of the surviving entity immediately after such merger or consolidation; (b) a transaction or series of related transactions in which a Third Party, together with its Affiliates, becomes the owner of fifty percent (50%) or more of the combined voting power of such Party's outstanding securities other than through issuances by such Party of securities of such Party in a *bona fide* financing transaction or series of related *bona fide* financing transactions; or (c) the sale or other transfer to a Third Party of all or substantially all of such Party's assets or all or substantially all of such Party's business to which this Agreement relates.

1.35 "**Claims**" has the meaning set forth in Section 13.1.1.

1.36 "**Clinical Trial**" means a human clinical trial, including any Phase 1 Clinical Trial, Phase 2 Clinical Trial or Registration-Enabling Clinical Trial, any study incorporating more than one of these phases, or any human clinical trial commenced after Regulatory Approval.

1.37 "**Co-Exclusive Target**" has the meaning defined in the Master Collaboration Agreement.

1.38 "**Collaboration IP**" has the meaning defined in the Master Collaboration Agreement.

1.39 "**Combination Product**" has the meaning set forth in Section 1.163.

1.40 "**Commercial Milestone Event**" has the meaning set forth in Section 6.3.3(a).

1.41 "**Commercial Milestone Payment**" has the meaning set forth in Section 6.3.3(a).

1.42 "**Commercialization**" means any and all activities directed to the commercialization of a product, including commercial manufacturing (including Manufacturing) and commercial supply of a product, marketing, detailing, promotion, market research, distributing, order processing, handling returns and recalls, booking sales, customer service, administering and commercially selling such product, importing, exporting and transporting such product for commercial sale, and seeking of pricing and reimbursement of a product (if applicable), whether before or after Regulatory Approval has been obtained (including making, having made, using, importing, selling and offering for sale such product), as well all regulatory compliance with respect to the foregoing. For clarity, "Commercialization" does not include any Clinical Trial commenced after Regulatory Approval. When used as a verb, "**Commercialize**" means to engage in Commercialization.

1.43 "**Commercially Reasonable Efforts**" means, with respect to a Party, the efforts required in order to carry out a task in a diligent and sustained manner without undue interruption or delay, which level is at least commensurate with the level of effort that a similarly situated Third Party biopharmaceutical company would devote to a product of similar market potential and having similar commercial and scientific advantages and disadvantages resulting from its own research efforts or to which it has rights, taking into account its safety and efficacy, regulatory status, the competitiveness of the marketplace, its proprietary position, pricing, reimbursement, launching strategy and other market specific factors, and all other relevant factors.

1.44 "**Competing Product**" has the meaning set forth in Section 5.1.1.

1.45 "**Confidential Information**" has the meaning set forth in Section 8.1.

1.46 "**Control**", "**Controls**", "**Controlled**" or "**Controlling**" means, with respect to any IP (including Patent Rights and Know-How) or Confidential Information, the ability of a Party or any of its Affiliates, as applicable, (whether through ownership or license (other than a license granted in this Agreement)) to grant to the other Party the licenses or sublicenses as provided herein, or to otherwise disclose such IP or Confidential Information to the other Party, without violating the terms of any then-existing agreement with any Third Party at the time such Party or

any of its Affiliates, as applicable, would be required hereunder to grant the other Party such license or sublicenses as provided herein or to otherwise disclose such IP or Confidential Information to the other Party.

1.47 "**Cover**", "**Covering**" or "**Covered**" means, with reference to given Patent Rights and Licensed Product in the applicable country of sale in the Territory, that, in the absence of a license granted under, or ownership of, such Patent Right, the making, using, selling, offering for sale or importation of such Licensed Product in such country would infringe a Valid Claim of such Patent Rights in such country without a license thereto (or ownership thereof).

1.48 "**Cpf1 Agreement**" means the Cpf1 License Agreement by and between Broad and Editas, dated as of December 16, 2016.

1.49 "**Cure Period**" has the meaning set forth in Section 11.2.1.

1.50 "**Derivative**" means, with respect to a Target or antigen, all fragments, complexes, variants or post-translationally modified and mutated forms of such Target or antigen, as applicable.

1.51 "**Derived T-Cell**" means a T-Cell that is derived from a PSC cell or any other precursor cell.

1.52 "**Designee**" has the meaning set forth in Section 3.3.1.

1.53 "**Development**" means pre-clinical and clinical development activities, and other development activities, including: test method development and stability testing, toxicology, formulation, process development, manufacturing scale-up, development-stage manufacturing (including Manufacturing), quality assurance/quality control procedure development and performance with respect to clinical materials, statistical analysis and report writing, Clinical Trials, the preparation and submission of INDs and MAAs, regulatory affairs with respect to the foregoing and all other activities necessary or useful or otherwise requested or required by a Regulatory Authority or as a condition or in support of obtaining or maintaining a Regulatory Approval. When used as a verb, "**Develop**" means to engage in Development.

1.54 "**Development Candidate**" has the meaning set forth in Section 1.164.

1.55 "**Development Milestone Event**" has the meaning set forth in Section 6.3.1(a).

1.56 "**Development Milestone Payment**" has the meaning set forth in Section 6.3.1(a).

1.57 "**Directed to**" means, with respect to a given Target, that an RNP Complex (or any component thereof) recognizes or modulates such Target.

1.58 "**Dispute**" has the meaning set forth in Section 12.2.1.

1.59 "**Distributor**" means a Third Party *bona fide* wholesaler or distributor engaged by Juno (or its Affiliate or Sublicensee) to distribute and sell a Licensed Product, but not to Research or Develop such Licensed Product in any way.

1.60 "**Documented Lineage**" means with respect to an RNP Complex, that such an RNP Complex was derived from an Editas-Provided RNP Complex as evidenced by Juno's or its Affiliate's written documentation of such derivation.

1.61 "**Dollars**" or "**$**" means the legal tender of the United States.

1.62 "**Editas**" has the meaning set forth in the preamble.

1.63 "**Editas-BlueRock Joint Patents**" has the meaning set forth in Section 7.10.2(c).

1.64 "**Editas Indemnitees**" has the meaning set forth in Section 10.1.

1.65 "**Editas Licensed Background IP**" means any and all Editas Licensed Background Know-How and Editas Licensed Background Patents, but in all cases, expressly excluding any Collaboration IP.

1.66 "**Editas Licensed Background Know-How**" means any and all Know-How that is Controlled by Editas or any of its Affiliates (other than through the grant of a license from Juno or any of its Affiliates to Editas or any of its Affiliates) on or after the Execution Date or at any time thereafter until the end of the Term, and that is (a) necessary or useful to research (including Research), develop (including Develop), make (including Manufacture), have made (including have Manufactured), use, offer for sale, sell, import, Commercialize or otherwise exploit any Licensed RNP Complex or Licensed Product, or is otherwise related to any Licensed Program Target; or (b) otherwise used by or on behalf of Editas or any of its Affiliates in the performance of the Research Program with respect to any Licensed Program but, in all cases ((a) and (b)), expressly excluding Joint Know-How, Joint Collaboration Know-How, Editas Licensed Collaboration Know-How and Excluded Know-How; provided, however, that, on a Licensed Program-by-Licensed Program basis, (i) with respect to any Know-How that is Pre Opt-In Subsequently Obtained Licensed IP for such Licensed Program, such Know-How shall be included within the definition of Editas Licensed Background Know-How only if such Know-How is included in the applicable Licensed Program Addendum or (ii) with respect to any Know-How that is Subsequently Obtained Licensed IP, such Know-How shall be included within the definition of Editas Licensed Background Know-How only if the provisions of Section 7.17 are met.

1.67 "**Editas Licensed Background Patents**" means any and all Patent Rights that are Controlled by Editas or any of its Affiliates (other than through the grant of a license from Juno or any of its Affiliates to Editas or any of its Affiliates) on or after the Execution Date or at any time thereunder until the end of the Term, and that claim or cover (a) any Licensed RNP Complex, Licensed Product or Licensed Program Target, or the Research, Development, Manufacturing, Commercialization or other exploitation of any of the foregoing; or (b) any Editas Licensed Background Know-How, including (i) the Patent Rights identified as "Editas Licensed Background Patents" in the Licensed Program Addendum for the Initial Licensed Program attached hereto as Exhibit A-1, and (ii) any Patent Rights identified as "Editas Licensed Background Patents" in any other Licensed Program Addendum, but, in all cases, expressly excluding Joint Patents, Joint Collaboration Patents, Editas Licensed Collaboration Patents and Excluded Patents; provided, however, that, on a Licensed Program-by-Licensed Program basis, (A) with respect to any Patent Rights that are Pre Opt-In Subsequently Obtained Licensed IP for

such Licensed Program, such Patent Rights shall be included within the definition of Editas Licensed Background Patents only if such Patent Rights are included in the applicable Licensed Program Addendum or (B) with respect to any Patent Rights that are Subsequently Obtained Licensed IP, such Patent Rights shall be included within the definition of Editas Licensed Background Patents only if the provisions of Section 7.17 are met.

1.68 "**Editas Licensed Collaboration IP**" means any and all Editas Licensed Collaboration Know-How and Editas Licensed Collaboration Patents.

1.69 "**Editas Licensed Collaboration Know-How**" means any and all Editas Collaboration Know-How that is necessary or useful to research (including Research), develop (including Develop), make (including Manufacture), have made (including have Manufactured), use, offer for sale, sell, import, Commercialize or otherwise exploit any Licensed RNP Complex or Licensed Product, or is otherwise related to any Licensed Program Target.

1.70 "**Editas Licensed Collaboration Patents**" means any and all Editas Collaboration Patents that claim or cover (a) any Licensed RNP Complex, Licensed Product or Licensed Program Target, or the Research, Development, Manufacturing, Commercialization or other exploitation of any of the foregoing; or (b) any Editas Licensed Collaboration Know-How, including (i) the Patent Rights identified as "Editas Licensed Collaboration Patents" in the Licensed Program Addendum for the Initial Licensed Program attached hereto as Exhibit A-1; and (ii) any Patent Rights identified as "Editas Licensed Collaboration Patents" in any other Licensed Program Addendum.

1.71 "**Editas Licensed IP**" means the Editas Licensed Background Patents, the Editas Licensed Background Know-How, Editas Licensed Collaboration Patents and Editas Licensed Collaboration Know-How, as well as Editas' (and any of its Affiliates') right, title and interest in and to the Joint IP and any Joint Collaboration IP.

1.72 "**Editas Materials**" means any and all Materials, including RNP Complexes (including any components or sequences thereof), compositions of matter, cells and cell lines, assays, imaging agents used to assess DNA modification, reagents, DNA sequences, internal controls, and any other physical, biological or chemical material, in each case, that are (a) Controlled by Editas or any of its Affiliates and related to, or necessary or reasonably useful to Research, Develop, Manufacture, Commercialize or otherwise exploit, any Licensed Program Target, Licensed RNP Complex or Licensed Product; and (b) (i) created, conceived, discovered, developed, generated, invented, made or reduced to practice, by or on behalf of Editas (or any of its Affiliates), solely or jointly with any Third Party, in the performance of a Licensed Program or any other obligations under the Master Collaboration Agreement or this Agreement or (ii) otherwise included or utilized by or on behalf of Editas or any of its Affiliates in the performance of a Licensed Program or any other obligations under the Master Collaboration Agreement or this Agreement.

1.73 "**Editas-Provided RNP Complexes**" has the meaning set forth in Section 1.148.

1.74 "**Effective Date**" means, (a) on a Licensed Program-by-Licensed Program basis (other than with respect to the Initial Licensed Program), the date on which the applicable Licensed Program Addendum is fully executed by the Parties, in each case, subject to Section 3.5 of the

Master Collaboration Agreement; and (b) with respect to the Initial Licensed Program, the Execution Date.

1.75 "**Electronic Delivery**" has the meaning set forth in Section 12.15.

1.76 "**EMA**" means the European Medicines Agency of the European Union, or the successor thereto.

1.77 "**EU**" means all countries that are officially recognized as member states of the European Union at any particular time, including the United Kingdom regardless of whether actually within the European Union.

1.78 "**Excluded Base Editing Non-Cancer Field**" has the meaning set forth in Section 1.142.

1.79 "**Excluded Know-How**" means, on a Licensed Program-by-Licensed Program basis, any and all Know-How that is Controlled by an Acquiring Affiliate, which Know-How (a) was Controlled by such Acquiring Affiliate immediately prior to the effective date of such Change of Control; or (b) first becomes Controlled by such Acquiring Affiliate on or after the effective date of such Change of Control (but is not Controlled by Editas or any of its Affiliates (excluding for purposes of this provision, any Acquiring Affiliate)) and was developed, invented, obtained or otherwise Controlled by such Acquiring Affiliate independently of this Agreement and without the direct or indirect use of any Editas Licensed IP, Collaboration IP or Confidential Information of Juno or any of its Affiliates; provided, however, that, in all cases, Excluded Know-How shall not include any Know-How that is used by or on behalf of Editas or any of its Affiliates (including any Acquiring Affiliate) in the performance of any Licensed Program or any other obligations under this Agreement or the Master Collaboration Agreement.

1.80 "**Excluded Ocular Field**" has the meaning set forth in Section 1.142.

1.81 "**Excluded Patents**" means, on a Licensed Program-by-Licensed Program basis, any and all Patent Rights Controlled by an Acquiring Affiliate, which Patent Rights (a) were Controlled by such Acquiring Affiliate immediately prior to the effective date of such Change of Control; or (b) first became Controlled by such Acquiring Affiliate on or after the effective date of such Change of Control (but are not Controlled by Editas or any of its Affiliates (excluding for purposes of this provision, any Acquiring Affiliate)) and solely claim Excluded Know-How; provided, however, that, in all cases, Excluded Patents shall not include any Patent Rights that (i) comprise any substitutions, divisionals, continuations, continuations-in-part, reissues, renewals, registrations, confirmations, re-examinations, extensions, supplementary protection certificates and the like of any Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents that were Controlled by Editas (or any of its Affiliates) prior to such Change of Control, as well as any other Patent Rights that claim priority to any of any such Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents, or (ii) are practiced by or on behalf of Editas or any of its Affiliates (including any Acquiring Affiliate) in the performance of the applicable Licensed Program or any other obligations under this Agreement or the Master Collaboration Agreement.

1.82 "**Exclusive Field**" means the use of Genome Editing Technology in connection with the Research, Development, Manufacture, Commercialization or other exploitation of (a) α-β T-Cells or (b) Other Derived T-Cells.

1.83 "**Execution Date**" has the meaning set forth in the preamble.

1.84 "**Executive Officers**" means (a) with respect to Editas, Chief Executive Officer; and (b) with respect to Juno, the [**].

1.85 "**Existing Acquirer Program**" has the meaning set forth in Section 5.1.2.

1.86 "**Existing Program Agreements**" means, with respect to a Licensed Program, any agreement between Editas (or any of its Affiliates, as applicable) and any Third Party necessary or reasonably useful for the Research, Development or Manufacture of any Licensed RNP Complex for such Licensed Program, in effect as of the Effective Date. The Existing Program Agreements include those set forth on Schedule 1.86. Existing Program Agreements shall exclude any In-License Agreements in effect as of the applicable Effective Date.

1.87 "**Existing Regulatory Materials**" has the meaning set forth in Section 3.2.1.

1.88 "**FDA**" means the Food and Drug Administration of the United States, or the successor thereto.

1.89 "**First Amended and Restated Agreement**" has the meaning set forth in the recitals.

1.90 "**First Commercial Sale**" means, on a Licensed Product-by-Licensed Product and country-by-country basis, the first sale of such Licensed Product in such country by Juno or any of its Affiliates or Sublicensees for use or consumption by an end user for which any of Juno or any of its Affiliates or Sublicensees has invoiced sales of such Licensed Product in such country; provided, however, that the following shall not constitute a First Commercial Sale: (a) any sale to an Affiliate or Sublicensee; or (b) any use of such Licensed Product in Clinical Trials or non-clinical Development activities with respect to such Licensed Product by or on behalf of a Party (or its Affiliate or Sublicensee), or disposal or transfer of such Licensed Product for a *bona fide* charitable purpose, compassionate use or samples, in each case for which such Party does not receive any financial or in-kind compensation.

1.91 "**Force Majeure**" has the meaning set forth in Section 12.5.

1.92 "**Foundational In-License**" means the Cas9-I Agreement, Cas9-II Agreement, Cpf1 Agreement, 2014 MGH Agreement or 2016 MGH Agreement, and "**Foundational In-Licenses**" means the Cas9-I Agreement, Cas9-II Agreement, Cpf1 Agreement, 2014 MGH Agreement and 2016 MGH Agreement.

1.93 "**GAAP**" has the meaning set forth in Section 1.5.

1.94 "**GenEdit Agreement**" means the Collaboration and License Agreement by and between GenEdit, Inc. and Editas, dated as of October 8, 2019.

1.95 "**Genome Editing Technology**" means any and all technology used to edit or modify the genome of a cell.

1.96 "**Good Clinical Practices**" or "**GCP**" means the applicable then-current ethical and scientific quality standards for designing, conducting, recording, and reporting trials that involve the participation of human subjects as are required by applicable Regulatory Authorities or applicable Law in the relevant jurisdiction, including in the United States, Good Clinical Practices established through FDA guidances, and, outside the United States, Guidelines for Good Clinical Practice – ICH Harmonized Tripartite Guideline (ICH E6).

1.97 "**Good Laboratory Practices**" or "**GLP**" means the applicable then-current good laboratory practice standards as are required by applicable Regulatory Authorities or applicable Law in the relevant jurisdiction, including in the United States, those promulgated or endorsed by the FDA in U.S. 21 C.F.R. Part 58, or the equivalent thereof as promulgated or endorsed by the applicable Regulatory Authorities outside of the United States.

1.98 "**Good Manufacturing Practices**" or "**GMP**" means the applicable then-current standards relating to Manufacturing practices for fine chemicals, intermediates, bulk products or finished products, biologics, gene or cell therapy, as are required by applicable Regulatory Authorities or applicable Law in the relevant jurisdiction, including, as applicable, (a) all applicable requirements detailed in the FDA's current Good Manufacturing Practices regulations, U.S. 21 C.F.R. Parts 210 and 211; (b) all applicable requirements detailed in the EMA's "The Rules Governing Medicinal Products in the European Community, Volume IV, Good Manufacturing Practice for Medicinal Products"; and (c) all equivalent applicable Laws promulgated by any Governmental Authority having jurisdiction over the manufacture of the applicable compound or product, as applicable.

1.99 "**Governmental Authority**" means any (a) federal, state, local, municipal, foreign or other government; (b) governmental or quasi-governmental authority of any nature (including any governmental division, subdivision, department, agency, bureau, branch, office, commission, council, board, instrumentality, officer, official, representative, organization, unit, body or entity and any court or other tribunal); (c) multinational governmental organization or body; or (d) entity or body exercising, or entitled to exercise, any executive, legislative, judicial, administrative, regulatory, police, military or taxing authority or power of any nature.

1.100 "**gRNA**" means an oligonucleotide containing RNA, DNA, or other DNA/RNA modifications that can form a complex with an RGEN and mediate the specific targeting of that complex to a DNA sequence of interest.

1.101 "**Harvard**" means the President and Fellows of Harvard College, an educational and charitable corporation existing under the laws and the constitution of the Commonwealth of Massachusetts.

1.102 "**Harvard-Broad License**" means any of the Cas9-I Agreement, the Cas9-II Agreement or the Cpf1 Agreement and "**Harvard-Broad Licenses**" means the Cas9-I Agreement, the Cas9-II Agreement and the Cpf1 Agreement.

1.103 "**HHMI**" means the Howard Hughes Medical Institute.

1.104 "**HHMI Indemnitees**" means HHMI, and its trustees, officers, employees, and agents.

1.105 "**HHMI Names**" has the meaning set forth in Section 13.2.

1.106 "**HIPAA**" has the meaning set forth in Section 1.141.

1.107 "**[**]**" means that [**].

1.108 "**IFRS**" has the meaning set forth in Section 1.5.

1.109 "**Increased Tax**" has the meaning set forth in Section 6.4.4(d).

1.110 "**IND**" means an investigational new drug application (including any amendment or supplement thereto) submitted to the FDA pursuant to U.S. 21 C.F.R. Part 312, including any amendments thereto. References herein to IND shall include, to the extent applicable, any comparable filing(s) outside the U.S. for the investigation of any product in any other country or group of countries (such as a Clinical Trial Application in the EU).

1.111 "**IND Acceptance**" means, with respect to a given Licensed Product, following the filing of the first IND for such Licensed Product with a Regulatory Authority in the first Major Market, that such Licensed Product is permitted to be administered to a subject in a Clinical Trial pursuant to such IND in such Major Market in accordance with applicable Laws.

1.112 "**IND Diligence Date**" has the meaning set forth in Section 3.1.2(b).

1.113 "**IND Diligence Threshold**" has the meaning set forth in Section 3.1.2(b).

1.114 "**In-License Agreement**" means any of (a) the Foundational In-Licenses; (b) the [**] Agreement; (c) the GenEdit Agreement; (d) any agreement pursuant to which Editas or any of its Affiliates obtains a license under any Pre Opt-In Subsequently Obtained Licensed IP identified in a Licensed Program Addendum; or (e) any other agreement pursuant to which Editas to any of its Affiliates obtains a license under any Subsequently Obtained Licensed IP and such Subsequently Obtained Licensed IP is elected by Juno and included pursuant to Section 7.17.

1.115 "**In-License Counterparty**" means the Third Party(ies) that granted a license(s) under the terms of an In-License Agreement.

1.116 "**Indemnitee**" has the meaning set forth in Section 10.3.

1.117 "**Indemnitor**" has the meaning set forth in Section 10.3.

1.118 "**Indication**" means an entirely separate and distinct disease or medical condition in humans (including having a separate histology) for which a product has received a separate and distinct marketing authorization approval with an approved label claim to treat such disease or condition, as applicable. For clarity, (a) moving from one line of therapy to another within an

Indication shall not be considered to be a new Indication, a non-limiting example of which is moving from second line therapy to first line therapy; (b) a single Indication would include the primary disease and all variants or sub-divisions or sub-classifications within such primary disease, and regardless of prophylactic or therapeutic use, pediatric or adult use and irrespective of different formulation(s), dosage forms, dosage strengths, or delivery system(s) used; and (c) obtaining a label expansion for use of the product to treat the same primary disease in combination or co-administration with another product in an already approved Indication shall not be considered to be a new Indication.

1.119 "**Initial Licensed Program**" means the Program identified in the Licensed Program Addendum attached hereto as Exhibit A-1.

1.120 "**Initiation**" means, with respect to a given Clinical Trial, the administration of the first dose of Licensed Product to the third properly enrolled subject in such Clinical Trial in accordance with the protocol for such Clinical Trial.

1.121 "**Institution Indemnitees**" means each Institution, Rockefeller, Iowa, UTokyo, Wageningen and MIT and each of their current and former directors, governing board members, trustees, officers, faculty, affiliated investigators, medical and professional staff, employees, students, and agents and their respective successors, heirs and assigns.

1.122 "**Institution Names**" has the meaning set forth in Section 13.2.

1.123 "**Institutions**" means Harvard and Broad.

1.124 "**Iowa**" means the University of Iowa Research Foundation.

1.125 "**IP**" means intellectual property of any and all types, including Patent Rights, Know-How and copyrights, but excluding trademarks and trademark applications.

1.126 "**iPSC**" has the meaning set forth in Section 1.182.

1.127 "**Joint Collaboration IP**" has the meaning defined in the Master Collaboration Agreement.

1.128 "**Joint Collaboration Know-How**" has the meaning defined in the Master Collaboration Agreement.

1.129 "**Joint Collaboration Patent**" has the meaning defined in the Master Collaboration Agreement.

1.130 "**Joint Counsel**" has the meaning set forth in Section 7.10.3(a).

1.131 "**Joint IP**" means, collectively, any and all Joint Know-How and Joint Patents.

1.132 "**Joint Know-How**" means any and all Know-How that is created, conceived, discovered, developed, generated, invented, made or reduced to practice jointly by or on behalf of Editas or any of its Affiliates, on the one hand, and Juno or any of its Affiliates, on the other hand,

including with any Third Party, pursuant to the conduct of activities under this Agreement at any time during the Term.

1.133 "**Joint Patents**" means any and all Patent Rights that claim any Joint Know-How.

1.134 "**Juno**" has the meaning set forth in the preamble.

1.135 "**Juno Indemnitees**" has the meaning set forth in Section 10.2.

1.136 "**Juno Indemnitor**" has the meaning set forth in Section 13.1.1.

1.137 "**Juno Material Modification**" means, with respect to a given Licensed Product, any single modification or combination of modifications that (a) adds, removes or substitutes a chimeric antigen receptor or engineered T-cell receptor, whereby the resulting Licensed Product targets a different antigen (or set of antigens); or (b) adds, removes or substitutes a Licensed Program Target, whereby the resulting Licensed Product is Directed to a different Licensed Program Target (or set of Licensed Program Targets). For clarity, Juno Material Modifications shall exclude any other modifications to the Licensed Product not covered by clause (a) or (b) above, including (i) changes to the manufacturing process with respect to a Licensed Product, (ii) the addition, removal or substitution of a chimeric antigen receptor or engineered T-cell receptor such that the Licensed Product targets either a Derivative or alternative epitope of the applicable antigen (which, for clarity, shall be considered the same antigen for purposes of this definition) and (iii) the addition, removal or substitution of a Target (or set of Target(s)) that are not Licensed Program Target(s) (collectively, "**Juno Non-Material Modifications**").

1.138 "**Juno Non-Material Modifications**" has the meaning set forth in Section 1.137.

1.139 "**Juno Third Party Payments**" has the meaning set forth in Section 6.2.4.

1.140 "**Know-How**" means any and all proprietary (a) information, techniques, technology, practices, trade secrets, inventions, methods (including methods of use or administration or dosing), knowledge, data, results and software and algorithms, including pharmacological, toxicological and clinical test data and results, compositions of matter, chemical structures and formulations, sequences, processes, formulae, techniques, research data, reports, standard operating procedures, batch records, manufacturing data, analytical and quality control data, analytical methods (including applicable reference standards), assays and research tools, in each case, whether patentable or not; and (b) tangible manifestations thereof, including any and all of the foregoing relating to Materials.

1.141 "**Law**" means any and all applicable laws, statutes, rules, regulations, orders, judgments or ordinances having the effect of law of any national, multinational, federal, state, provincial, county, city or other political subdivision, including, to the extent applicable, GCP, GLP and GMP, as well as all applicable data protection and privacy laws, rules and regulations, including, to the extent applicable, the United States Department of Health and Human Services privacy rules under the Health Insurance Portability and Accountability Act of 1996 ("**HIPAA**") and the Health Information Technology for Economic and Clinical Health Act and the EU General

Data Protection Regulation (2016/679), in each case, together with any then-current modification, amendment and re-enactment thereof, and any legislative provision substituted therefor.

1.142 "**Licensed Field**" means the use of Genome Editing Technology in connection with the Research, Development, Manufacture, Commercialization or other exploitation of (a) α-β T-Cells or (b) Other Derived T-Cells; provided, however, that (i) to the extent that, due to the Allergan Agreement, Editas does not have the right to grant rights hereunder to Juno to use Genome Editing Technology on α-β T-Cell or Other Derived T-Cell products specifically intended for the treatment, control, mitigation, prevention or cure of any disease (excluding cancer) of the eye or its adnexa (the "**Excluded Ocular Field**"), then the Licensed Field shall exclude the Excluded Ocular Field and (ii) to the extent that, due to the Beam Agreement, Editas does not have the right to grant rights hereunder to Juno to use Base Editing technology on α-β T-Cell or Other Derived T-Cell products specifically intended for any field outside of cancer (the "**Excluded Base Editing Non-Cancer Field**"), then the Licensed Field shall exclude the Excluded Base Editing Non-Cancer Field.

1.143 "**Licensed Product**" means a product (including a Combination Product) that constitutes, incorporates, comprises or contains (a) an α-β T-Cell or (b) an Other Derived T-Cell, in each case, that was modified using a Licensed RNP Complex (alone or as part of a Licensed RNP Complex Group), and potentially including Juno Material Modifications (or set of Juno Material Modifications) or Juno Non-Material Modifications (or set of Juno Non-Material Modifications) thereto. For clarity, if two (2) (or more) products that constitute, incorporate, comprise or contain an α-β T-Cell or Other Derived T-Cell, as applicable, that was modified using the same Licensed RNP Complex (alone or as part of a Licensed RNP Complex Group), such products shall be considered separate Licensed Products for purposes of this Agreement if separate INDs would be required to be filed with the FDA in order to conduct a separate Clinical Trial of each such Licensed Product.

1.144 "**Licensed Program**" means (a) the Initial Licensed Program; and (b) any Program identified as a "Licensed Program" in a Licensed Program Addendum, as applicable.

1.145 "**Licensed Program Addendum**" has the meaning set forth in Section 2.1.

1.146 "**Licensed Program Confidential Information**" has the meaning set forth in Section 8.10.

1.147 "**Licensed Program Target**" means (a) the Licensed Program Target identified in the Licensed Program Addendum for the Initial Licensed Program attached hereto as Exhibit A-1; (b) any Collaboration Target identified as a "Licensed Program Target" in a Licensed Program Addendum; and (c) in each case of the foregoing clauses (a) or (b), any Derivative forms thereof.

1.148 "**Licensed RNP Complex**" means (a) the Lead Candidate and Related Collaboration RNP Complex(es) (as defined in the Master Collaboration Agreement) identified as "Licensed RNP Complexes" in the Licensed Program Addendum for the Initial Licensed Program attached hereto as Exhibit A-1; (b) any Lead Candidate and Related Collaboration RNP Complex(es) (as defined in the Master Collaboration Agreement) identified as "Licensed RNP Complexes" in a Licensed Program Addendum; (c) any other Collaboration RNP Complex from

the Research Program under the Master Collaboration Agreement that (i) incorporates or contains the same RGEN as any Lead Candidate under clause (a) or (b) above and (ii) is Directed to the same Licensed Program Target as such Lead Candidate (the RNP Complexes in clauses (a), (b) or (c), the "**Editas-Provided RNP Complexes**"); and (d) any other RNP Complex that (i) is Directed to a Licensed Program Target, (ii) is a variant or improvement of an Editas-Provided RNP Complex made by or on behalf of Juno or any of its Affiliates during the Term in the course of its activities performed under this Agreement and has Documented Lineage to such Editas-Provided RNP Complex, and (iii) is covered by any Editas Licensed Background Patent or Editas Licensed Collaboration Patent, or is otherwise made by or on behalf of Juno or any of its Affiliates during the Term in the course of its activities performed under this Agreement directly through the use of the Editas Licensed Background Know-How or Editas Licensed Collaboration Know-How (as such use is documented in Juno's or its Affiliate's written records).

1.149 "**Licensed RNP Complex Group**" means, with respect to a given α-β T-Cell or Other Derived T-Cell, the combination of two (2) or more individual Licensed RNP Complexes utilized to modify such α-β T-Cell or Other Derived T-Cell, as applicable.

1.150 "**Major European Country**" means any of [**].

1.151 "**Major Markets**" means the [**].

1.152 "**Manufacture**" or "**Manufacturing**" means any and all activities related to the manufacturing of a product or any component or ingredient thereof, including test method development and stability testing, formulation, process development, manufacturing scale-up whether before or after Regulatory Approval, manufacturing any product in bulk or finished form for Development or Commercialization (as applicable), including filling and finishing, packaging, labeling, shipping and holding, in-process and finished product testing, release of a product or any component or ingredient thereof, quality assurance and quality control activities related to manufacturing and release of a product, and regulatory activities related to any of the foregoing. When used as a verb, "**Manufacture**" means to engage in Manufacturing.

1.153 "**Marketing Authorization Application**" or "**MAA**" means a marketing authorization application, BLA or similar application, as applicable, and all amendments and supplements thereto, submitted to the FDA, or any equivalent filing in a country or regulatory jurisdiction other than the U.S. with the applicable Regulatory Authority, to obtain marketing approval for a product, in a country or in a group of countries.

1.154 "**Master Collaboration Agreement**" has the meaning set forth in the recitals.

1.155 "**Materials**" means any and all tangible chemical or biological research materials that are used by or on behalf of a Party in, or provided or otherwise made available by one Party or any of its Affiliates to the other Party or any of its Affiliates for use in, the performance of the Research Program or any of its other obligations under the Master Collaboration Agreement, or exercising rights under the licenses granted hereunder, including any Editas Materials.

1.156 "**MCKD1**" has the meaning set forth in Section 7.1.

1.157 "**MGH**" means The General Hospital Corporation, d/b/a Massachusetts General Hospital.

1.158 "**MGH Indemnitees**" means MGH and its affiliates and their respective trustees, directors, officers, medical and professional staff, employees, and agents and their respective successors, heirs and assigns.

1.159 "**MGH License**" means the 2014 MGH Agreement or the 2016 MGH Agreement and "**MGH Licenses**" means the 2014 MGH Agreement and the 2016 MGH Agreement.

1.160 "**MHLW**" means the Ministry of Health, Labour and Welfare of Japan, or the Pharmaceuticals and Medical Devices Agency of Japan (or any successor to either of them, as the case may be).

1.161 "**Milestone Payment**" has the meaning set forth in Section 6.3.3(a).

1.162 "**MIT**" means the Massachusetts Institute of Technology, a not-for-profit Massachusetts Corporation with a principal place of business at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139.

1.163 "**Net Sales**" means, in respect of a given Licensed Product, the total gross amounts invoiced by Juno, its Affiliates and Sublicensees (each, a **"Selling Party"**) to Third Party customers during a net sales measurement period for sales of such Licensed Product, less the following deductions actually incurred, allowed, paid, accrued or specifically allocated in its financial statements and calculated in accordance with Accounting Standards as consistently applied, for:

(a) discounts (including trade, quantity and cash discounts) actually allowed, cash and non-cash coupons, retroactive price reductions, and charge-back payments and rebates granted to any Third Party (including to Governmental Authorities, purchasers, reimbursers, customers, distributors, wholesalers, and group purchasing and managed care organization or entities (and other similar entities and institutions));

(b) credits or allowances, if any, on account of price adjustments, recalls, claims, damaged goods, rejections or returns of items previously sold (including Licensed Product returned in connection with recalls or withdrawals) and amounts written off by reason of uncollectible debt; provided, that if the debt is thereafter paid, the corresponding amount shall be added to the Net Sales of the period during which it is paid;

(c) rebates (or their equivalent), administrative fees, chargebacks and retroactive price adjustments and any other similar allowances granted by a Selling Party (including Government Authorities, purchasers, reimbursers, customers, distributors, wholesalers, and group purchasing and managed care organizations and entities (and other equivalent entities and institutions)) which effectively reduce the selling price or gross sales of such Licensed Product, as well as costs of distribution and wholesale;

(d) insurance, customs charges, freight, postage, shipping, handling, and other transportation costs incurred by a Selling Party in shipping Licensed Product to a Third Party;

(e) import taxes, export taxes, exercise taxes (including annual fees due under Section 9008 of the United States Patient Protection and Affordable Care Act of 2010 (Pub. L. No.111-48) and other comparable Laws), sales tax, value-added taxes, consumption taxes, duties or other taxes levied on, absorbed, determined and/or imposed with respect to such sales (excluding income or net profit taxes or franchise taxes of any kind); and

(f) reasonable discounts due to factoring of receivables that are incurred consistent with its other products of like character in a given country.

There shall be no double counting in determining the foregoing deductions from gross amounts invoiced to calculate Net Sales hereunder. The calculations set forth in this definition shall be determined in accordance with the Accounting Standards, consistently applied.

If non-monetary consideration is received by Juno for any Licensed Product in the relevant country, Net Sales will be calculated based on the average price charged for such Licensed Product during the preceding royalty period, or in the absence of such sales, the fair market value of such Licensed Product as determined by the Parties in good faith. Notwithstanding the foregoing, Net Sales shall not be imputed to transfers of Licensed Products for use in Clinical Trials, non-clinical Development activities or other Development activities with respect to Licensed Products by or on behalf of the Selling Parties, for *bona fide* charitable purposes or for compassionate use or for Licensed Product samples, if no monetary consideration is received for such transfers.

Net Sales shall be determined on, and only on, the first sale by Juno or any of its Affiliates or Sublicensees to a non-Sublicensee Third Party.

If any Licensed Product is, or is sold as part of, a Combination Product (as defined below), Net Sales will be the product of (1) Net Sales of the Combination Product calculated as above (i.e., calculated as for a non-Combination Product), and (2) the fraction (A/(A+B)), where:

"A" is the gross invoice price in such country of such Licensed Product as the sole therapeutically active ingredient; and

"B" is the gross invoice price in such country of the other therapeutically active ingredient(s) contained in the Combination Product.

If "A" or "B" cannot be determined by reference to non-Combination Product sales as described above, then Net Sales will be calculated as above, but the gross invoice price in the above equation shall be determined by mutual agreement reached in good faith by the Parties prior to the end of the accounting period in question based on an equitable method of determining the same that takes into account, in the applicable country, the relative fair market value (including taking into account variations in dosage units, if applicable) of such Licensed Product, on the one

hand, and each other therapeutically active ingredient, as applicable, on the other hand, in the Combination Product.

For purposes of this definition, "**Combination Product**" means any product that (1) contains a Licensed Product as well as one or more other therapeutically active ingredients, either as a fixed dose product, co-formulated product or co-packaged product, and sold for a single price, and (2) is Developed or Commercialized, alone or together with a Third Party, by Juno or any of its Affiliates or Sublicensees.

1.164 "**Nomination of a Development Candidate**" means, on a Licensed Product-by-Licensed Product basis, the date on which Juno's Candidate Development Committee (or any equivalent or successor body thereof) has, in accordance with Juno's standard development candidate selection criteria and processes, selected the Licensed Product that will likely be the subject of an IND filed with a Regulatory Authority (such Licensed Product, a "**Development Candidate**").

1.165 "**Non-Prosecuting Party**" has the meaning set forth in Section 7.10.4.

1.166 "**Opt-In Exercise Fee**" has the meaning set forth in Section 6.1.

1.167 "**Other Derived T-Cell**" means any Derived T-Cell, but excluding any (a) α-β T-Cell or (b) γ-δ T-Cell.

1.168 "**Party**" or "**Parties**" has the meaning set forth in the preamble.

1.169 "**Patent Challenge**" means, with respect to (a) a given Editas Licensed Background Patent (other than any such Patent Rights Controlled by Editas under the Harvard-Broad Licenses) or Editas Licensed Collaboration Patent, a challenge to the validity, patentability or enforceability of such Editas Licensed Background Patent or Editas Licensed Collaboration Patent, in a legal action or an administrative proceeding initiated by or on behalf of Juno (or any of its Affiliates or Sublicensees), but excluding any such challenge in defense of any claims raised by or on behalf of Editas (or any of its Affiliates, sublicensees or In-License Counterparty) against Juno (or any of its Affiliates or Sublicensees), or otherwise in connection with an assertion of a cross-claim or a counter-claim; and (b) any Patent Rights Controlled by Editas under the Harvard-Broad Licenses, to the extent applicable to a given Licensed Program, the patent challenge terms of Section 7.5 applicable to such Harvard-Broad License shall apply.

1.170 "**Patent Liaison**" has the meaning set forth in Section 7.9.

1.171 "**Patent Rights**" means (a) all patents and patent applications in any country or supranational jurisdiction worldwide; (b) any substitutions, divisionals, continuations, continuations-in-part, reissues, renewals, registrations, confirmations, re-examinations, extensions, supplementary protection certificates and the like of any such patents or patent applications; and (c) foreign counterparts of any of the foregoing.

1.172 "**Payee Party**" has the meaning set forth in Section 6.4.4(b).

1.173 "**Paying Party**" has the meaning set forth in Section 6.4.4(b).

1.174 "**Person**" means an individual, sole proprietorship, partnership, limited partnership, limited liability partnership, corporation, limited liability company, business trust, joint stock company, trust, unincorporated association, joint venture or other similar entity or organization, including a government or political subdivision, department or agency of a government.

1.175 "**Phase 1 Clinical Trial**" means (a) both a Phase 1a Clinical Trial and a Phase 1b Clinical Trial; or (b) a single Clinical Trial that contains all of the elements of both a Phase 1a Clinical Trial and a Phase 1b Clinical Trial.

1.176 "**Phase 1a Clinical Trial**" means a human Clinical Trial of a product that would satisfy the requirements of U.S. 21 C.F.R. Part 312.21(a), as amended, the principal purpose of which is a preliminary determination of safety, pharmacokinetics and pharmacodynamic parameters in healthy individuals or patients, or a similar Clinical Trial prescribed by the Regulatory Authorities in a country other than the United States.

1.177 "**Phase 1b Clinical Trial**" means a human Clinical Trial of a product, the principal purpose of which is to further evaluate safety and pharmacokinetics (including exploration of trends of a biomarker based or clinical endpoint based efficacy relationship to dose which are not designed to be statistically significant) of the product, whether or not in combination with concomitant treatment, after an initial Phase 1a Clinical Trial but prior to commencement of Phase 2 Clinical Trials or Registration-Enabling Clinical Trial, and which provides (itself or together with other available data) sufficient evidence of safety to be included in filings for a Phase 2 Clinical Trial or a Registration-Enabling Clinical Trial with Regulatory Authorities. For clarity, a Phase 1b Clinical Trial may include escalation as well as dedicated expansion cohorts for the defined Indication of interest.

1.178 "**Phase 2 Clinical Trial**" means a human Clinical Trial of a product that would satisfy the requirements of U.S. 21 C.F.R. Part 312.21(b), as amended, and is intended to explore a variety of doses, dose response and duration of effect, and to generate evidence of clinical safety and effectiveness for a particular Indication or Indications in a target patient population, or a similar Clinical Trial prescribed by the relevant Regulatory Authorities in a country other than the United States.

1.179 "**Pre Opt-In Subsequently Obtained Licensed IP**" means, with respect to a Licensed Program, IP included in the Editas Background IP (as defined in the Master Collaboration Agreement) pursuant to the provisions of Section 7.6 of the Master Collaboration Agreement.

1.180 "**Prosecuting Party**" has the meaning set forth in Section 7.10.4.

1.181 "**Prosecution and Maintenance**" or "**Prosecute and Maintain**" means, with respect to Patent Rights, the preparation, filing, prosecution and maintenance of such Patent Rights, as well as re-examinations, reissues and appeals with respect to such Patent Rights, together with the initiation or defense of interferences, oppositions, inter partes review, re-examinations, derivations, post-grant proceedings and other similar proceedings (or other defense proceedings with respect to such Patent Rights, but excluding the defense of challenges to such Patent Rights as a counterclaim in an infringement proceeding) with respect to the particular Patent Rights, and any appeals therefrom. For clarification, "Prosecution and Maintenance" or

"Prosecute and Maintain" shall not include any other enforcement actions taken with respect to Patent Rights.

1.182 "**PSC**" means any pluripotent stem cell, including any induced pluripotent stem cell ("**iPSC**").

1.183 "**Registration-Enabling Clinical Trial**" means a human Clinical Trial of a product that would satisfy the requirements of U.S. 21 C.F.R. Part 312.21(c), as amended, or a similar Clinical Trial prescribed by the EMA in the EU or the MHLW in Japan, and is intended to (a) establish that the product is safe and efficacious for its intended use; (b) define contraindications, warnings, precautions and adverse reactions that are associated with the product in the dosage range to be prescribed; and (c) support Regulatory Approval for such product without the need to conduct additional Clinical Trials.

1.184 "**Regulatory Approval**" means any and all approvals, licenses and authorizations of the applicable Regulatory Authority necessary for the marketing and sale of a product for a particular Indication in a country or region, and including the approvals by the applicable Regulatory Authority of any expansion or modification of the label for such Indication.

1.185 "**Regulatory Authority**" means any national or supranational Governmental Authority, including the FDA in the U.S., the EMA in the EU and the MHLW in Japan, or any health regulatory authority in any country or region that is a counterpart to the foregoing agencies, in each case, that holds responsibility for Research, Development (including the conduct of Clinical Trials), Manufacture or Commercialization of, and the granting of Regulatory Approval for, a product, as applicable, in such country or region.

1.186 "**Regulatory Materials**" means any and all regulatory registrations, applications, authorizations and approvals (including approvals of MAAs, supplements and amendments, pre- and post-approvals, pricing and reimbursement approvals, and labeling approvals), Regulatory Approvals and other submissions made to or with any Regulatory Authority for Research, Development (including the conduct of Clinical Trials), Manufacture or Commercialization of a product in a regulatory jurisdiction, together with all related correspondence to or from any Regulatory Authority and all documents referenced in the complete regulatory chronology for each MAA, including all Drug Master Files (DMFs) (if any), INDs and supplemental biologics license applications (sBLAs) and foreign equivalents of any of the foregoing.

1.187 "**Research**" means any and all research activities (including to characterize, screen, discover, identify, sequence, generate and develop) with respect to a Target (or any Derivative thereof), product or Genome Editing Technology (including any RNP Complex or component or variant form thereof), including derivatization and other modification of a product or any component thereof (including modification, removal or replacement of, or addition to, any such Genome Editing Technology).

1.188 "**RGEN**" means an RNA-guided engineered nuclease (or any variant form thereof) that, when paired with gRNA, is able to interact with specific DNA sequences.

1.189 "**RNP Complex**" means a complex comprising a gRNA and RGEN.

1.190 "**Rockefeller**" means The Rockefeller University.

1.191 "**Royalty Term**" means, on a Licensed Product-by-Licensed Product and country-by-country basis, the period of time commencing on the First Commercial Sale of such Licensed Product in such country of sale and expiring upon the later of (a) the first date on which there is no Valid Claim that Covers the manufacture, use, offer for sale, sale or importation of such Licensed Product in such country, and (b) six (6) years from the date of First Commercial Sale of such Licensed Product in such country. For clarity, in the event that a Valid Claim Covering the manufacture, use, offer for sale, sale or importation of a given Licensed Product in the applicable country issues following First Commercial Sale of such Licensed Product in such country but prior to the expiration of the applicable Royalty Term in accordance with clause (b) above, the Royalty Term with respect to such Licensed Product in such country shall continue for the term of such Valid Claim in accordance with clause (a) above.

1.192 "**SEC**" has the meaning set forth in Section 8.3.1(a).

1.193 "**Section 365(n)**" has the meaning set forth in Section 7.7.

1.194 "**Securities Regulators**" has the meaning set forth in Section 8.5.

1.195 "**Selling Party**" has the meaning set forth in Section 1.163.

1.196 "**Sublicensee**" means, with respect to Juno, a Third Party to whom Juno or any of its Affiliates or sublicensees has granted a sublicense, either directly or (subject to limitation(s) on further sublicensing in the In-License Agreement(s) as expressly set forth in Section 7.5, if applicable) indirectly (through multiple tiers), under the rights or licenses granted to Juno or any of its Affiliates under Section 7.1, but excluding any Third Party acting solely as a Distributor.

1.197 "**Subsequently Obtained Licensed IP**" has the meaning set forth in Section 7.17.2.

1.198 "**Target**" means (a) a gene; and (b) any variant, isoform or polymorphism of any such gene.

1.199 "**T-Cell**" means a cell that expresses or has ever expressed one or more T-cell receptors.

1.200 "**Term**" has the meaning set forth in Section 11.1.1.

1.201 "**Territory**" means worldwide.

1.202 "**Third Party**" means any Person other than Editas and Juno, and their respective Affiliates.

1.203 "**Third Party Claim**" means any and all suits, claims, actions, proceedings or demands brought by a Third Party against a Party (or the Editas Indemnitees or Juno Indemnitees, as applicable).

1.204 "**Third Party Damages**" means any and all losses, costs, claims, damages, judgments, liabilities or expenses of any kind or nature payable to a Third Party by a Party (or the Editas Indemnitees or Juno Indemnitees, as applicable) under a Third Party Claim (including reasonable attorneys' fees and other reasonable out-of-pocket costs of litigation in connection therewith).

1.205 "**Transition Assistance**" has the meaning set forth in Section 3.3.5.

1.206 "**Transition Plan**" has the meaning set forth in Section 3.3.4.

1.207 "**United States**" or "**U.S.**" means the United States of America and all of its territories and possessions.

1.208 "**UTokyo**" means the University of Tokyo.

1.209 "**Valid Claim**" means a claim of an issued patent within the Editas Licensed Collaboration Patents, Editas Licensed Background Patents or Joint Collaboration Patents, as applicable, in the Territory that has not expired, lapsed, been cancelled or abandoned or been dedicated to the public, disclaimed, or held unenforceable, invalid, revoked or cancelled by a court or administrative agency of competent jurisdiction in an order or decision from which no appeal has been or can be taken, including through opposition, reexamination, reissue, disclaimer, inter partes review, post grant procedures or similar proceedings.

1.210 "**Wageningen**" means Wageningen University.

ARTICLE 2
LICENSED PROGRAM ADDENDA

2.1 General. During the Term, following any exercise by Juno of its Opt-In Right with respect to a given Program, in each case subject to and in accordance with the terms of the Master Collaboration Agreement, the Parties shall enter into a Licensed Program Addendum with respect to such Program substantially in the form attached hereto as Schedule 2.1 (each, a "**Licensed Program Addendum**") and, following execution of such Licensed Program Addendum, such Program shall thereafter be deemed a "Licensed Program" and subject to the terms of this Agreement. For clarity, the Initial Licensed Program shall be a Licensed Program as of the Effective Date.

ARTICLE 3
RESEARCH, DEVELOPMENT, MANUFACTURING AND COMMERCIALIZATION

3.1 Development, Manufacturing and Commercialization.

3.1.1 General. From and after the Effective Date, and subject to the terms and conditions of this Agreement, (a) except as expressly set forth in this Agreement, Juno will have the sole right (and shall solely control, at its discretion), itself or with or through any of its Affiliates, Sublicensees or other Third Parties, to Research, Develop, Manufacture, Commercialize and otherwise exploit (i) any Licensed RNP Complex in the Licensed Field in the Territory and (ii) any Licensed Product for any purpose (but excluding the Excluded Ocular Field and the

Excluded Base Editing Non-Cancer Field, in each case, for so long as such field is excluded from the Licensed Field in accordance with Section 1.142) in the Territory; and (b) except as expressly set forth in this Agreement, Editas and its Affiliates shall not have any right to, and shall not, conduct any Research, Development, Manufacture, Commercialization or other exploitation of (i) any Licensed RNP Complex in the Licensed Field in the Territory and (ii) any Licensed Product for any purpose (but excluding (A) the Excluded Ocular Field in accordance with the Allergan Agreement and the Excluded Base Editing Non-Cancer Field in accordance with the Beam Agreement, in each case, for so long as such field is excluded from the Licensed Field in accordance with Section 1.142 and (B) the BlueRock Field in accordance with the BlueRock Agreement, for so long as such field is co-exclusive in accordance with Section 7.1) in the Territory.

3.1.2 Diligence; Progress Reports.

(a) From and after the Effective Date, and subject to the terms and conditions of this Agreement, Juno, itself or with or through any of its Affiliates, Sublicensees or other Third Parties, will use Commercially Reasonable Efforts to (a) Develop and seek Regulatory Approval for at least [**]; and (b) subject to obtaining and maintaining Regulatory Approval (and pricing approval where required by Law) [**], commercially launch at least [**].

(b) Without limiting Section 3.1.2(a), within [**] after the Effective Date of the Licensed Program Addendum pursuant to which Editas licenses to Juno a [**] Licensed Program hereunder (the "**IND Diligence Date**"), Juno shall have filed at least [**] INDs for Licensed Products (the "**IND Diligence Threshold**"). If Juno fails to achieve the IND Diligence Threshold by the IND Diligence Date, then, as Editas' sole and exclusive remedy with respect to Juno's failure to meet the IND Diligence Threshold, Juno shall pay to Editas [**] Dollars ($[**]) for each IND below the IND Diligence Threshold. Such payment shall be a one-time payment and shall be due to Editas within [**] after receipt of an invoice from Editas therefor following the IND Diligence Date. For clarity, (i) if on the IND Diligence Date, Juno has filed [**] INDs for Licensed Products, then Juno shall pay to Editas [**] Dollars ($[**]) pursuant to this Section 3.1.2(b), (ii) if on the IND Diligence Date, Juno has filed [**] for Licensed Products, then Juno shall pay to Editas [**] Dollars ($[**]) pursuant to this Section 3.1.2(b) and (iii) if on the IND Diligence Date, Juno has filed [**] or more INDs for Licensed Products, then Juno shall have achieved the IND Diligence Threshold and no payments shall be due to Editas pursuant to this Section 3.1.2(b).

(c) At the written request of Editas, but no more than [**], Juno shall provide a written report to Editas that reasonably summarizes Juno's exercise of Commercially Reasonable Efforts for Development activities under this Section 3.1.2.

3.1.3 JSC. For the avoidance of doubt, the JSC and each Subcommittee shall no longer oversee or review any of the matters under this Agreement, and shall have no decision-making authority in connection therewith.

3.2 Regulatory.

3.2.1 Transfer of Existing Regulatory Materials. Editas shall assign and transfer (and hereby does assign and transfer), or cause to be assigned and transferred to the extent not owned by Editas, to Juno (or its Designee), promptly (but in all cases within [**]) after the Effective Date any and all Regulatory Materials for any Licensed Products (including any Licensed RNP Complex) held or generated by or on behalf of Editas or any of its Affiliates (the "**Existing Regulatory Materials**"), including providing true, accurate and complete hard and electronic copies thereof to Juno. Thereafter, Juno (or its Designee) shall have the sole right, in its discretion, to file, maintain and hold title to all Existing Regulatory Materials. Notwithstanding the foregoing, at the election of Juno, Juno may notify Editas in writing that it does not desire to take assignment and transfer of certain Existing Regulatory Materials (as so determined by Juno) and in such case, Editas shall not assign or transfer to Juno (or its Designee) such designated Regulatory Materials.

3.2.2 Right of Reference; Access to Data. Pending such time as the Existing Regulatory Materials, if any, are transferred and assigned to Juno (or its Designee), or in the event of failure to transfer and assign any Existing Regulatory Materials to Juno (or its Designee), as required by Section 3.2.1, Juno (and its Designees) shall have, and Editas (on behalf of itself and its Affiliates) hereby grants to Juno (and its Designees), access and a right of reference (without any further action required on the part of Editas or any of its Affiliates, whose authorization to file this consent with any Regulatory Authority is hereby granted) to all such Existing Regulatory Materials and all data contained or referenced in any Existing Regulatory Materials for Juno (and its Designees) to exercise its rights and perform its obligations hereunder. In all cases, Juno (and its Designees) shall have access to all data contained or referenced in any Existing Regulatory Materials, and Editas shall ensure that Juno (and its Designees) are afforded such access.

3.2.3 Regulatory Matters. If Juno determines that any regulatory filings for any Licensed Products are required for any activities hereunder, including INDs, MAAs and other Regulatory Approvals (as applicable), then Juno (or its Designee) shall have the sole right, in its discretion, to seek to obtain and maintain such regulatory filings (in its or its Designee's name). In addition, Juno (or its Designee) shall have the sole right to communicate and otherwise interact with Regulatory Authorities with respect to each Licensed Product, including with respect to any Regulatory Materials in connection therewith. Editas (and its Affiliates) shall have no right to, and shall not, make any regulatory filings related to any Licensed Products or otherwise interact with any Regulatory Authorities with respect to any Licensed Products; provided that, as and to the extent reasonably requested by Juno in writing, Editas shall interact with Regulatory Authorities in connection with Licensed Products with respect to matters related to activities conducted by or on behalf of Editas under the Master Collaboration Agreement. Notwithstanding the foregoing, until such time as a given Existing Regulatory Material, if any, is assigned and transferred to Juno in accordance with Section 3.2.1, Editas shall be responsible for all communications and interactions with Regulatory Authorities with respect to such Existing Regulatory Material; provided that, in connection with any such activities by Editas, Editas shall, to the extent reasonably requested by Juno, consult and coordinate with Juno with respect thereto (including allowing Juno to attend or participate in any meetings or other interactions with Regulatory Authorities to the extent such attendance is not prohibited or limited by such Regulatory Authority) and Editas shall accommodate and comply with any reasonable requests made by Juno in connection therewith (including that Editas shall submit to Juno a copy of any proposed filings and correspondence with any Regulatory Authority for Juno's review and

approval prior to submission thereof). At the request of Juno, Editas shall reasonably assist Juno in communications and filings with Regulatory Authorities with respect to any Licensed Products, including in connection with the preparation of any INDs, MAAs and other Regulatory Approvals for any Licensed Products; provided that Editas shall not be required to write any portion of any application for Regulatory Approval; provided, further, that Juno will provide Editas with reasonable regulatory information as may be required in order to allow Editas to provide such assistance to Juno. For the avoidance of doubt, nothing in this Section 3.2.3 shall prevent Editas from making regulatory filings or otherwise interacting with Regulatory Authorities with respect to any RNP Complex outside of the Exclusive Field.

3.2.4 Pharmacovigilance. At the written request of Juno, promptly after such request, Editas and Juno (or its Designee(s)) will enter into a pharmacovigilance agreement reasonably acceptable to both Parties in order to, among other things, coordinate safety matters and share safety information with respect to Licensed Products.

3.3 Ongoing Transition Assistance; Technology Transfer.

3.3.1 General. Juno may designate one or more of its Affiliates or Third Party subcontractors or advisors (each, a "**Designee**") to provide Juno assistance under this Agreement, including to receive Editas Materials with respect to this Section 3.3; provided that any such Designee shall, prior to receiving any Confidential Information of Editas, be bound by confidentiality obligations and restrictions on use consistent with those set forth in ARTICLE 8; provided, further, that Juno shall remain responsible for any failure by any Designee who receives Editas Confidential Information to treat such information in accordance with ARTICLE 8. Editas shall (and shall cause its Affiliates to) cooperate with Juno (and its Designees) and provide reasonable additional assistance to Juno (and its Designees) to enable Juno (and its Designees) to Research, Develop, Manufacture and Commercialize Licensed Products and Licensed RNP Complexes, as and to the extent reasonably requested by Juno, including for the following purposes (a) conducting a technology transfer to Juno with respect to the Editas Licensed Collaboration Know-How and Editas Licensed Background Know-How, including transferring hard and electronic copies thereof and any documentation (including data and protocols) included therein, in each case, to the extent not previously provided to Juno or its Designee pursuant to the Master Collaboration Agreement; (b) transfer to Juno (and its Designees) the Editas Materials, in each case, to the extent not previously provided to Juno or its Designee pursuant to the Master Collaboration Agreement; (c) providing Juno (and its Designees) reasonable assistance with respect to Manufacturing transition matters related to any Licensed RNP Complex, as more fully contemplated in Section 3.3.2; and (d) providing Juno (and its Designees) with reasonable access by teleconference or in-person (as requested by Juno) to Editas personnel (and personnel of its Affiliates and Third Party contractors) involved in the conduct of the Research Program with respect to any Licensed Program Target or Licensed RNP Complex to assist with the transition and answer questions related to the foregoing, as applicable.

3.3.2 Manufacturing Transition Assistance. As part of the Transition Assistance with respect to a given Licensed Program, as soon as reasonably practicable following a reasonable request by Juno, Editas shall transfer, and thereafter continue to transfer during the Term as may be reasonably requested by Juno from time to time, from Editas (or any of its Affiliates or its Third Party contract manufacturers, as applicable), to Juno (and its Designees), copies in English (in

writing and in an electronic format) of all data, information and other Know-How in the Control of Editas, its Affiliates and its Third Party contract manufacturers that is necessary or reasonably useful to Manufacture any Licensed RNP Complex or Licensed Products, in order to enable Juno (and its Designees) to Manufacture Licensed RNP Complexes and Licensed Products, including to replicate any process employed by or on behalf of Editas to Manufacture any Licensed RNP Complex and Licensed Products. Such transfer shall include all processes, analytical, formulation and process development data, technical memos, batch records, manufacturing process description, complete bill of materials (including known critical raw materials and their screening methods and acceptance criteria), analytical methods used both for product release as well as characterization, development history summary reports and supporting data and reports, cell banking qualification and stability strategy and reports. In addition, at the reasonable request of Juno from time to time, Editas shall make its employees and consultants (including personnel of its Affiliates and Third Party contract manufacturers) available to Juno (and its Designees) to provide reasonable consultation and technical assistance in order to ensure an orderly transition of the manufacturing technology and operations to Juno (and its Designees) and to assist Juno (and its Designees) in its Manufacture of any Licensed RNP Complex and Licensed Products.

3.3.3 Existing Program Agreements. At the written request of Juno, Editas shall reasonably assist Juno (or its Affiliate) in entering into new agreements directly with the counterparties to the Existing Program Agreements to cover the subject matter of any Existing Program Agreements.

3.3.4 Transition Plan. Without limiting the foregoing provisions of this Section 3.3, on a Licensed Program-by-Licensed Program basis, in order to facilitate the Transition Assistance contemplated by this Section 3.3, the Parties shall work together in good faith and establish a transition plan setting forth reasonable transition activities to be undertaken by or on behalf of Editas in order to enable the Research, Development, Manufacture and Commercialization of Licensed RNP Complexes and Licensed Products to Juno (and its Designees) with respect to the applicable Licensed Program(s) (the "**Transition Plan**"); provided that the Parties may mutually agree to divide out the Transition Assistance into separate Transition Plans. Once established, subject to Juno's payment obligations with respect to Transition Assistance as set forth in Section 3.3.5, Editas shall use Commercially Reasonable Efforts to timely perform its activities under the Transition Plan.

3.3.5 Costs. The Parties agree and acknowledge that the foregoing activities conducted by Editas as set forth in this Section 3.3 shall be deemed to be the "**Transition Assistance**". On a Licensed Program-by-Licensed Program basis, Juno shall be entitled to up to (a) with respect to each of the first [**] Licensed Programs (including, for clarity, the Initial Licensed Program), [**] of Transition Assistance per Licensed Program and (b) with respect to each subsequent Licensed Program thereafter, [**] of Transition Assistance per Licensed Program, in each case of (a) and (b), [**] and thereafter, subject to the reasonable availability of Editas resources, Editas shall provide additional Transition Assistance requested by Juno with respect to a Licensed Program at a reasonable hourly rate, and in accordance with a budget, in each case, to be mutually agreed by the Parties and set forth in the applicable Transition Plan.

3.4 RNP Complex Supply. At Juno's written request, on a Licensed Product-by-Licensed Product basis, Editas will be responsible for supplying, and shall supply, to Juno (or its

Designee) Licensed RNP Complexes, for use in Research and Development by or on behalf of Juno hereunder for a period, with respect to a given Licensed Product, through the completion of the [**] for such Licensed Product (or such longer period of time as agreed in writing by the Parties); provided that Juno shall pay to Editas a reasonable, fair value cost for such supply, which cost shall be negotiated in good faith and agreed to by the Parties. Promptly following Juno's request, the Parties shall negotiate in good faith and shall enter into a commercially reasonable supply agreement (including a quality agreement) for Editas to supply (or have supplied) Licensed RNP Complex to Juno (or its Designee) as contemplated by this Section 3.4; provided, however, that Editas shall not be obligated to provide such supply prior to the Parties entering into such supply agreement in accordance with this Section 3.4.

3.5 Covenants.

3.5.1 No Conflicts. Subject to Section 3.5.2, during the Term, Editas shall not and shall cause its Affiliates not to (a) assign, transfer, convey, encumber (through any liens, charges, security interests, mortgages or similar actions) or dispose of, or enter into any agreement with any Third Party to assign, transfer, convey, encumber (through lien, charge, security interest, mortgage or similar action) or dispose of, any Editas Licensed IP except to the extent such assignment, transfer, conveyance, encumbrance or disposition would not conflict with, be inconsistent with or adversely affect in any material respect any of the rights or licenses granted to Juno hereunder; or (b) license or grant to any Third Party, or agree to license or grant to any Third Party, any rights to any Editas Licensed IP if such license or grant would conflict with, be inconsistent with or adversely affect in any material respect any of the rights or licenses granted to Juno hereunder.

3.5.2 Ordinary Course of Business. Without limiting the provisions of Section 3.5.1, subject to the other applicable terms and conditions of this Agreement, during the Term, Editas shall (and shall cause its Affiliates to) (a) maintain the Editas Licensed IP in the ordinary course of business, and in compliance with applicable Law, including not terminating, amending or otherwise modifying, or permitting to be terminated, amended or modified, any In-License Agreement in any manner that would impair or conflict in any respect with any of the rights or licenses granted to Juno hereunder; and (b) ensure that all Editas Licensed IP is and remains during the Term Controlled by Editas, such that Editas maintains the full rights to grant the rights and licenses to the Editas Licensed IP to Juno hereunder (including that any such Patent Rights, Know-How and other IP remains unencumbered such that Editas is able to grant such rights and licenses to Juno). Except (i) with respect to amendments, modifications or termination of an In-License Agreement with respect to Know-How or Patent Rights that solely claim Genome Editing Technology that is not used (nor intended to be used, as determined by Editas in its sole discretion) in the Licensed Program, or (ii) to the extent Editas is legally required by a future court order to make any amendments or modifications to an In-License Agreement, Editas (A) shall not amend, modify, terminate, assign, make an election under or transfer any such In-License Agreement (other than an assignment to an Affiliate or successor of Editas receiving an assignment of this Agreement as permitted under Section 12.4) unless Editas otherwise obtains Juno's prior written consent (such consent not to be unreasonably withheld, conditioned or delayed) if doing so would conflict with or otherwise adversely affect any of the rights or licenses granted to Juno hereunder; (B) shall not breach, or commit any acts or permit the occurrence of any omissions that would

cause the material breach or termination, of any such In-License Agreement; (C) shall satisfy all of its obligations under each such In-License Agreement in all material respects; (D) shall maintain each such In-License Agreement in full force and effect; (E) shall enforce its rights under each such In-License Agreement to preserve any rights or licenses granted to Juno under this Agreement; and (F) shall provide Juno with prompt written notice of any claim of a breach of which it is aware under any such In-License Agreements or notice of termination of any such In-License Agreement. Without limiting the foregoing, if Editas intends to take any action or inaction to terminate any In-License Agreement, including a Foundational In-License in whole or in part, Editas shall use Commercially Reasonable Efforts to provide Juno with an opportunity to obtain a direct license from the applicable Third Party.

ARTICLE 4
ANTITRUST AND COMPETITION LAW COMPLIANCE

4.1 Antitrust Compliance. For the avoidance of doubt, the Parties shall continue to comply with Section 3.5 of the Master Collaboration Agreement, and such provisions shall apply to this Agreement as if set forth directly herein, *mutatis mutandis*.

ARTICLE 5
EXCLUSIVITY

5.1 Exclusivity.

5.1.1 Competing Product. During the Term, except to the extent required for Editas to fulfill its obligations to Juno under and in accordance with this Agreement or the Master Collaboration Agreement, Editas shall not, and, subject to Section 5.1.2, shall ensure that its Affiliates shall not, anywhere in the world, (a) alone or with or through or for any Third Party, conduct or participate in any Research, Development, Manufacturing, Commercialization or other exploitation activities of any Competing Product; (b) grant a license, sublicense or other rights to any Third Party to conduct any of the activities in clause (a); or (c) except for the rights and licenses granted to Juno hereunder, transfer, assign, convey or otherwise sell any Competing Product; provided, however, that the foregoing shall not restrict Editas and its Affiliates from performing their obligations under (i) the Allergan Agreement as to the Excluded Ocular Field, alone or with or for Allergan, (ii) the Beam Agreement as to the Excluded Base Editing Non-Cancer Field, or (iii) the BlueRock Agreement as to the BlueRock Field, in each case, as such agreements exist as of the Execution Date and solely for so long as such agreements remain in full force and effect. As used herein, the term "**Competing Product**" means any product that constitutes, incorporates, comprises or contains any (a) α-β T-Cell or (b) Other Derived T-Cell, in each case, that is modified using any Genome Editing Technology (including any RNP Complex or any component thereof) Directed to any Licensed Program Target for so long as at least one Licensed Program Addendum relating to such Licensed Program Target remains in effect. For the avoidance of doubt, during the Term, any agreement entered into between Editas or any of its Affiliates and a Third Party involving the use of Research, Development, Manufacture, Commercialization or other exploitation activities with respect to any α-β T-Cell, Other Derived T-Cell or any other use of Genome Editing Technology shall expressly exclude the grant of any license, sublicense or other rights, or the conduct of any activities which would violate the terms of this Section 5.1. For clarity, the provisions of this Section 5.1.1 shall not prohibit Editas and its Affiliates, on their own

or through or with any Third Party, from Researching, Developing, Manufacturing, Commercializing or conducting other exploitation activities (including through grants of licenses, sublicenses or other rights to any Third Party to conduct any of the foregoing activities) with respect to its exploitation of Genome Editing Technology, including the use of Licensed RNP Complexes, with respect to any product that is not a Licensed Product or a Competing Product.

5.1.2 Exceptions for Change of Control. Notwithstanding the provisions of Section 5.1.1, if, following the Execution Date, Editas undergoes a Change of Control and an Acquiring Affiliate is engaged in any activities immediately prior to the effective date of such Change of Control that would violate Section 5.1.1 if conducted by Editas (an "**Existing Acquirer Program**"), then Editas shall not be in breach of the provisions of Section 5.1.1 as a result of the continued conduct of such Existing Acquirer Program by such Acquiring Affiliate during the Term; provided that (a) such Existing Acquirer Program is conducted by such Acquiring Affiliate independently of the activities of this Agreement (including maintaining separate lab notebooks) and without use of, or reference to, any Editas Licensed Background IP, Collaboration IP or any Confidential Information of Juno or any of its Affiliates; (b) no personnel of Editas or any of its Affiliates that are conducting or have conducted any activities under the Research Program or otherwise under this Agreement or the Master Collaboration Agreement, or that has or had access to any Confidential Information of Juno or any of its Affiliates, shall work on the Existing Acquirer Program; and (c) Editas puts in place firewalls and other protections reasonably acceptable to Juno that are reasonably designed to ensure that the foregoing clauses (a) and (b) are complied with during the Term.

5.2 [**]. Notwithstanding anything to the contrary contained herein, during the Term, Editas shall not (and shall cause its Affiliates not to), use any Patent Rights, Know-How or other IP, or any other materials or resources (including any portion of payments from Juno hereunder) that (a) are licensed or otherwise provided by Juno (or any of its Affiliates) hereunder; or (b) were otherwise created, conceived, discovered, generated, invented, made or reduced to practice in the course of conducting any activities pursuant to this Agreement (or the Master Collaboration Agreement), in each case ((a) or (b)) in connection with [**].

5.3 Master Collaboration Agreement. For the avoidance of doubt, the provisions of Section 5.3 of the Master Collaboration Agreement shall not limit in any way the provisions of this ARTICLE 5, and the provisions of this ARTICLE 5 shall not limit in any way the provisions of this Section 5.3 of the Master Collaboration Agreement.

ARTICLE 6
FINANCIAL TERMS

6.1 Opt-In Exercise Fee. Subject to Article 3 of the Master Collaboration Agreement, Juno shall pay to Editas (a) with respect to the Initial Licensed Program, an opt-in exercise fee of [**] Dollars ($[**]) within [**] after the Execution Date; and (b) with respect to each exercise by Juno of its Opt-In Right pursuant to the terms of the Master Collaboration Agreement for a Licensed Program (other than for the Initial Licensed Program), an opt-in exercise fee of [**] Dollars ($[**]) within [**] after the Effective Date of the applicable Licensed Program Addendum (each, an "**Opt-In Exercise Fee**").

6.2 Royalties.

6.2.1 Licensed Product Royalties. Subject to the terms of this Section 6.2 (and subject further to Sections 6.4 and 6.7), on a Calendar Year-by-Calendar Year basis, Juno shall pay Editas royalties on Annual Product Net Sales of a given Licensed Product (on a Licensed Product-by-Licensed Product basis) during the applicable Royalty Term for such Licensed Product (provided that the Royalty Term shall be calculated on a Licensed Product-by-Licensed Product and country-by-country basis), equal to the following portions of Annual Product Net Sales of such Licensed Product during a given Calendar Year multiplied by the applicable royalty rate set forth below for such portion of Annual Product Net Sales during the applicable Royalty Term, which royalties shall be paid in accordance with Section 6.2.5. For clarity, the royalties (and royalty tiers) shall be calculated separately on a Licensed Product-by-Licensed Product basis.

Annual Product Net Sales of a Given Licensed Product in a Given Calendar Year	**Royalty Rate**
Portion of Annual Product Net Sales of a given Licensed Product in a given Calendar Year above $[**], up to and including $[**]	[**]%
Portion of Annual Product Net Sales of a given Licensed Product in a given Calendar Year above $[**], up to and including $[**]	[**]%
Portion of Annual Product Net Sales of a given Licensed Product in a given Calendar Year above $[**]	[**]%

The applicable royalty rates set forth in the table above will apply only to that portion of the Annual Product Net Sales of the applicable Licensed Product during a given Calendar Year that falls within the indicated range. For clarity, (a) if no royalty is payable on a given unit of Licensed Product (e.g., following expiration of the Royalty Term for such Licensed Product in a given country), then the Net Sales of such unit of Licensed Product shall not be included for purposes of determining the royalties or royalty tiers; (b) Net Sales of a given Licensed Product will not be combined with Net Sales of any other Licensed Product for purposes of determining the royalties or royalty tiers; and (c) with respect to any Licensed Products for which a royalty is payable, only one royalty shall be payable by Juno to Editas for each sale of a unit of such Licensed Product, regardless of any Licensed Program Addenda subsequently entered into by the Parties. By way of example and without limitation of this Section 6.2.1, if Annual Product Net Sales of a given Licensed Product were $[**] for a given Calendar Year, then the royalties payable with respect to such Annual Product Net Sales for such Licensed Product for such Calendar Year (assuming no further reductions pursuant to Section 6.2.3 or Section 6.2.4), would be: [**].

6.2.2 Royalty Term. Juno's royalty obligations to Editas under Section 6.2.1 shall apply on a Licensed Product-by-Licensed Product and country-by-country basis only during the applicable Royalty Term for such Licensed Product in such country. Following expiration of the applicable Royalty Term for a given Licensed Product in a given country, as applicable, no further royalties will be payable in respect of sales of such Licensed Product in such country and thereafter

the license granted to Juno hereunder with respect to such Licensed Product in such country will automatically become non-exclusive, fully paid-up, perpetual, irrevocable and royalty-free.

6.2.3 Reductions.

(a) Reductions for No Valid Claim. The royalty amounts payable with respect to Annual Product Net Sales shall be reduced on a Licensed Product-by-Licensed Product and country-by-country basis, to [**] percent ([**]%) of the amounts otherwise payable pursuant to Section 6.2.1 during any portion of the applicable Royalty Term in which the sale of such Licensed Product in such country is not Covered by at least one (1) Valid Claim.

(b) Royalty Reduction for Biosimilar Product. If, on a Licensed Product-by-Licensed Product and country-by-country and Calendar Quarter-by-Calendar Quarter basis:

(i) Biosimilar Product(s) (in the aggregate) have a market share of greater than [**] percent ([**]%) but less than or equal to [**] percent ([**]%); or

(ii) Biosimilar Product(s) (in the aggregate) have a market share of more than [**] percent ([**]%);

then the royalties payable with respect to Annual Product Net Sales of such Licensed Product pursuant to Section 6.2.1 in such country during such Calendar Quarter shall be reduced to [**] percent ([**]%) if subsection (i) applies, or [**] percent ([**]%) if subsection (ii) applies, respectively, of the royalties otherwise payable pursuant to Section 6.2.1. Market share shall be based on the aggregate market in such country of such Licensed Product and the Biosimilar Product(s) (based on the number of units of such Licensed Product and such Biosimilar Product(s) in the aggregate sold in such country, as reported by a well-known reporting service agreed between the Parties acting reasonably (e.g., IQVIA)).

(c) Notwithstanding the foregoing, in the event that (i) the reductions in both Section 6.2.3(a) and Section 6.2.3(b)(i) apply with respect to a Licensed Product in a given country in a given Calendar Quarter or (ii) the reductions in both Section 6.2.3(a) and Section 6.2.3(b)(ii) apply with respect to a Licensed Product in a given country in a given Calendar Quarter, then, in each case ((i) and (ii)), the royalties payable with respect to Annual Product Net Sales of such Licensed Product pursuant to Section 6.2.1 in such country during such Calendar Quarter shall in no event be reduced pursuant to this Section 6.2.3 to less than [**] percent ([**]%) of such royalty payments that would otherwise be payable in such Calendar Quarter.

6.2.4 Royalty Offset for Juno Third Party Payments; Payment of Allocable Costs and Additional Allocable Costs. Subject to Section 7.18, if Juno (or any of its Affiliates or Sublicensees) obtains from a Third Party a right or license under IP of a Third Party (whether prior to or after the applicable Effective Date), where the Research, Development, Manufacturing, Commercialization or other exploitation of a given Licensed Product (or any Licensed RNP Complex or component thereof) by or on behalf of Juno (or any of its Affiliates or Sublicensees), or obtaining the right or license to such IP for use in connection with any of the foregoing, would result in a payment to such Third Party, then Juno may deduct from the royalty payments that

would otherwise have been due to Editas under Section 6.2.1 with respect to Annual Product Net Sales in a particular Calendar Quarter with respect to the applicable Licensed Product, an amount equal to [**] percent ([**]%) of the amount of any royalties or milestone payments actually paid by Juno (or any of its Affiliates or Sublicensees) to such Third Party for such right or license (or the exercise thereof) ("**Juno Third Party Payments**"); provided that in no event shall the royalty payments due to Editas under Section 6.2.1 (after application of any reductions pursuant to Section 6.2.3) be reduced pursuant to this Section 6.2.4 to less than [**] percent ([**]%) of such royalty payments that would otherwise be payable in such Calendar Quarter; provided, however, that if Juno is unable to fully recover the amounts paid by Juno (or any of its Affiliates or Sublicensees) in such Calendar Quarter, then Juno shall be entitled to carry forward such right of offset to future Calendar Quarters with respect to such excess amount and continue to applying such offset on a Calendar Quarter basis thereafter until fully utilized. Without limiting the foregoing, Juno shall pay to Editas any and all Allocable Costs and Additional Allocable Costs with respect to each Licensed Program (as set forth in the applicable Licensed Program Addendum), and any such Allocable Costs and Additional Allocable Costs shall be deemed Juno Third Party Payments for purposes of this Agreement.

6.2.5 Payment of Royalties. Juno shall: (a) within [**] following the end of each Calendar Quarter in which a royalty payment pursuant to Section 6.2.1 accrues, provide to Editas a written report specifying for such Calendar Quarter (i) the number of Licensed Products sold that are subject to such royalty, (ii) the Annual Product Net Sales in such country during such Calendar Quarter that are subject to such royalty, (iii) the applicable royalty rate under this Agreement, and (iv) any reduction to the royalty applied by Juno pursuant to any one or more of Sections 6.2.3 and 6.2.4; and (b) make the royalty payments owed to Editas hereunder in accordance with such royalty report in arrears, within [**] from the end of the Calendar Quarter in which such payment accrues. In addition, Juno shall use Commercially Reasonable Efforts to, within [**] following a given Calendar Quarter, provide to Editas a preliminary nonbinding report of Annual Product Net Sales of Licensed Product, including gross sales, adjustments made to gross sales and Annual Product Net Sales for such Calendar Quarter.

6.3 Milestones.

6.3.1 Development Milestones.

(a) Subject to the terms of Section 6.3.1(b) (and subject further to Sections 6.4 and 6.7), on a Licensed Product-by-Licensed Product basis, Juno will notify Editas within [**] following the first achievement by Juno or its Affiliates or Sublicensees (provided that if the applicable milestone event is achieved by a Sublicensee, then such notice period shall be extended to [**] following such achievement) under this Agreement after the Effective Date of each milestone event described below in this Section 6.3.1 with respect to a given Licensed Product to achieve such milestone event (each, a "**Development Milestone Event**"), and Juno shall thereafter pay the applicable amounts set forth below associated with the applicable Development Milestone Event in accordance with Section 6.3.2 (each, a "**Development Milestone Payment**"):

Development Milestone Event	Development Milestone Payment
1. Nomination of a Development Candidate for a given Licensed Product	[**] Dollars ($[**])

2.	First IND Acceptance for a given Licensed Product	[**] Dollars ($[**])
3.	Initiation of the first Registration-Enabling Clinical Trial for a given Licensed Product	[**] Dollars ($[**])
4.	Receipt of Regulatory Approval in the U.S. issued by the FDA for a given Licensed Product for the first Indication	[**] Dollars ($[**])
5.	Receipt of (a) Regulatory Approval in the EU issued by the EMA and separate pricing approvals in the first [**] Major European Countries for a given Licensed Product for the first Indication or (b) Regulatory Approval and separate pricing approval by the applicable Regulatory Authority in the first [**] Major European Countries for a given Licensed Product for the first Indication	[**] Dollars ($[**])
6.	Receipt of Regulatory Approval in Japan issued by the MHLW for a given Licensed Product for the first Indication	[**] Dollars ($[**])
7.	Receipt of Regulatory Approval in the U.S. issued by the FDA for a given Licensed Product for a second Indication (which must be a separate and distinct Indication from the first Indication in Development Milestone Event 4 above)	[**] Dollars ($[**])
8.	Receipt of (a) Regulatory Approval in the EU issued by the EMA and separate pricing approvals in the first [**] Major European Countries for a given Licensed Product for a second Indication (which must be a separate and distinct Indication from the first Indication in Development Milestone Event 5 above) or (b) Regulatory Approval and separate pricing approval by the applicable Regulatory Authority in the first [**] Major European Countries for a given Licensed Product for a second Indication (which must be a separate and distinct Indication from the first Indication in Development Milestone Event 5 above); provided that, in either case ((a) or (b)), if Juno determines not to seek separate pricing approvals in such Major	[**] Dollars ($[**])

	European Countries for the second Indication (i.e., Juno is relying on the pricing approval for the first Indication in such Major European Countries), the foregoing requirements to obtain separate pricing approvals shall be deemed to have been satisfied	
9.	Receipt of Regulatory Approval in Japan issued by the MHLW for a given Licensed Product for a second Indication (which must be a separate and distinct Indication from the first Indication in Development Milestone Event 6 above)	[**] Dollars ($[**])

Each of the foregoing milestones in this Section 6.3.1 shall be payable a maximum of one (1) time for a given Licensed Product as set forth in the foregoing chart achieving the applicable Development Milestone Event (i.e., a maximum of nine (9) Development Milestone Payments may be made pursuant to this Section 6.3.1 for a given Licensed Product), and no Development Milestone Payment shall be due hereunder for subsequent or repeated achievement of such Development Milestone Event.

(b) Notwithstanding the provisions of Section 6.3.1(a), (i) with respect to Development Milestone Events [**], no Development Milestone Payments shall be due or payable hereunder in connection with the achievement of any such Development Milestone Event with respect to any Licensed Product that is not Covered by at least one (1) Valid Claim in the applicable Major Market country of Regulatory Approval triggering such Development Milestone Event as of the date of the achievement of such Development Milestone Event, and (ii) if a given Development Milestone Event was achieved by a given Licensed Product and such Development Milestone Event was subsequently achieved by another Licensed Product that was modified using the same Licensed RNP Complex (alone or as part of a Licensed RNP Complex Group), then no additional Development Milestone Payment shall be due or payable hereunder with respect to such subsequent achievement unless the Licensed Product subsequently achieving such Development Milestone Event contained a Juno Material Modification as compared to any other Licensed Product for which such Development Milestone Event was achieved.

6.3.2 Invoice and Payment of Development Milestone Payments. Following receipt of notification by Juno to Editas that Juno has achieved the applicable milestone event triggering a Development Milestone Payment hereunder, Editas shall invoice Juno for the applicable Development Milestone Payment, and Juno shall pay such Development Milestone Payment within [**] after receipt of the invoice therefor.

6.3.3 Commercial Milestones.

(a) Subject to the terms of Section 6.3.3(b) (and subject further to Section 6.4 and 6.7), Juno will notify Editas within [**] after the end of the Calendar Quarter during which the first achievement by Juno or its Affiliates or Sublicensees under this Agreement

after the Effective Date of a given milestone event described below in this Section 6.3.3 (each, a "**Commercial Milestone Event**") with respect to each of the first [**] Licensed Products to achieve such milestone event, and Juno shall thereafter pay the applicable amounts set forth below associated with the applicable milestone event in accordance with Section 6.3.4 (each, a "**Commercial Milestone Payment**" and together with any Development Milestone Payment, each, a "**Milestone Payment**"):

Commercial Milestone Event	Commercial Milestone Payment
First achievement of Annual Product U.S. Net Sales of a given Licensed Product in any single Calendar Year exceeding [**] Dollars ($[**])	[**] Dollars ($[**])
First achievement of Annual Product U.S. Net Sales of such Licensed Product in any single Calendar Year exceeding [**] Dollars ($[**])	[**] Dollars ($[**])
First achievement of Annual Product U.S. Net Sales of such Licensed Product in any single Calendar Year exceeding [**] Dollars ($[**])	[**] Dollars ($[**])

Each of the foregoing milestones in this Section 6.3.3 shall be payable a maximum of [**] times, and no Commercial Milestone Payment shall be due hereunder for (i) any subsequent or repeated achievement of such milestone event with respect to the same Licensed Product or (ii) the achievement of any Commercial Milestone Event by additional Licensed Products after [**] Licensed Products have achieved such Commercial Milestone Event. For the avoidance of doubt, the maximum amount payable by Juno pursuant to this Section 6.3.3 is One Hundred Twenty Million Dollars ($120,000,000).

(b) For clarity, (i) if no royalty is payable on a given unit of Licensed Product (e.g., following the Royalty Term for such Licensed Product in a given country), then the Net Sales of such unit of Licensed Product shall not be included for purposes of determining whether a Commercial Milestone Event is achieved and (ii) payment will be due under this Section 6.3.3 with respect to the first [**] Licensed Products to achieve a Commercial Milestone Event, regardless of whether a Commercial Milestone Payment was previously paid with respect such Licensed Product for achievement of an earlier Commercial Milestone Event.

6.3.4 Invoice and Payment of Commercial Milestone Payments. Following receipt of notification by Juno to Editas that Juno has achieved the applicable milestone event triggering a Commercial Milestone Payment hereunder, Editas shall invoice Juno for the applicable Commercial Milestone Payment, and Juno shall pay such Commercial Milestone Payment within [**] after receipt of the invoice therefor.

6.4 Additional Payment Terms.

6.4.1 Payment Method. Except as otherwise provided in other sections of this Agreement, all payments due to a Party hereunder shall be due and payable within [**] after receipt

of an invoice from the other Party and shall be paid via a bank wire or ACH transfer in U.S. dollars to such bank account as such Party shall designate. All dollar amounts specified in this Agreement are U.S. dollar amounts. For clarity, currency transaction rates used by Juno shall be in accordance with its standard accounting practices consistently applied and in accordance with its accounting practices for external reporting purposes. Editas has the right to verify that the exchange rates used by Juno for a given month align with Juno's external reporting. If the due date of any payment hereunder is not a Business Day, such payment may be paid on the following Business Day. Any undisputed payments that are not paid on the date such payments are due under this Agreement shall bear interest to the extent permitted by Law at the prime rate as reported by *The Wall Street Journal* on the date such payment is due, plus an additional [**] percent ([**]%), calculated on the number of days such payment is delinquent.

6.4.2 Blocked Currency. If at any time any Law in any country in the Territory makes impossible or illegal the prompt remittance of any payments with respect to sales therein, Juno shall promptly notify Editas of the conditions preventing such transfer and such royalties or other payments shall be deposited in local currency in the relevant country to the credit of Editas in a recognized banking institution with a good creditworthiness, such banking institution to be designated by Editas or, if none is designated by Editas within [**], in a recognized banking institution selected by Juno and identified in a written notice given to Editas. If so deposited in a foreign country, Juno shall provide reasonable cooperation to Editas so as to allow Editas to assume control over such deposit as promptly as practicable.

6.4.3 Confidentiality. Each Party shall treat all financial information of the other Party that is subject to review under this ARTICLE 6 (including all royalty reports) as such other Party's Confidential Information.

6.4.4 Taxes; Withholding.

(a) Generally. Each Party will pay any and all income taxes levied on account of all payments it receives under this Agreement except as otherwise provided in this Section 6.4.4.

(b) Tax Withholding. Each Party shall be entitled to deduct and withhold from any amounts payable under this Agreement such taxes as are required to be deducted or withheld therefrom under any provision of applicable Law. The Party that is required to make such withholding (the "**Paying Party**") will (i) deduct those taxes from such payment, (ii) timely remit the taxes to the proper taxing authority, and (iii) send evidence of the obligation together with proof of tax payment to the other Party (the "**Payee Party**") on a timely basis following that tax payment. Each Party agrees to reasonably cooperate with the Paying Party in claiming refunds or exemptions from such deductions or withholdings under any relevant agreement or treaty which is in effect to ensure that any amounts required to be withheld pursuant to this Section 6.4.4(b) are reduced in amount to the fullest extent permitted by applicable Law.

(c) Tax Documentation. Editas has provided a properly completed and duly executed IRS Form W-9 (or other applicable form) to Juno. Prior to the receipt of any payment under this Agreement, Editas (and any other recipient of payments by Juno under this Agreement) shall, to the extent it is legally permitted to, provide to Juno, at the time or times

reasonably requested by Juno or as required by applicable Law, such properly completed and duly executed documentation (for example, IRS Forms W-8 or W-9 or foreign equivalents) as will permit payments made under this Agreement to be made without, or at a reduced rate of, withholding for taxes.

(d) Gross-Up for Increased Taxes. In the event that a withholding tax is imposed at an increased rate on any amount payable under this Agreement solely as a result of (i) any assignment or delegation under Section 12.4 by the paying Party or its predecessor or successor in interest to another Person, (ii) any extension of rights, licenses, immunities and obligations under Section 12.14 by the paying Party or its predecessor or successor in interest to another Person, (iii) the payment of the amount by a Person other than the Party obligated to make such payment under this Agreement, or (iv) any combination of the foregoing clauses (i), (ii) or (iii), in each case ((i) – (iv)), after the applicable Effective Date with a resulting harm to the Party entitled to receive the payment (e.g., the Party entitled to receive the Payment or its Affiliate is not entitled to seek any offsetting credit), then the increase in withholding tax resulting from such action or combination of actions to the extent of such harm (the "**Increased Tax**") shall be subject to the provisions of this Section 6.4.4(d). To the extent an Increased Tax is determinable at the time of the associated payment, the amount otherwise payable under this Agreement shall be increased sufficiently that, after payment of all Increased Taxes (including, for the sake of clarity, Increased Tax on any increased payment under this Section 6.4.4(d)) the net amount received by the recipient of the payment is equal to the net amount such recipient would have received in the absence of action or actions resulting in the Increased Tax to the extent of such harm.

6.5 Records Retention by Juno; Review by Editas.

6.5.1 Records. With respect to royalty payments to be made under Sections 6.2 of this Agreement, Juno agrees to keep and shall procure that its Affiliates and Sublicensees keep, for at least [**] from the end of the Calendar Year to which they pertain, complete and accurate records of sales by Juno or any of its Affiliates (including sales by Sublicensees), as the case may be, of each Licensed Product, in sufficient detail to allow the accuracy of such payments made hereunder to be confirmed.

6.5.2 Review. Subject to the other terms of this Section 6.5.2, during the Term, at the request of Editas, which shall not be made more frequently than [**], upon at least [**] prior written notice from Editas, and at the expense of Editas, Juno shall permit an independent, nationally-recognized certified public accountant selected by Editas and reasonably acceptable to Juno to inspect (during regular business hours) the relevant records required to be maintained by Juno under Section 6.5.1; provided that such audit right shall not apply to records beyond [**] from the end of the Calendar Year to which they pertain. In every case, any such accountant must have previously entered into a confidentiality agreement reasonably acceptable to both Parties and limiting the disclosure and use of such information by such accountant to authorized representatives of the Parties and the purposes germane to Section 6.5.1. Results of any such review shall be binding on both Parties absent manifest error. Such accountant shall report to Editas only whether the particular amount being audited was accurate, and if not, the amount of any discrepancy and the basis for such assessment, and such accountant shall not report any other information to Editas. Editas shall treat the results of any such accountant's review of Juno's records as Confidential Information of Juno subject to the terms of ARTICLE 8. If any review

reveals a deficiency or overpayment in the calculation or payment of royalties by Juno hereunder, then (a) Juno or Editas, as applicable, shall promptly pay (or refund, as applicable) to the other Party the amount of such deficiency or overpayment, as applicable and (b) in the case of a deficiency, if such deficiency is by more than the greater of (i) [**] percent ([**]%) of the aggregate amounts owed by Juno or (ii) [**] Dollars ($[**]), Juno shall, within [**] after receipt of an invoice therefor, pay the reasonable out-of-pocket costs and expenses incurred by Editas for such independent accountant in connection with the review.

6.5.3 Records Final. Upon the expiration of [**] following the end of a given Calendar Year, subject and without prejudice to the determination of any review commenced prior to such third anniversary pursuant to Section 6.5.2, the calculation of royalties payable with respect to such Calendar Year shall be binding and conclusive upon Editas, and Juno (and its Affiliates) shall be released from any liability or accountability with respect to such royalties for such Calendar Year.

6.6 Editas Third Party Agreements. Notwithstanding anything to the contrary contained herein, Editas shall be solely responsible for all costs and payments of any kind (including all upfront fees, annual payments, milestone payments and royalty payments) arising under any agreements between Editas (or any of its Affiliates) and any Third Party (including under any In-License Agreement or other Existing Program Agreement), which costs or payments arise in connection with, or as a result of, the activities conducted hereunder, including the Research, Development, Manufacture or Commercialization of Licensed RNP Complexes or Licensed Products. Juno shall use Commercially Reasonable Efforts to comply with Editas' reasonable requests for financial information with respect to its activities hereunder, to the extent reasonably available to Juno, and solely as necessary for Editas to comply with its reporting obligations to any of its In-License Counterparty under the In-License Agreements; provided that Editas shall ensure that each such In-License Counterparty is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in ARTICLE 8 to maintain the confidentiality thereof and not to use such information except as expressly permitted by this Agreement; provided, further, that Editas shall remain responsible for any failure by any In-License Counterparty who receives such information to treat information as required under ARTICLE 8.

6.7 Additional Provisions. Notwithstanding anything to the contrary contained herein, the terms and provisions of this ARTICLE 6 are subject to Section 12.7 of the Master Collaboration Agreement and Sections 11.7 and 11.9 of this Agreement.

ARTICLE 7
LICENSES; INTELLECTUAL PROPERTY

7.1 License to Juno. Subject to the terms and conditions of this Agreement, Editas hereby grants to Juno an exclusive (even as to Editas) royalty-bearing right and license, with the right to grant sublicenses (subject to Section 7.4), under the Editas Licensed IP to research (including Research), develop (including Develop), make (including Manufacture), have made (including have Manufactured), use, offer for sale, sell, import, Commercialize and otherwise exploit (a) any Licensed RNP Complex (including any component or variant form thereof) in the Licensed Field in the Territory; and (b) any Licensed Product for any purpose (but excluding the

Excluded Ocular Field and the Excluded Base Editing Non-Cancer Field, in each case, for so long as such field is excluded from the Licensed Field in accordance with Section 1.142) in the Territory. Notwithstanding anything to the contrary contained herein, (i) if the Licensed Program described in a Licensed Program Addendum is Directed to a Co-Exclusive Target (as expressly identified in the Licensed Program Addendum), then the rights sublicensed to Juno under this Section 7.1 with respect to such Co-Exclusive Target shall be co-exclusive with the Third Party holding such rights as described in the Master Collaboration Agreement, but solely with respect to the Editas Licensed Background IP that is the subject of the Harvard-Broad Agreements and for so long as such Third Party has co-exclusive rights thereto, (ii) if the Licensed Program described in a Licensed Program Addendum is Directed to a Target for use in medullary cystic kidney disease 1 ("**MCKD1**") (as expressly identified in the Licensed Program Addendum), then the rights sublicensed to Juno under this Section 7.1 with respect to such Licensed Program shall be non-exclusive for use in the MCKD1 field, and (iii) the rights granted pursuant to this Section 7.1 shall be co-exclusive with BlueRock solely to the extent such rights relate to the use of iPSC-derived regulatory T-Cells specifically intended for the treatment, diagnosis or prevention of any Indication that is not a cancer Indication for so long as BlueRock has co-exclusive rights with respect thereto pursuant to the BlueRock Agreement.

7.2 Rights Retained by the Parties. For clarity, each Party retains all rights under Know-How and Patent Rights Controlled by such Party not expressly granted to the other Party pursuant to this Agreement.

7.3 Non-Assertion. Editas hereby covenants and agrees not to (and shall cause its Affiliates not to) sue or bring any cause of action or otherwise assert against (a) Juno, (b) any Affiliate or Sublicensee of Juno that receives a sublicense or other rights from Juno pursuant to the terms of Section 7.4 or Section 12.14, or (c) any of their respective successors or permitted assigns, for any type of infringement of any Patent Rights or misappropriation of any Know-How (but excluding (i) any Excluded Patents or Excluded Know-How, and (ii) any Subsequently Obtained Licensed IP that Juno has not elected to include pursuant to Section 7.17), which infringement or misappropriation arises from the research (including Research), development (including Development), making (including Manufacture), having made (including having Manufactured), using, offering for sale, selling, importing, Commercializing or otherwise exploiting in accordance with this Agreement (A) any Licensed RNP Complex in the Licensed Field in the Territory; and (B) any Licensed Product for any purpose (but excluding the Excluded Ocular Field and the Excluded Base Editing Non-Cancer Field, in each case, for so long as such field is excluded from the Licensed Field in accordance with Section 1.142) in the Territory.

7.4 Sublicenses. Juno shall have the right to grant sublicenses (including through multiple tiers, subject to limitation(s) on further sublicensing in the In-License Agreement(s) as set forth in Section 7.5, if applicable) under the licenses granted to it under Section 7.1 to its Affiliates or Sublicensees; provided that any sublicense granted under this Agreement to a Sublicensee shall be pursuant to a written agreement that subjects such Sublicensee to all relevant restrictions and limitations set forth in this Agreement and Juno shall notify Editas of each such sublicense granted to a Sublicensee. Juno shall remain responsible for the performance of its Sublicensees, and shall ensure that each Sublicensee complies with the applicable terms and conditions of this Agreement. Notwithstanding the foregoing to the contrary, solely with respect

to Editas Licensed Background IP sublicensed to Juno under the Harvard-Broad Licenses, unless and until the receipt of written agreement by Institutions to permit further sublicensing, Juno shall not have the right to grant any sublicenses (other than to Affiliates of Juno and other than may be agreed in writing by Institutions, in each case subject to all restrictions on the granting of sublicenses herein); provided that at the request of Juno, Editas shall promptly use Commercially Reasonable Efforts to obtain such consent from Institutions. Notwithstanding the foregoing to the contrary, solely with respect to Editas Licensed Background IP sublicensed to Juno under the MGH Licenses, unless and until the receipt of written agreement by MGH to permit further sublicensing, Juno shall not have the right to grant any sublicenses (other than to Affiliates of Juno and other than may be agreed in writing by MGH, in each case subject to all restrictions on the granting of sublicenses herein); provided that at the request of Juno, Editas shall promptly use Commercially Reasonable Efforts to obtain such consent from MGH. All sublicenses granted by Juno hereunder, and any further sublicenses by a Sublicensee shall comply with, and be subject and subordinate to, the relevant terms and conditions of this Agreement. If Editas is unable to obtain the written agreement from the Institutions or MGH, as applicable, within [**] after request by Juno, to allow for the further granting of sublicenses by Juno, then upon Juno's request at any time during the Term, Editas shall grant a direct license to any Third Party as Juno directs, provided such direct license is within the scope of Juno's licenses granted under Section 7.1.

7.5 Compliance with In-License Agreements. On a Licensed Program-by-Licensed Program basis, as applicable, the terms of this Agreement, insofar as they relate to a sublicense of Editas Licensed Background IP licensed to Editas or any of its Affiliates pursuant to an In-License Agreement, shall be subject to the applicable provisions of the relevant In-License Agreement, but only to the extent that the applicable In-License Agreement requires such terms and conditions to be imposed on a sublicensee pursuant to such In-License Agreement, as follows: (a) with respect to any Editas Licensed Background IP Controlled by Editas or any of its Affiliates pursuant to the Cas9-I Agreement, the provisions set forth on Schedule 7.5(a) shall apply; (b) with respect to any Editas Licensed Background IP Controlled by Editas or any of its Affiliates pursuant to the Cas9-II Agreement, the provisions set forth on Schedule 7.5(b) shall apply; (c) with respect to Editas Licensed Background IP Controlled by Editas or any of its Affiliates pursuant to the Cpf1 Agreement, the provisions set forth on Schedule 7.5(c) shall apply; (d) with respect to any Editas Licensed Background IP Controlled by Editas or any of its Affiliates pursuant to the 2014 MGH Agreement, the provisions set forth on Schedule 7.5(d) shall apply; and (e) with respect to any Editas Licensed Background IP Controlled by Editas or any of its Affiliates pursuant to the 2016 MGH Agreement, the provisions set forth on Schedule 7.5(e) shall apply; provided that the terms on Schedule 7.5 applicable to a given Licensed Program Addendum shall be appended to such Licensed Program Addendum. Each applicable Licensed Program Addendum shall be updated with respect to any Subsequently Obtained Licensed IP in accordance with Section 7.17.

7.6 No Implied Licenses. Except as explicitly set forth in this Agreement or the Master Collaboration Agreement, neither Party shall be deemed by estoppel or implication to have granted to the other Party any license or other right to any IP or trademarks (or trademark applications) of such Party.

7.7 Insolvency. If this Agreement is terminated due to the rejection of this Agreement by or on behalf of Editas in or during any bankruptcy or similar proceeding of Editas, all licenses

and rights to licenses granted under or pursuant to this Agreement by Editas to Juno are and shall otherwise be deemed to be licenses of rights to "intellectual property" (including for purposes of Section 365(n) of Title 11 of the United States Bankruptcy Code ("**Section 365(n)**") and other similar laws in any other jurisdiction). The Parties agree that Juno, as a licensee of such rights under this Agreement, shall retain and may fully exercise all of its rights and elections under any applicable insolvency statute, and that upon (x) commencement of bankruptcy or similar proceeding by or against Editas, (y) any rejection or similar disavowal of this Agreement by Editas in or during any such proceeding and (z) any election by Juno to exercise its rights to continue its licenses hereunder pursuant to Section 365(n) or any similar provision of applicable law in any jurisdiction, Juno shall be entitled to a complete duplicate of or complete access to (as Juno deems appropriate), any such IP and all embodiments of such IP as may be necessary for Juno to enjoy its license rights hereunder. Such IP and all embodiments thereof shall be promptly delivered to Juno following the occurrence of the events described in the foregoing clauses (x) through (z) of this section and upon written request therefor by Juno. The provisions of this Section 7.7 shall be (i) without prejudice to any rights Juno may have arising under any applicable insolvency statute or other applicable Law and (ii) effective only to the extent permitted by applicable Law. For the avoidance of doubt, the payments required to be made by Juno in connection with any exercise of rights under Section 365(n) or any similar provision of applicable law in any jurisdiction shall include both royalties under Section 6.2 hereof and Milestone Payments under Section 6.3 hereof, in each case as such amounts become due and payable and subject to the terms and conditions set forth herein.

7.8 Ownership.

7.8.1 Inventorship. Notwithstanding the provisions of Section 12.1, inventorship of any inventions (whether patentable or not) created, conceived, discovered, developed, generated, invented, made or reduced to practice by or on behalf of a Party or its Affiliates, whether solely or jointly with any Third Party (or with the other Party or its Affiliates), in the course of activities performed under this Agreement, shall be determined by application of U.S. patent law pertaining to inventorship, and, except as otherwise provided for in Sections 7.8.2 and 7.8.3, ownership of IP shall be determined by inventorship.

7.8.2 Editas Licensed Background IP and Editas Licensed Collaboration IP. As between the Parties (including their respective Affiliates), Editas will retain all right, title and interest in and to all Editas Licensed Background IP and Editas Licensed Collaboration IP, except to the extent that any such rights are licensed or granted to Juno under this Agreement or the Master Collaboration Agreement.

7.8.3 Joint IP. The Parties shall each own an equal, undivided interest in (a) any and all Joint Know-How; and (b) any Joint Patents. Each Party shall assign, and hereby assigns, to the other Party, a joint equal and undivided interest in and to such Joint IP (provided, however, that, for clarity, the foregoing joint ownership rights with respect to Joint IP shall not be construed as granting, conveying or creating any license or other rights to any of the other Party's other IP, unless otherwise expressly set forth in this Agreement), and at the request of a Party, the other Party will execute such documents (including any necessary assignments) to effect such joint ownership of such Joint IP. Each Party shall have the right to disclose (subject to Section 8.1) and exploit (including granting licenses to Third Parties) the Joint IP and Joint Collaboration IP without

a duty of seeking consent or accounting to the other Party; provided that, with respect to Editas, such rights shall be subject to the rights and licenses granted to Juno hereunder (or under the Master Collaboration Agreement), including the obligations of Editas as set forth in ARTICLE 5.

7.8.4 Further Actions. Each Party shall cause its Affiliates and its Affiliates' employees, consultants, sublicensees, agents and contractors to assign to such Party, such Person's right, title and interest in and to any and all Editas Licensed Collaboration IP (in the case of Editas) or Joint IP, and IP rights therein, as is necessary to effect the intent of this Section 7.8.

7.9 Patent Liaisons. Promptly after the Execution Date, each Party shall appoint an individual to act as a patent liaison for such Party (each, a "**Patent Liaison**"). The Patent Liaisons shall be the primary point of contact for the Parties regarding IP-related activities and matters contemplated by this Agreement, as and to the extent requested by Juno from time to time. The name and contact information for each Party's Patent Liaison, as well as any replacement(s) chosen by such Party, in its sole discretion, from time to time, shall be promptly provided to the other Party in accordance with Section 12.7.

7.10 Prosecution and Maintenance of Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents and Joint Patents. Following the Effective Date, the provisions of this Section 7.10 shall apply with respect to the Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents and Joint Patents.

7.10.1 Editas Licensed Background Patents. As between the Parties, Editas shall have the sole right (but not the obligation) to Prosecute and Maintain the Editas Licensed Background Patents; provided, however, that Editas shall use good faith efforts to keep Juno reasonably informed with respect to any material developments regarding the Prosecution and Maintenance of any Editas Licensed Background Patents.

7.10.2 Editas Licensed Collaboration Patents.

(a) Editas shall be responsible for Prosecuting and Maintaining the Editas Licensed Collaboration Patents at Juno's direction and Juno shall have final decision-making authority with respect thereto. Juno shall reimburse Editas for its reasonable out-of-pocket costs incurred in connection with the Prosecution and Maintenance of such Editas Licensed Collaboration Patents.

(b) If Juno intends to allow an Editas Licensed Collaboration Patent to lapse or become abandoned without having first directed Editas to file a substitute, or decides not to participate in any interferences, reissues, re-examinations, inter partes reviews, derivations, post grant proceedings or oppositions with respect to an Editas Licensed Collaboration Patent it shall notify Editas of such decision or intention at least [**] prior to the date upon which such Patent Rights shall lapse or become abandoned, and, if after such consultation between the Parties, Juno still intends to allow such Editas Licensed Collaboration Patent to lapse or become abandoned, Editas shall thereupon have the right (but not the obligation) to assume the Prosecution and Maintenance thereof at Editas' expense with counsel of its choice. The foregoing shall not apply where, with reference to a specific patent family, Juno, in its reasonable determination, decides

not to file a continuing application in a particular country due to the existence of one or more pending patent application(s) in such country.

(c) Notwithstanding the foregoing, solely with respect to Editas Licensed Collaboration Patents that are jointly owned by Editas and BlueRock pursuant to the BlueRock Agreement (i.e., BlueRock is a joint inventor on such Patent Right) (the "**Editas-BlueRock Joint Patents**"), the foregoing prosecution and maintenance rights set forth in this Section 7.10.2 shall be subject to the prosecution and maintenance rights of BlueRock set forth in the BlueRock Agreement for such Editas-BlueRock Joint Patent, as the BlueRock Agreement exists as of the Execution Date and solely for so long as the BlueRock Agreement, or the surviving provisions thereof (to the extent the applicable provisions survive), remains in force and effect.

7.10.3 Joint Collaboration Patents and Joint Patents.

(a) The Parties shall be jointly responsible for Prosecuting and Maintaining the Joint Collaboration Patents and Joint Patents, including for conducting any interferences, re-examinations, inter partes review, post-grant proceedings, reissues and oppositions relating thereto and shall equally share all costs related thereto. The Parties have jointly selected counsel ("**Joint Counsel**") for the Prosecution and Maintenance of all Joint Collaboration Patents and Joint Patents. The Joint Counsel shall give Juno and Editas (or each Party's designee) an opportunity to review the text of each application, office action response or other substantive document relating to a prospective Joint Collaboration Patent or Joint Patent before filing with any patent office in the Territory, shall incorporate Juno's and Editas' (or each Party's designee) reasonable comments with respect thereto, and shall supply Juno and Editas (or each Party's designee) with a copy of each such application, office action response or other substantive document as filed, together with notice of its filing date and serial number. Both Parties shall cooperate with Joint Counsel for all activities relating to Joint Collaboration Patent or Joint Patent prosecution and maintenance. In the event that Editas and Juno provide Joint Counsel with conflicting instructions regarding the Prosecution and/or Maintenance of a Joint Collaboration Patent or Joint Patent, Juno shall have the final decision-making authority with respect to the Prosecution and Maintenance of such Joint Collaboration Patent or Joint Patent.

(b) If Juno intends to allow a Joint Collaboration Patent or Joint Patent, as applicable, to lapse or become abandoned in any country in the Territory without having first filed a substitute, or decides not to participate in any interferences, reissues, re-examinations, inter partes reviews, derivations, post grant proceedings or oppositions with respect to a Joint Collaboration Patent or Joint Patent, as applicable, it shall notify and consult with Editas of such decision or intention at least [**] prior to the date upon which such Patent Rights shall lapse or become abandoned, and, if after such consultation between the Parties, Juno still intends to allow such Joint Collaboration Patent or Joint Patent, as applicable, to lapse or become abandoned, Editas shall thereupon have the right (but not the obligation) to assume the Prosecution and Maintenance thereof at Editas' expense with counsel of its choice and under Editas' direction and control. The foregoing shall not apply where, with reference to a specific patent family, Juno, in its reasonable determination, decides not to file a continuing application in a particular country due to the existence of one or more pending patent application(s) in such country.

7.10.4 Cooperation in Prosecution and Maintenance. The Party that is responsible for the Prosecution and Maintenance of any Editas Licensed Collaboration Patent, Joint Collaboration Patent or Joint Patent, as applicable, pursuant to this Section 7.10 (the "**Prosecuting Party**") shall keep the other Party (the "**Non-Prosecuting Party**") informed as to material developments with respect to the Prosecution and Maintenance of such Patent Rights including by providing copies of all substantive office actions, examination reports, communications or any other substantive documents to or from any patent office, including notice of all interferences, reissues, re-examinations, inter partes reviews, derivations, post grant proceedings or oppositions. The Prosecuting Party shall also provide the Non-Prosecuting Party with a reasonable opportunity to comment substantively on the Prosecution and Maintenance of such Patent Rights prior to taking material actions (including the filing of initial applications), and will in good faith consider any comments made by and actions recommended by the Non-Prosecuting Party; provided, however, that the Non-Prosecuting Party does so consistent with any applicable filing deadlines. The Non-Prosecuting Party shall reasonably cooperate with the Prosecuting Party in connection with any such actions hereunder, including, where Juno is the Prosecuting Party, by making its employees, agents and consultants reasonably available to the Prosecuting Party (and to the Prosecuting Party's authorized attorneys, agents or representatives) to enable the Prosecuting Party to undertake such Prosecution and Maintenance. In addition, the Non-Prosecuting Party shall (and shall cause its Affiliates and its and their employees, agents and consultants to) provide reasonable assistance to the Prosecuting Party (and to the Prosecuting Party's authorized attorneys, agents or representatives) to enable the Prosecuting Party to undertake such Prosecution and Maintenance, including by executing powers of attorney and other documents for the Prosecuting Party to undertake such Prosecution and Maintenance.

7.10.5 Costs of Prosecution and Maintenance. Except as otherwise expressly set forth in this Section 7.10, each Party shall be responsible for all costs and expenses associated with its Prosecution and Maintenance activities under this Section 7.10 with respect to Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents and Joint Patents that it incurs pursuant to Section 7.10.1, Section 7.10.2 or Section 7.10.3, as applicable. Notwithstanding the foregoing provisions of this Section 7.10.5, Juno will not be responsible for any Prosecution and Maintenance costs associated with any subject matter divided out of such Patent Rights that is not licensed to Juno (and Editas shall reimburse Juno for any such costs incurred by Juno or any of its Affiliates).

7.11 Enforcement of Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents and Joint Patents.

7.11.1 Notice. If either Party learns of an infringement or threatened infringement by a Third Party in the Territory of any Editas Licensed Background Patent, Editas Licensed Collaboration Patent, Joint Collaboration Patent or Joint Patent, such Party shall promptly notify the other Party and shall provide such other Party with available evidence of such infringement, and following such notification, the Parties shall confer.

7.11.2 Juno Enforcement Rights. Subject to the provisions of this Section 7.11, Juno shall have the sole right, but not the obligation, to institute, prosecute, and control any action or proceeding (which may include settlement or otherwise seeking to secure the abatement of such infringement) with respect to any infringement of (a) any Editas Licensed Collaboration Patent to

the extent such infringement relates to a Competing Product; and (b) Joint Collaboration Patent or Joint Patent, in each case, at Juno's expense, by counsel of its own choice, in Juno's own name (or, if required, under Editas' name) and under Juno's direction and control, including the right to control the defense of any challenges to such Patent Rights as a counterclaim in such infringement proceeding as well as the defense of declaratory judgment actions; provided, however, that solely with respect to Editas-BlueRock Joint Patents, the foregoing enforcement rights set forth in this Section 7.11.2 shall be subject to the enforcement rights of BlueRock set forth in the BlueRock Agreement for such Editas-BlueRock Joint Patent as the BlueRock Agreement exists as of the Execution Date and solely for so long as the BlueRock Agreement, or the surviving provisions thereof (to the extent the applicable provisions survive), remains in force and effect.

7.11.3 Editas Enforcement Rights. Subject to the provisions of this Section 7.11, as between the Parties, Editas shall have the right (but not the obligation) to institute, prosecute, and control any action or proceeding (which may include settlement or otherwise seeking to secure the abatement of such infringement) with respect to any infringement of (a) any Editas Licensed Background Patent; or (b) any Editas Licensed Collaboration Patent (except to the extent such infringement relates to a Competing Product), in each case, at Editas' expense, by counsel of its own choice, in Editas' own name and under Editas' direction and control, including the right to control the defense of any challenges to such Patent Rights as a counterclaim in such infringement proceeding as well as the defense of declaratory judgment actions. Notwithstanding the foregoing, (i) Editas shall notify Juno in writing prior to initiating any such action or proceeding pursuant to this Section 7.11.3, (ii) Editas shall in good faith give careful consideration of Juno's views and to potential effects on Juno's business in making the decision of whether or not to commence such enforcement action; provided that if Juno has any reasonable grounds for believing that Editas' exercise of its enforcement right with respect to (A) any Editas Licensed Background Patent in connection with a Competing Product or (B) any Editas Licensed Collaboration Patent, in either case, could reasonably be detrimental to the patent protection of any Licensed RNP Complex or Licensed Product, then Editas shall not be permitted to enforce such Patent Rights without the prior consent of Juno, in Juno's discretion, and (iii) if Juno reasonably requests that Editas exercise its enforcement right with respect to (A) any Editas Licensed Background Patent in connection with a Competing Product or (B) any Editas Licensed Collaboration Patent, in either case, then Editas shall enforce such Patent Rights; provided, however, that if Editas notifies Juno in writing of any reasonable grounds for believing that exercise of such enforcement right with respect to any such Editas Licensed Background Patent could reasonably be detrimental to such Editas Licensed Background Patent, then the Parties shall discuss in good faith and mutually agree on the appropriate enforcement action; provided, further, however, that if Juno requests that Editas exercise its enforcement right with respect to any Editas Licensed Background Patent that is sublicensed to Juno hereunder pursuant to the terms of any In-License Agreement(s) and the terms of such In-License Agreement(s) (as set forth in Section 7.5) restrict the ability of Editas to enforce such Editas Licensed Background Patent, then such enforcement shall be subject to the applicable provisions of Section 7.5.

7.11.4 Joinder. In the case of any enforcement action or proceeding set forth in Section 7.11.2, the non-enforcing Party will (and will cause its Affiliates to) join any such action or proceeding as a party at the enforcing Party's expense (and the non-enforcing Party will use Commercially Reasonable Efforts to cause any of its Third Party licensors of the applicable Patent

Right as necessary to join such action or proceeding as a party) if doing so is necessary for the purposes of establishing standing or is otherwise required by applicable Law to pursue such action or proceeding or claim damages. The non-enforcing Party may, at its option, participate in such enforcement action or proceeding at its own expense, but the enforcing Party shall still control such action or proceeding. In the case of any enforcement action or proceeding controlled by Editas pursuant to Section 7.11.3, Juno may, at its option, participate in such enforcement action or proceeding at its own expense.

7.11.5 Consultation; Cooperation. The enforcing Party will keep the non-enforcing Party regularly informed of the status and progress of such enforcement efforts with respect to any Editas Licensed Background Patent, Editas Licensed Collaboration Patent, Joint Collaboration Patent or Joint Patent, as applicable. The enforcing Party shall consult with the non-enforcing Party and will take comments of the non-enforcing Party into good faith consideration with respect to the infringement or claim construction of any claim in any such Editas Licensed Background Patent, Editas Licensed Collaboration Patent, Joint Collaboration Patent or Joint Patent, as applicable. The non-enforcing Party will provide the enforcing Party reasonable cooperation in such enforcement, at such enforcing Party's request and expense.

7.11.6 Settlement. A settlement or consent judgment or other voluntary final disposition of a suit with respect to any Editas Licensed Background Patent, Editas Licensed Collaboration Patent, Joint Collaboration Patent or Joint Patent, as applicable, under this Section 7.11 may be entered into without the consent of the Party not bringing suit; provided, however, that any such settlement, consent judgment or other disposition of any action or proceeding by the Party bringing suit under this Section 7.11 shall not, without the prior written consent of the Party not bringing suit, such consent not to be unreasonably withheld, conditioned or delayed, (a) impose any liability or obligation on the Party not bringing suit or any of its Affiliates; (b) conflict with or reduce the scope of the subject matter claimed in the applicable Editas Licensed Background Patent, Editas Licensed Collaboration Patent, Joint Collaboration Patent or Joint Patent; (c) in the case of Editas as the party bringing the suit, include the grant of any license, covenant or other rights to any Third Party that would conflict with or reduce the scope of the rights or licenses granted to Juno under this Agreement or the Master Collaboration Agreement; or (d) in the case of Editas as the party bringing the suit, otherwise adversely affect the rights granted to Juno hereunder with respect to such Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents, as applicable.

7.11.7 Costs and Recoveries. Except as otherwise set forth in this Section 7.11, each Party shall bear all of its costs incurred in connection with its activities under this Section 7.11. Any damages or other monetary awards recovered in any action, suit or proceeding brought under this Section 7.11 to the extent related to any Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents shall be shared as follows:

(a) the amount of such recovery actually received by the Party controlling such action shall first be applied to reimburse costs and expenses incurred by each Party in connection with such action (including, for this purpose, a reasonable allocation of expenses of internal counsel); and

(b) the remaining portion of such recovery shall be paid to Juno; provided that Editas shall receive an amount equal to the royalties that would have been due upon such remainder calculated in accordance with Section 6.2 as if such remainder are Net Sales of a Licensed Product sold by or under the authority of Juno; provided that, if the recovery relates to Patent Right(s) that are sublicensed to Juno hereunder pursuant to the terms of any In-License Agreement(s) and the terms of such In-License Agreement(s) (as set forth in Section 7.5), entitles the applicable In-License Counterparty(ies) to a portion of any recovery that is greater than the amount otherwise payable to Editas pursuant to this Section 7.11.7(b), the Parties will meet and agree in good faith on an alternative sharing of such recovery that takes into account the amounts payable to the applicable In-License Counterparty(ies) and results in an equitable allocation of the amounts remaining to Juno and Editas.

7.11.8 Biosimilar Applications. Notwithstanding the foregoing provisions of this Section 7.11, if either Party receives a copy of a Biosimilar Application referencing a Licensed Product, whether or not such notice or copy is provided under any applicable Law (including under the BPCIA, the United States Patient Protection and Affordable Care Act, or their successor provisions, or any similar provisions in a country outside the United States, as applicable), or otherwise becomes aware that such a Biosimilar Application has been submitted to a Regulatory Authority for marketing authorization (such as in an instance described in 42 U.S.C. § 262(l)(2)), the remainder of this Section 7.11.8 shall apply. Such Party shall promptly, but in any event within [**] of becoming aware that such a Biosimilar Application has been submitted to a Regulatory Authority for marketing authorization, notify the other Party. The owner of the relevant Patent Rights shall then seek permission to view the Biosimilar Application, information regarding the process or processes used to manufacture the product that is the subject of the Biosimilar Application, and related confidential information from the filer of the Biosimilar Application if necessary under 42 U.S.C. § 262(l)(1)(B)(iii). If either Party receives any equivalent or similar communication or notice in the United States or any other jurisdiction, the Party receiving such communication or notice shall within [**] notify the other Party of such communication or notice to the extent permitted by applicable Law. Regardless of the Party that is the "reference product sponsor", as defined in 42 U.S.C. § 262(l)(1)(A), for purposes of such Biosimilar Application:

(a) Juno shall designate, to the extent permitted by applicable Law, or otherwise Editas shall designate in accordance with Juno's instructions, the outside counsel and in-house counsel who shall receive confidential access to the Biosimilar Application, information regarding the process or processes used to manufacture the product that is the subject of the Biosimilar Application, and any related confidential information pursuant to 42 U.S.C. § 262(l)(1)(B)(ii).

(b) In each case, after consulting with Editas and considering Editas' comments in good faith, Juno shall have the right to (i) list any Patent Rights, including any Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents and Joint Patents, as required pursuant to 42 U.S.C. § 262(l)(3)(A) or 42 U.S.C. § 262(l)(7), (ii) respond to any communications with respect to such lists from the filer of the Biosimilar Application, (iii) negotiate with the filer of the Biosimilar Application as to whether to utilize a different mechanism for information exchange other than that specified in 42 U.S.C. § 262(l)(1) and (iv) as to the Patent Rights that will be subject to the litigation procedure as described in 42

U.S.C. § 262(l)(4), decide which Patent Rights shall be selected for litigation under 42 U.S.C. § 262(l)(5)(B)(i)(II), and commence such litigation under 42 U.S.C. § 262(l)(6). If Editas is required pursuant to applicable Law to execute any of these tasks, it shall do so in accordance with Juno's instructions.

(c) Juno shall have the right, after consulting with Editas, to identify Patent Rights, including any Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents and Joint Patents, or respond to relevant communications under any equivalent or similar listing to those described in the preceding clause (b) in any other jurisdiction outside of the United States. If Editas is required pursuant to applicable Law to execute any of these tasks, it shall do so in accordance with Juno's instructions.

(d) Editas shall cooperate with Juno's reasonable requests in connection with the foregoing activities to the extent required or permitted by applicable Law. Juno shall consult with Editas prior to identifying any Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents to a Third Party as contemplated by this Section 7.11.8. Juno shall consider in good faith advice and suggestions with respect thereto received from Editas, and notify Editas of any such lists or communications promptly after they are made.

(e) Each Party shall notify the other Party within [**] after receiving any notice of commercial marketing provided by the filer of a Biosimilar Application pursuant to 42 U.S.C. § 262(l)(8)(A). To the extent permitted by applicable Law, Juno shall have the first right, but not the obligation, to seek an injunction against such commercial marketing as permitted pursuant to 42 U.S.C. § 262(l)(8)(B) and to file an action for infringement. If required pursuant to applicable Law, upon Juno's request, Editas shall assist in seeking such injunction or filing such infringement action after consulting with Juno. Except as otherwise provided in this Section 7.11.8, any such action shall be subject to the terms and conditions of Sections 7.11.1 through 7.11.7.

(f) The Parties recognize that procedures other than those set forth above in this Section 7.11.8 may apply with respect to Biosimilar Applications, either in the United States or elsewhere. If the Parties determine that certain provisions of applicable Law in the United States or in any other country in the Territory apply to actions taken by the Parties with respect to Biosimilar Applications under this Section 7.11.8 in such country, the Parties shall comply with any such applicable Law in such country (and any relevant and reasonable procedures established by Parties) in exercising their rights and obligations with respect to Biosimilar Applications under this Section 7.11.8 in a manner to effectuate the intent of this Section 7.11.8. Notwithstanding the foregoing provisions of this Section 7.11.8, nothing in this Section 7.11.8 shall grant any rights to Editas with respect to any Juno IP.

7.12 Patent Term Extensions. Subject to the terms of the In-License Agreements as set forth in Section 7.5, Editas shall reasonably cooperate with Juno, including providing reasonable assistance to Juno (including executing any documents as may reasonably be required), in efforts to seek and obtain patent term restoration or supplemental protection certificates or the like or their equivalents in any country in the Territory, where applicable to Editas Licensed Background Patents (excluding any Editas Licensed Background Patents licensed under an In-License

Agreement), Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents, or any other Patent Rights Controlled by Juno (or any of its Affiliates), including as may be available to the Parties under the provisions of the U.S. Drug Price Competition and Patent Term Restoration Act of 1984 or comparable laws outside the United States, in each case, in connection with any Licensed Product. If elections with respect to obtaining such patent term restoration or supplemental protection certificates or the like or their equivalents are to be made in connection therewith, Juno shall have the right to make the election, and Editas agrees to abide by such election, provided that, with respect to Editas Licensed Collaboration Patents or Editas Licensed Background Patents (excluding any Editas Licensed Background Patents licensed under an In-License Agreement for which Juno shall have no right to make such an election), Juno has (i) given Editas reasonable advance notice of its intention to extend any such Patent Rights; (ii) engaged in good faith discussions with Editas regarding its intention to extend any such Patent Rights and (iii) in good faith considered any argument by Editas to not extend such Patent Rights for business reasons. Without limiting the foregoing, Editas will not (and will cause its Affiliates not to) extend (a) any Editas Licensed Background Patents or Editas Licensed Collaboration Patent, with respect to any Licensed Product or (b) any Joint Collaboration Patent or Joint Patent, in each case ((a) and (b)), without the prior written approval of Juno, in its sole discretion.

7.13 Regulatory Data Protection. Subject to the terms of the In-License Agreements as set forth in Section 7.5, during the Term and after notifying Editas in writing, Juno (or its Designee) shall have the sole right to list, with the applicable Regulatory Authorities in the Territory, all applicable Patent Rights (including any Editas Licensed Background Patents, Editas Licensed Collaboration Patents, Joint Collaboration Patents or Joint Patents) for any Licensed Product, including all so called "Purple Book" listings required under the U.S. Public Health Service Act, and all similar listings in any other relevant countries, and Editas and its Affiliates shall have no right to do so. For the avoidance of doubt, Juno will retain final decision-making authority as to the listing of all applicable Patent Rights for any Licensed Product, regardless of which Party owns such Patent Rights, and Editas shall reasonably assist Juno in connection therewith.

7.14 Common Interest Agreement. At the request of either Party, the Parties shall negotiate in good faith to enter into a common interest agreement to govern their discussion of Patent matters under this Agreement (and the Master Collaboration Agreement).

7.15 License Filing. At the request of Juno, Editas shall, and shall cause its Affiliates to, assist in any license registration processes with applicable Governmental Authorities that may be available for the protection of Juno's interests in this Agreement.

7.16 Defense of Claims Brought by Third Parties. If a Party becomes aware of any actual or threatened claim that the Research, Development, Manufacture or Commercialization of a Licensed RNP Complex or Licensed Product by or on behalf of Juno pursuant to this Agreement infringes the IP rights of any Third Party, such Party shall promptly notify the other Party. In any such instance, the Parties shall as soon as practicable thereafter meet to discuss in good faith regarding the best response to such notice; provided that Juno shall have the final decision-making authority in connection therewith. Except as set forth in Section 10.2 (and without limiting Juno's rights under Section 10.2), (a) Juno shall have the sole right, but not the obligation, to defend and dispose of (including through settlement or license) such claim; and (b) any costs incurred by or on behalf of Juno (or any of its Affiliates or Sublicensees) in connection with the defense or

disposal of any such claim (including any damages, royalties or other amounts payable as a result thereof), to the extent relating to the Research, Development, Manufacture or Commercialization of a Licensed RNP Complex or Licensed Product, shall be included as Juno Third Party Payments and may be deducted from amounts payable to Editas hereunder as set forth in Section 6.2.4, and Juno shall report any such deductions to Editas as part of Juno's royalty report under Section 6.2.5.

7.17 Subsequently Obtained Licensed IP.

7.17.1 In the event that Editas or any of its Affiliates identifies any IP of a Third Party that is necessary for the research, development, making, having made, import, use, offering to sell, selling or otherwise exploiting any Licensed RNP Complex, Licensed Product or Licensed Program Target, then Editas shall notify Juno thereof.

7.17.2 Subject to Section 7.17.1, if, following the Effective Date for a given Licensed Program, Editas or any of its Affiliates (other than an Acquiring Affiliate, unless such Acquiring Affiliate has provided access to Editas or any of its Affiliates to the applicable IP, in which case such Acquiring Affiliate shall be subject to this Section 7.17 with respect to such IP) enters into a license agreement pursuant to which Editas or such Affiliate acquires Control of any IP that claims or covers, or is otherwise necessary or useful for, any Genome Editing Technology, Licensed RNP Complex, Licensed Product or Licensed Program Target with respect to such Licensed Program or the research, development, making, having made, import, use, offering to sell, selling or otherwise exploiting any such Licensed RNP Complex or Licensed Product that was not previously included in the Editas Licensed Background IP (collectively, the "**Subsequently Obtained Licensed IP**"), Editas shall use Commercially Reasonable Efforts to (a) obtain license terms with respect to such Subsequently Obtained Licensed IP that are not more onerous with respect to any Licensed Programs for which sublicenses are granted to or may be granted to Juno hereunder than they are with respect to any other actual or potential programs or products for which such Subsequently Obtained Licensed IP may be practiced or used; provided that Editas shall in no event disproportionately burden any actual or potential Licensed RNP Complex, Licensed Product or Licensed Program and (b) allow for sublicensing to Juno in accordance with this Agreement. Following execution of the applicable in-license agreement, Editas shall promptly provide to Juno a written description of any applicable Subsequently Obtained Licensed IP, which notice will identify the applicable Licensed Program(s) to which such Subsequently Obtained Licensed IP relates, together with a true, correct and complete copy of any such Third Party license (provided that such copy may be redacted as to terms not applicable to a sublicensee thereunder). On a Licensed Program-by-Licensed Program basis, unless and until any such Subsequently Obtained Licensed IP is sublicensed to Juno in accordance with Section 7.17.3, such Subsequently Obtained Licensed IP shall be deemed not to be Controlled by Editas for purposes of the licenses granted to Juno hereunder.

7.17.3 On a Licensed Program-by-Licensed Program basis, as to any Subsequently Obtained Licensed IP (a) for which Editas has provided notice to Juno pursuant to Section 7.17.1 and (b) under which Editas is permitted to grant sublicense rights to Juno, Juno shall notify Editas in writing, within [**] after the date on which Editas delivers to Juno a copy of the applicable Third Party license agreement pursuant to Section 7.17.1, whether Juno desires to receive a sublicense of rights granted under such Third Party license agreement with respect to such Subsequently Obtained Licensed IP in connection with such Licensed Program and, following

Editas' receipt of Juno's notice pursuant to this Section 7.17.3, then the Parties shall in good faith negotiate and mutually agree on (i) any additional terms with respect to such Subsequently Obtained Licensed IP under the applicable Third Party license agreement applicable to Juno as a sublicensees thereunder ("**Additional Subsequently Obtained Sublicense Terms**"), (ii) Juno's agreement to reimburse Editas for any royalties actually paid by Editas under such Third Party agreement directly on account of sales of Licensed Products hereunder by Juno, its Affiliates and other sublicensees and (iii) Juno's reasonable pro rata allocation of any milestone payments actually paid by Editas under such Third Party agreement solely with respect to the sublicense of such Subsequently Obtained Licensed IP as such milestone payments result from the exploitation of the applicable Licensed Product hereunder, which pro rata allocation shall be mutually agreed by the Parties based on the reasonable expected exploitation of such Subsequently Obtained Licensed IP by Juno and its Affiliates and other sublicensees with respect to the applicable Licensed Product in the Licensed Field pursuant to this Agreement as compared to all other current and reasonably anticipated potential products relevant to such Third Party agreement (including Licensed Products and any such products that may be researched, developed or commercialized outside the Licensed Field) ((ii) and (iii), collectively, the "**Additional Allocable Costs**"); provided that, in all cases, the Parties in determining such Additional Allocable Costs shall take into account all current and reasonably anticipated potential products relevant to such Third Party agreement, including additional Licensed Products and any such products that may be researched, developed or commercialized outside the Licensed Field. In the event that the Parties are unable to agree on any such Additional Subsequently Obtained Sublicense Terms or Additional Allocable Costs pursuant to this Section 7.17.3, the Parties shall escalate the matter to the Executive Officers for resolution, and if the Executive Officers are unable to resolve such issue within [**], the matter shall be resolved by binding arbitration pursuant to Section 12.2.2 (and until such matter is resolved, such Subsequently Obtained Licensed IP shall be deemed not to be Controlled by Editas for purposes of the licenses granted to Juno hereunder). Following determination of the Additional Subsequently Obtained Sublicense Terms and Additional Allocable Costs with respect to any Subsequently Obtained Licensed IP for a given Program in accordance with this Section 7.17.3, Juno may elect to include such Subsequently Obtained Licensed IP for each applicable Licensed Program by providing written notice Editas, in which case, (A) such Third Party license agreement shall be considered an "In-License Agreement" under this Agreement solely with respect to the applicable Licensed Program(s) and such Subsequently Obtained Licensed IP will be deemed to be included in the Editas Licensed Background IP; and (B) the applicable Licensed Program Addendum for each such Licensed Program shall be deemed to be amended to include such Additional Subsequently Obtained Sublicense Terms and Additional Allocable Costs and (C) any Additional Allocable Costs shall be considered Juno Third Party Payments hereunder.

7.18 Juno Continuing Rights Under In-License Agreements. At the written request of Juno on case-by-case basis, Editas shall (or shall cause its Affiliates to, as applicable) execute a written agreement, in a form reasonably acceptable to Juno, with each In-License Counterparty within [**] after the date of such request, pursuant to which (a) in the event of an early termination of such In-License Agreement, at the request of Juno, such In-License Counterparty shall grant a direct license to Juno with respect to the IP licensed to Editas under such In-License Agreement, on the same terms under which such In-License Counterparty grants such license to Editas (or its Affiliate, as applicable) under such In-License Agreement; (b) such In-License Counterparty agrees to and acknowledges the rights granted to Juno hereunder with respect to any IP licensed

to Editas (or its Affiliate, as applicable) under such In-License Agreement, including the rights as set forth in this Section 7.18; and (c) Juno shall be a party to such written agreement and have the right to enforce such agreement directly against the counterparties thereto. Notwithstanding anything to the contrary contained herein (including Section 6.2.4), if Juno (or any of its Affiliates) obtains a license to any Patent Rights, Know-How or other IP (that prior to such license had been included in the Editas Licensed IP) from any In-License Counterparty, then Juno may deduct from any amounts payable by Juno to Editas hereunder (including royalties and milestones), any and all amounts payable by Juno (or any of its Affiliates) to such In-License Counterparty for such right or license (or the exercise thereof).

ARTICLE 8
CONFIDENTIALITY

8.1 Nondisclosure. Except as otherwise expressly provided herein, the Parties agree that, for the Term and for [**] thereafter, the receiving Party shall (a) not, except as expressly provided in this ARTICLE 8 disclose to any Third Party any Confidential Information furnished to it by the disclosing Party pursuant to this Agreement (or, to the extent related to the Licensed Program, under the Master Collaboration Agreement, the Original Agreement or First Amended and Restated Agreement); (b) maintain in confidence such Confidential Information using not less than the efforts such receiving Party uses to maintain in confidence its own proprietary information of similar kind and value, but in no event less than a reasonable degree of efforts; and (c) not use such Confidential Information for any purpose except those permitted by this Agreement, including, in the case of Juno, the exercise of the rights and licenses granted to Juno hereunder (it being understood that this Section 8.1 shall not create or imply any rights or licenses not expressly granted under this Agreement). For purposes of this Agreement, "**Confidential Information**" means any confidential or proprietary information, samples or other materials, including Know-How, which are disclosed by or on behalf of one Party to the other Party pursuant to this Agreement (or, to the extent related to the Licensed Program, under the Master Collaboration Agreement, the Original Agreement or First Amended and Restated Agreement), regardless of whether any of the foregoing is marked "confidential" or with other similar designation to indicate its confidential or proprietary nature or communicated to the other Party by or on behalf of the disclosing Party in oral, written, visual, graphic or electronic form. Notwithstanding anything to the contrary herein (and without regard to Section 8.2.1 and Section 8.2.4), (i) (A) the identity of any Licensed Program Target, (B) any Licensed RNP Complexes or Licensed RNP Product and (C) any Editas Licensed Collaboration Know-How comprising the data or results of the Research Program, in each case, (1) shall be deemed Confidential Information of Juno, (2) Juno shall be deemed to be the disclosing Party with respect to thereto and Editas shall be deemed the receiving Party with respect thereto and (3) shall be subject to the obligations of confidentiality and the restrictions on use and disclosure with respect thereto as set forth in this ARTICLE 8 as Juno's Confidential Information and (ii) subject to the foregoing clause (i), the Joint Collaboration Know-How and Joint Know-How shall be Confidential Information of both Parties and each Party shall be deemed to be the disclosing Party with respect to the Joint Collaboration Know-How and Joint Know-How, and each Party shall be subject to the obligations of confidentiality and the restrictions disclosure with respect to the Joint Collaboration Know-How and Joint Know-How as set forth in this ARTICLE 8; provided that, for clarity, each Party shall be free to use the Joint Know-How as set forth in Section 7.8.3.

8.2 Exceptions. The obligations set forth in Section 8.1 shall not apply with respect to any portion of the Confidential Information of the disclosing Party that the receiving Party can show by competent written proof:

8.2.1 was already known to the receiving Party, other than under an obligation of confidentiality or restriction of use, at the time of disclosure;

8.2.2 was generally available to the public or otherwise part of the public domain at the time of its disclosure to the receiving Party;

8.2.3 became generally available to the public or otherwise part of the public domain after its disclosure, including through a publication in accordance with Section 8.6 or Section 8.7, in each case, other than through any act or omission of the receiving Party in breach of this Agreement;

8.2.4 was independently developed by or on behalf of the receiving Party without reference to or reliance upon the disclosing Party's Confidential Information, as demonstrated by documented evidence prepared contemporaneously with such independent development; or

8.2.5 was disclosed to the receiving Party, other than under an obligation of confidentiality, by a Third Party who had no obligation to the disclosing Party not to disclose such information to others.

8.3 Authorized Disclosure.

8.3.1 Disclosure. Notwithstanding Section 8.1, the receiving Party may disclose Confidential Information belonging to the disclosing Party in the following instances:

(a) subject to Sections 8.3.2 and 8.5, to comply with applicable Law (including the rules and regulations of the U.S. Securities and Exchange Commission ("**SEC**") or any national securities exchange) or with judicial process (including prosecution or defense of litigation), if, in the reasonable opinion of the receiving Party's counsel, such disclosure is necessary for such compliance or for such judicial process (including prosecution or defense of litigation);

(b) to governmental or other regulatory agencies in order to Prosecute and Maintain Patent Rights or to gain or maintain approval to conduct Clinical Trials or to market Licensed Product, in each case, under this Agreement, in each case, in accordance with this Agreement, but such disclosure shall only be to the extent reasonably necessary to Prosecute and Maintain Patent Rights or obtain authorizations; provided that reasonable steps are taken to ensure confidential treatment of such Confidential Information (if available);

(c) to any of its officers, employees, acquirers, consultants, agents or Affiliates (including (i) in the case of Juno, to any actual or potential collaborators, licensees, or sublicensees and (ii) in the case of either Party, to such Party's subcontractors for purpose of such subcontractor performing obligations of such Party under this Agreement) as it deems necessary or advisable in the course of conducting activities in accordance with this Agreement in order to

carry out its responsibilities or exercise its rights under this Agreement (including, (A) in the case of Juno, the exercise of the rights and licenses granted to Juno hereunder and (B) in the case of either Party, to use the Joint Collaboration Know-How and Joint Know-How as set forth in Section 7.8.3); provided that each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; provided, however, that, in each of the above situations in this Section 8.3.1(c), the receiving Party shall remain responsible for any failure by any Person who receives Confidential Information from such receiving Party pursuant to this Section 8.3.1(c) to treat such Confidential Information as required under this ARTICLE 8;

(d) with respect to Editas, any Editas Licensed Collaboration Know-How comprising the data or results of the Research Program or Joint Collaboration Know-How specific to the Licensed RNP Complex or to Editas' Genome Editing Technology platform, to (i) any Third Party collaborator or sublicensee in connection with an actual or potential *bona fide* collaboration outside the Exclusive Field or (ii) (A) Allergan as required pursuant to the Allergan Agreement, but solely to the extent such Know-How is specific to the Excluded Ocular Field, (B) Beam as required pursuant to the Beam Agreement, but solely to the extent such Know-How is specific to the Excluded Base Editing Non-Cancer Field, or (C) BlueRock as required pursuant to the BlueRock Agreement, but solely to the extent such Know-How is specific to the BlueRock Field (provided that, for clarity, in each case ((A), (B) or (C)), such Know-How is not specific to any cancer field); provided, however, that in no event shall Editas or any of its Affiliates disclose or otherwise make available to any Third Party the sequence of any Collaboration RNP Complex (including the sequences of the gRNA or RGEN) or the sequence of any donor template or its component parts prior to such Third Party becoming an actual *bona fide* collaboration partner of Editas, without the prior written consent of Juno; provided, further, each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; provided, further, that in each of the above situations in this Section 8.3.1(d), Editas shall remain responsible for any failure by any Person who receives Confidential Information from Editas pursuant to this Section 8.3.1(d) to treat such Confidential Information as required under this ARTICLE 8;

(e) with respect to Editas, to any counterparty to any In-License Agreement solely as required for Editas to comply with its reporting and other obligations under such In-License Agreement as set forth in Section 7.5; provided that each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; provided, further, that in each of the above situations in this Section 8.3.1(e), Editas shall remain responsible for any failure by any Person who receives Confidential Information from Editas pursuant to this Section 8.3.1(e) to treat such Confidential Information as required under this ARTICLE 8;

(f) solely with respect to disclosure of the terms of this Agreement, to (i) investors in connection with any private placement of equity securities of such Party or any of its Affiliates, (ii) underwriters (and their legal counsel) in connection with other market financing

of equity securities of such Party or any of its Affiliates or (iii) lenders in connection with any loan or debt financing transaction of such Party or any of its Affiliates; provided that (A) each such disclosee is bound by written confidentiality obligations and non-use obligations no less restrictive than those set forth in this ARTICLE 8 to maintain the confidentiality thereof and not to use such Confidential Information except as expressly permitted by this Agreement; (B) in each of the above situations in this Section 8.3.1(e), the receiving Party shall remain responsible for any failure by any Person who receives Confidential Information from such receiving Party pursuant to this Section 8.3.1(e) to treat such Confidential Information as required under this ARTICLE 8; and (C) the disclosing Party shall only provide each such disclosee with a copy of this Agreement redacted as to terms not required in connection with the contemplated transaction; and

(g) disclosure, solely on a "need to know basis", to its advisors (including attorneys and accounts) in connection with activities hereunder; provided that, prior to any such disclosure, each disclosee must be bound by written obligations of confidentiality, non-disclosure and non-use no less restrictive than the obligations set forth in this ARTICLE 8 (provided, however, that in the case of legal or other professional advisors subject to professional standards of confidentiality, no written agreement shall be required), which for the avoidance of doubt, will not permit use of such Confidential Information for any purpose except those expressly permitted by this Agreement; provided, however, that, in each of the above situations in this Section 8.3.1(g), the receiving Party shall remain responsible for any failure by any Person who receives Confidential Information from such receiving Party pursuant to this Section 8.3.1(g) to treat such Confidential Information as required under this ARTICLE 8.

8.3.2 Terms of Disclosure. If and whenever any Confidential Information is disclosed in accordance with this Section 8.3, such disclosure shall not cause any such information to cease to be Confidential Information except to the extent that such disclosure results in a public disclosure of such information (other than by breach of this Agreement). Where reasonably possible and subject to Section 8.5, the receiving Party shall notify the disclosing Party of the receiving Party's intent to make any disclosures pursuant to Section 8.3.1(a) sufficiently prior to making such disclosure so as to allow the disclosing Party adequate time to take whatever action it may deem appropriate to protect the confidentiality of the information, and the receiving Party will provide reasonable assistance to the disclosing Party with respect thereto; provided that, in such event, the receiving Party will use reasonable measures to ensure confidential treatment of such information and shall only disclose such Confidential Information of the disclosing Party as is necessary for the purposes of Section 8.3.1(a), as applicable.

8.4 Terms of this Agreement. The Parties agree that this Agreement and the terms hereof shall be deemed to be Confidential Information of both Editas and Juno, and each Party agrees not to disclose any of them without the prior written consent of the other Party, except that each Party may disclose any of them in accordance with the provisions of Section 8.3 or 8.5, as applicable.

8.5 Securities Filings; Disclosure under Applicable Law. Each Party acknowledges and agrees that the other Party may submit this Agreement to (or file this Agreement with) the SEC or any national securities exchange in any jurisdiction (collectively, the "**Securities Regulators**"), or to other Persons as may be required by applicable Law, and if a Party does submit this Agreement to (or file this Agreement with) any Securities Regulators, or other Persons as may

be required by applicable Law, such Party agrees to consult with the other Party with respect to the preparation and submission of a confidential treatment request for this Agreement and to mutually agree on the redactions to this Agreement to be submitted for confidential treatment request, such agreement not to be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, if a Party is required by applicable Law or any Securities Regulator to make a disclosure of the terms of this Agreement in a filing or other submission as required by applicable Law or Securities Regulator, and (a) such Party has provided copies of the disclosure to the other Party reasonably in advance of such filing or other disclosure under the circumstances; (b) such Party has promptly notified the other Party in writing of such requirement and any respective timing constraints; and (c) such Party has given the other Party a reasonable time under the circumstances from the date of notice by such Party of the required disclosure to comment upon and request confidential treatment for such disclosure, then such Party will have the right to make such disclosure at the time and in the manner reasonably determined by its counsel to be required by applicable Law or Securities Regulator if the other Party has not responded within such reasonable time period. Notwithstanding the foregoing, it is hereby understood and agreed that if a Party seeks to make a disclosure as required by applicable Law or Securities Regulator as set forth in this Section 8.5, and the other Party provides comments within the respective time periods or constraints specified herein or within the respective notice, the Party seeking to make such disclosure or its counsel, as the case may be, will in good faith consider incorporating such comments, and, with respect to submitting this Agreement to (or filing this Agreement with) any Securities Regulators, or other Persons as may be required by applicable Law, the Parties shall mutually agree on the redactions to this Agreement to be submitted for confidential treatment request, such agreement not to be unreasonably withheld, conditioned or delayed.

8.6 Publicity.

8.6.1 Press Release; Public Statements. Subject to Section 8.3, Section 8.5 and this Section 8.6, Editas agrees not to (and shall cause its Affiliates not to) issue any press release or other public statement disclosing this Agreement, the activities hereunder, or the transactions contemplated hereby, unless such press release or other public statement is approved by Juno in writing; provided that Editas shall be authorized to make any disclosure, without the approval of Juno, that is required by applicable Law (including the U.S. Securities Act of 1933, as amended, and the U.S. Securities Exchange Act of 1934, as amended) or the rules of any Securities Regulator, or by judicial process, subject to and in accordance with Section 8.3 and Section 8.5, as applicable. Without limiting the foregoing, Editas shall have the right to announce the fact that there was achievement of any Milestone Event; provided that Editas shall not disclose details with respect to the applicable Milestone Event (including information sufficient to identify the Licensed Program, Licensed Program Target or any Licensed RNP Complex or Licensed Product), unless required by applicable Law; provided, further, that Editas shall notify Juno reasonably in advance of any such press release or public statement and shall remove any Confidential Information of Juno therein and incorporate any other reasonable and timely comments from Juno therein, including any reasonable request to limit such press release or public statement. Juno shall have the right to issue any press release or other public statement disclosing the activities hereunder, or the transactions contemplated hereby, without the consent of Editas; provided that, if such press release is specific to a Licensed RNP Complex, then, to the extent practicable, Juno shall notify Editas reasonably in advance of any such press release or public statement and shall use

Commercially Reasonable Efforts to provide a copy of such press release or public statement to Editas. All press releases or public statements issued hereunder shall be subject to Section 8.8.

8.6.2 Additional Restrictions on Disclosure. Without limiting any other restrictions on disclosure as set forth in this ARTICLE 8 with respect to any press release or other public statement proposed to be made by Editas, which discloses any information with respect to any Licensed Program, or otherwise relates to any Licensed Program Target, Licensed RNP Complex or Licensed Product, or the Research, Development, Manufacture, Commercialization or other exploitation of any of the foregoing, including any information related to Clinical Trials or Regulatory Approvals with respect thereto, such press release or other public statement may not be issued without Juno's prior written consent, except for such disclosures by Editas as required by applicable Law or Securities Regulators (solely and to the extent Editas' counsel determines such disclosure is required by applicable Law or Securities Regulators) and in accordance with Sections 8.3 and 8.5, as applicable, and in such case Editas shall (a) use reasonable good faith efforts to afford Juno a reasonable period of time to review any such disclosure; (b) at Juno's request, remove any Confidential Information of Juno therein; and (c) incorporate any other reasonable comments from Juno therein, including any reasonable request to limit such press release or public statement. Notwithstanding the foregoing, any information that has been previously publicly disclosed in accordance with this Agreement may be disclosed again and as long as such disclosure does not exceed the scope, and is presented in the same context, of such prior public disclosure. Subject to the foregoing, if Juno proposes that Editas use specific wording or language with respect thereto, Editas shall in good faith consider incorporating such wording or language.

8.6.3 Previously Issued Public Statements. The contents of any press release or other public statement that has been reviewed and approved by a reviewing Party may be re-released in its full original form by the publishing Party or by such reviewing Party without a requirement for re-approval.

8.7 Permitted Publications of Results.

8.7.1 Publication. Editas and its Affiliates shall have no right to, and shall not, publish or publicly present any information (including publications in journals, posters, presentations at conferences and abstracts submitted in advance of conferences) with respect to any Licensed Program Target, Licensed RNP Complex or Licensed Product or the results of the Research Program with respect thereto, in each case, without Juno's prior written consent. Notwithstanding the foregoing, Editas may publish information with respect to a given Licensed RNP Complex solely to the extent related to activities conducted by or on behalf of Editas outside the Exclusive Field (and without any reference to any Licensed Product, the sequence of any Collaboration RNP Complex (including the sequences of the gRNA or RGEN) or the sequence of any donor template or its component parts and subject to the opportunity for prior review and comment by Juno in accordance with this Section 8.7. Editas agrees to provide Juno with the opportunity to review any proposed abstract, manuscript or scientific presentation (including any verbal presentation) that relates to any such Licensed RNP Complex, at least [**] prior to its intended submission for publication. Juno shall respond in writing promptly and in no event later than [**] after receipt of the proposed publication, with one or more of the following: (a) comments on the proposed publication, which Editas shall consider in good faith; (b) a specific statement of

concern, based upon the need to seek Patent Rights protection or to block publication or public disclosure (including publications in journals, posters, presentations at conferences and abstracts submitted in advance of conferences) if Juno reasonably determines that the proposed disclosure includes any IP that should be maintained as a trade secret to protect any Licensed Program Target or Licensed RNP Complex, in which event Editas agrees not to submit such publication or make such presentation that contains such information for a reasonable period of time, and in no event more than [**], and the Parties agree to review and decide whether to seek patent protection for any such IP in such publication or presentation which may be patentable or to resolve any other issues; or (c) an identification of the Juno's Confidential Information that is contained in the publication reviewed, which Editas shall remove, if requested by Juno. Both Parties understand that a reasonable commercial strategy may require delay of publication of information or filing of patent applications first with respect to activities performed or results obtained pursuant to this Agreement during the Term, or not to publish at all if necessary to preserve trade secrets. The Parties agree to review and decide whether to delay publication of such information to permit filing of patent applications. For clarity, Juno (and its Affiliates and Sublicensees) shall be free to make publications and presentations with respect to any Licensed Program Target, Licensed RNP Complex or Licensed Product or the results of the Research Program with respect thereto, in each case, without the prior review or consent of Editas; provided that if such publication or presentation is specific to a Licensed RNP Complex, then, to the extent practicable, Juno shall notify Editas reasonably in advance of any such publication or presentation.

8.7.2 Re-Publication; Re-Presentation. The contents of any Editas publication or presentation that has been reviewed and approved by Juno may be re-released by Editas as long as such disclosure is presented in substantially the same context and does not exceed the scope of such prior public disclosure, without a requirement for re-approval.

8.8 Use of Names and Marks. Except as otherwise expressly set forth herein, no Party (or its respective Affiliates) shall use the name, trademark, trade name or logo of the other Party or any of its Affiliates, or its or their respective employee(s) in any publicity, promotion, news release or other public disclosure relating to this Agreement or its subject matter, without the prior written permission of the other Party; provided that such permission shall not be required to the extent use thereof may be required by applicable Law or Securities Regulators, including the rules of any securities exchange or market on which a Party's (or its Affiliate's) securities are listed or traded.

8.9 Clinical Trials Registry. For clarity, Juno (and its Affiliates and Designees) shall have the right to publish registry information and summaries of data and results from any Clinical Trials conducted in connection with activities under this Agreement, on its clinical trials registry or on a government-sponsored database such as www.clinicaltrials.gov, without requiring the consent of Editas. The Parties shall reasonably cooperate if required or reasonably requested by Juno in order to facilitate any such publication by Juno (and its Affiliates and Designees).

8.10 Relationship to Master Collaboration Agreement. Except as otherwise expressly stated in this ARTICLE 8, this Agreement supersedes the provisions of Article 8 of the Master Collaboration Agreement with respect to any Confidential Information related to any Licensed Program Target, Licensed RNP Complex or Licensed Product or the results of the Research Program with respect thereto (collectively, the "**Licensed Program Confidential Information**");

provided that, except as otherwise set forth herein, all "Confidential Information" of the "disclosing Party" thereunder that is Licensed Program Confidential Information shall be deemed Confidential Information of the disclosing Party hereunder and shall be subject to the terms and conditions of this Agreement and the "receiving Party" shall be bound by and obligated to comply with such terms and conditions as if they were the receiving Party hereunder. The foregoing shall not be interpreted as a waiver of any remedies available to the "disclosing Party" as a result of any breach, prior to the Effective Date, by the "receiving Party", of its obligations pursuant to Article 8 of the Master Collaboration Agreement.

ARTICLE 9
REPRESENTATIONS, WARRANTIES AND COVENANTS

9.1 Representations and Warranties of Both Parties. Each Party hereby represents and warrants to the other Party, as of the Effective Date (and, for clarity, as of the effective date of each Licensed Program Addendum, as applicable, as though made then), that:

(a) such Party is duly organized, validly existing and in good standing under the applicable Law of the jurisdiction of its formation and has full corporate power and authority to enter into this Agreement, and to carry out the provisions hereof;

(b) such Party has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder;

(c) this Agreement has been duly executed and delivered on behalf of such Party, and constitutes a legal, valid, binding obligation, enforceable against it in accordance with its terms, except to the extent that enforcement of the rights and remedies created hereby is subject to (i) bankruptcy, insolvency, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors, or (ii) laws governing specific performance, injunctive relief and other equitable remedies;

(d) the execution, delivery and performance of this Agreement by such Party does not breach or conflict with any agreement or any provision thereof, or any instrument or understanding, oral or written, to which such Party (or any of its Affiliates) is a party or by which such Party (or any of its Affiliates) is bound, nor violate any applicable Law of any Governmental Authority having jurisdiction over such Party (or any of its Affiliates);

(e) no government authorization, consent, approval, license, exemption of or filing or registration with any court or governmental department, commission, board, bureau, agency or instrumentality, domestic or foreign, under any applicable Law currently in effect, is or will be necessary for, or in connection with, the transaction contemplated by this Agreement, or for the performance by it of its obligations under this Agreement, except (i) as may be required to conduct Clinical Trials or to seek or obtain Regulatory Approvals or applicable Regulatory Materials or (ii) as set forth in Section 3.5 of the Master Collaboration Agreement; and

(f) it has obtained all necessary authorizations, consents and approvals of any Third Party that is required to be obtained by it as of the Effective Date (or, for clarity, the

effective date of such Licensed Program Addendum, as applicable), for, or in connection with, the transaction contemplated by this Agreement, or for the performance by it of its obligations under this Agreement, except (i) as may be required to conduct Clinical Trials or to seek or obtain Regulatory Approvals or applicable Regulatory Materials or (ii) as set forth in Section 3.5 of the Master Collaboration Agreement.

9.2 Additional Representations and Warranties of Editas. Except, on a Licensed Program-by-Licensed Program basis, as set forth in the applicable Licensed Program Addendum, Editas hereby represents and warrants to Juno, as of the Execution Date and the Effective Date of each Licensed Program Addendum, as applicable, as though made then, that:

(a) Each applicable Licensed Program Addendum contains a complete and accurate list of all Patent Rights included in the Editas Licensed IP that claim or cover any Genome Editing Technology necessary or useful to exploit the Initial Licensed Program or the Licensed Program identified in the applicable Licensed Program Addendum, as applicable, in accordance with the licenses granted hereunder (as applicable), Licensed Program Target, Licensed RNP Complex or Licensed Product, including the composition or use, Research, Development, Manufacturing, Commercialization or other exploitation of any of the foregoing, and Editas Controls all such Patent Rights. Except for the Editas Licensed IP, (i) Editas and any of its Affiliates do not own or control (by license or otherwise) any Patent or Know-How that is necessary or useful to Research, Develop, Manufacture or Commercialize any Genome Editing Technology necessary or useful for the exploitation of the Initial Licensed Program or any Licensed Program identified in the applicable Licensed Program Addendum, as applicable, Licensed Program Target, Licensed RNP Complex or Licensed Product and (ii) no other Know-How or Patent Rights arose from the performance of the Research Program under the Master Collaboration Agreement with respect to the Initial Licensed Program or the Licensed Program identified in the applicable Licensed Program Addendum. All issued patents within the Editas Licensed IP are in full force and effect, and have not been determined to be invalid or unenforceable, in whole or in part;

(b) no claim has been issued or served, or written threat of a claim or litigation made by any Person, against Editas or any of its Affiliates that alleges that any Editas Licensed IP is invalid or unenforceable;

(c) Editas has disclosed to Juno the existence of any patent opinions prepared on behalf of Editas or any of its Affiliates or otherwise made available to Editas or any of its Affiliates related to Patent Rights within the Editas Licensed IP;

(d) Editas has the full right and authority to grant all of the rights and licenses granted to Juno (or purported to be granted to Juno) hereunder, and neither Editas nor any of its Affiliates have granted any right or license to any Third Party relating to any of the Editas Licensed IP, Genome Editing Technology, Licensed Program Target, Licensed RNP Complex or Licensed Product, in each case, that would conflict with or limit the scope of any of the rights or licenses granted to Juno hereunder or would otherwise violate Section 5.1.1;

(e) except with respect to the Editas Licensed Background IP licensed to Editas pursuant to an In-License Agreement, Editas is the sole and exclusive owner of the Editas

Licensed IP, except for the Editas Licensed Background IP that is exclusively licensed to Editas (or any of its Affiliates) pursuant to the In-License Agreements identified in the applicable Licensed Program Addendum. All Affiliates of Editas have exclusively licensed or assigned all of their right, title and interest in and to the Editas Licensed IP to Editas. Neither Editas nor any of its Affiliates have granted any mortgage, pledge, claim, security interest, lien or other charge of any kind on the Editas Licensed IP, and the Editas Licensed IP is free and clear of any mortgage, pledge, claim, security interest, lien or charge of any kind. Except with respect to the Editas Licensed Background IP licensed to Editas pursuant to an In-License Agreement, neither Editas nor any of its Affiliates have entered into any agreement under which Editas or any of its Affiliates has obtained a license or sublicense of rights from a Third Party to any Editas Licensed IP or that is otherwise necessary or useful to Research, Develop, Manufacture or Commercialize any Genome Editing Technology necessary or useful for the exploitation of the Initial Licensed Program or any Licensed Program identified in the applicable Licensed Program Addendum, as applicable, Licensed Program Target, Licensed RNP Complex or Licensed Product;

(f) neither Editas nor any of its Affiliates have received any written notice of any claim that any Patent or Know-How (including any trade secret right) owned or controlled by a Third Party would be infringed or misappropriated by the conduct of the activities under the Research Program, or the Research, Development, Manufacture or Commercialization of any Genome Editing Technology, Licensed Program Target, Licensed RNP Complex or Licensed Product;

(g) except as otherwise disclosed by Editas' patent counsel via teleconference to Juno's patent counsel, to Editas' and any of Affiliates' knowledge, (i) the conduct of the activities under the Research Program, as well as the Research, Development and Manufacture of any Licensed Program Target, or Licensed RNP Complex, if any, in each case, as conducted by or on behalf of Editas or any of its Affiliates, has not violated, infringed or misappropriated any IP or proprietary right of any Third Party and (ii) the Research, Development, Manufacture and Commercialization of any Genome Editing Technology, Licensed Program Target, or Licensed RNP Complex, as contemplated to be conducted under this Agreement will not violate, infringe or misappropriate any IP or proprietary right of any Third Party;

(h) except as otherwise indicated the applicable Licensed Program Addendum, there are no claims, judgments, settlements, litigations, suits, actions, disputes, arbitration, judicial or legal administrative or other proceedings or governmental investigations pending or, to Editas' or any of its Affiliates' knowledge, threatened against Editas or any of its Affiliates which would reasonably be expected to adversely affect or restrict the ability of Editas to consummate or perform the transactions contemplated under this Agreement, or which would affect the Editas Licensed IP, or Editas' Control thereof, or any Genome Editing Technology, Licensed Program Target, Licensed RNP Complex or Licensed Product;

(i) neither Editas nor any of its Affiliates have issued a claim against a Third Party alleging that a Third Party is infringing or has infringed or misappropriated any Editas Licensed IP, and, except as otherwise disclosed by Editas' patent counsel via teleconference to Juno's patent counsel, to Editas' and any of its Affiliates' knowledge, no issued patents within the Editas Licensed IP are being infringed and no trade secrets within the Editas Licensed IP are being misappropriated by any Third Party;

(j) neither Editas nor any of its Affiliates have employed or otherwise used in any capacity, the services of any Person suspended, proposed for debarment or debarred under United States law, including under 21 U.S.C. § 335a, or any foreign equivalent thereof, with respect to any Genome Editing Technology, Licensed Program Target, Licensed RNP Complex or Licensed Product or otherwise in performing any portion of the Research Program under the Master Collaboration Agreement with respect thereto. All Research, Development (including non-clinical studies and Clinical Trials) and Manufacturing related to any Genome Editing Technology, Licensed Program Target, Licensed RNP Complex or Licensed Product conducted by or on behalf of Editas or any of its Affiliates, as well as the conduct of the Research Program under the Master Collaboration Agreement with respect thereto, has been conducted in accordance with all applicable Laws (including, to the extent applicable, GCP, GLP and GMP);

(k) neither Editas nor any of its Affiliates have entered into any agreement under which Editas or any of its Affiliates (i) has obtained a license or sublicense of rights from a Third Party to any Genome Editing Technology, Licensed Program Target, Licensed RNP Complex or Licensed Product, or to any Editas Licensed IP, except for the licenses pursuant to the In-License Agreements identified in the applicable Licensed Program Addendum, or (ii) has granted a license, sublicense, option or right to a Third Party in the Licensed Field that remains in effect as of the Execution Date or the Effective Date, as applicable, of such Licensed Program Addendum, as applicable, to Research, Develop, Manufacture or Commercialize any Genome Editing Technology necessary or useful for the exploitation of the Initial Licensed Program or any Program, Licensed Program Target, Licensed RNP Complex or Licensed Product. Each In-License Agreement identified in a Licensed Program Addendum does not conflict with, limit or otherwise materially adversely affect the scope of the rights or licenses granted to Juno hereunder;

(l) other than the Existing Program Agreements and the In-License Agreements identified in the applicable Licensed Program Addendum, Editas (or any of its Affiliates, as applicable) has not entered into any agreement relating to the Editas Licensed IP or the Research, Development, Manufacture, Commercialization or other exploitation of any Genome Editing Technology necessary for the exploitation of the Initial Licensed Program or any Program, Licensed Program Target, Licensed RNP Complex or Licensed Product, or the Editas Licensed IP in the Licensed Field;

(m) with respect to each In-License Agreement, (i) it is in full force and effect; (ii) neither Editas nor any of its Affiliates is in breach thereof; (iii) neither Editas nor any of its Affiliates has received any notice from the counterparty to such In-License Agreement, as applicable, of Editas' (or its Affiliate's, as applicable) breach or notice of threatened breach by Editas (or its Affiliate, as applicable) thereof and (iv) Editas has provided Juno with a true, correct and complete copy of each In-License Agreement (provided that such copy may be redacted as to terms not applicable to a sublicensee thereunder);

(n) Editas has disclosed to Juno all material information and data, and all material correspondences to or from any Regulatory Authority, existing as of the Execution Date or the Effective Date, as applicable, in the possession or control of Editas or any of its Affiliates, in each case related to any Licensed Program, Genome Editing Technology necessary or useful for the exploitation of the Initial Licensed Program or any Licensed Program, Licensed

Program Target, Licensed RNP Complex or Licensed Product, including the composition, use, Research, Development, Manufacture or Commercialization of any of the foregoing;

(o) Editas (and its Affiliates) has not obtained, or filed, any INDs, MAAs or other Regulatory Approvals or any other form of regulatory application for approval of Clinical Trials, marketing or other purpose, for any Licensed RNP Complex in the Licensed Field or any Licensed Product; and

(p) Editas is required to include the provisions of Section 7.5 (including Schedule 7.5 thereto), ARTICLE 13 and any additional provisions of the relevant In-License Agreement(s) as expressly set forth in the Licensed Program Addenda, in each case, to comply with the applicable In-License Agreements.

9.3 Additional Covenants of Editas. Editas hereby further covenants to Juno that:

9.3.1 Listing of Additional Editas Patents. On a Licensed Program-by-Licensed Program basis, Editas shall promptly notify Juno in writing if any Patent Rights in the Editas Licensed IP becomes known to Editas that are not listed on the applicable Licensed Program Addendum.

9.3.2 No Other Uses. Except as otherwise expressly agreed to by Juno in writing, neither Editas nor any of its Affiliates shall use (and neither shall grant any Third Party the right to use) (a) any Licensed Program Target or any Licensed RNP Complex in the Exclusive Field in the Territory; or (b) any Licensed Product for any purpose in the Territory.

9.3.3 Compliance with Law. Editas and its Affiliates shall perform its activities pursuant to this Agreement in compliance (and shall ensure compliance by any of its subcontractors) with all applicable Laws, including, to the extent applicable, GCP, GLP and GMP. Without limiting the foregoing, Editas shall not, and shall cause its Affiliates not to, employ or otherwise use in any capacity, the services of any Person suspended, proposed for debarment or debarred under United States law, including under 21 U.S.C. § 335a, or any foreign equivalent thereof, with respect to activities hereunder for any Licensed Program Target, Licensed RNP Complex or Licensed Product.

9.3.4 Notice from Editas. Editas shall promptly notify Juno in writing in the event that Editas no longer is subject to the restrictions on granting rights to Juno hereunder with respect to the Excluded Ocular Field under the Allergan Agreement or the Excluded Base Editing Non-Cancer Field under the Beam Agreement, or if BlueRock no longer has co-exclusive rights in the BlueRock Field under the BlueRock Agreement. Following the Execution Date, Editas and its Affiliates shall not amend the Allergan Agreement, Beam Agreement or BlueRock Agreement in a manner that could conflict with or otherwise adversely affect the rights granted to Juno hereunder, including an expansion of the field under the Allergan Agreement, Beam Agreement or BlueRock Agreement, as applicable.

9.4 Additional Representation and Warranty of Juno. Except as set forth in the applicable Licensed Program Addendum, Juno hereby represents and warrants to Editas, as of the Execution Date or the Effective Date of each Licensed Program Addendum, as applicable, that

there are no claims, judgments, settlements, litigations, suits, actions, disputes, arbitration, judicial or legal administrative or other proceedings or governmental investigations pending or, to Juno's knowledge, threatened against Juno which would reasonably be expected to adversely affect or restrict the ability of Juno to consummate or perform the transactions contemplated under this Agreement.

9.5 Juno Covenants. Juno hereby covenants to the Editas that Juno and its Affiliates shall perform its activities pursuant to this Agreement in compliance (and shall ensure compliance by any of its subcontractors) with all applicable Laws, including, to the extent applicable, GCP, GLP and GMP. Without limiting the foregoing, Juno shall not, and shall cause its Affiliates not to, employ or otherwise use in any capacity, the services of any Person suspended, proposed for debarment or debarred under United States law, including under 21 U.S.C. § 335a, or any foreign equivalent thereof, with respect to activities hereunder for Licensed Program Target, Licensed RNP Complex or Licensed Product.

9.6 Disclaimer. EXCEPT AS OTHERWISE EXPRESSLY PROVIDED IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATIONS OR EXTENDS ANY WARRANTY OR CONDITION OF ANY KIND, EITHER EXPRESS OR IMPLIED (AND EACH PARTY HEREBY EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES NOT EXPRESSLY PROVIDED IN THIS AGREEMENT), INCLUDING WITH RESPECT TO ANY PATENT RIGHTS OR KNOW-HOW, OR MATERIALS, INCLUDING WARRANTIES OF VALIDITY OR ENFORCEABILITY, MERCHANTABILITY, FITNESS FOR A PARTICULAR USE OR PURPOSE, PERFORMANCE, AND NONINFRINGEMENT OF ANY THIRD PARTY PATENT RIGHTS OR OTHER IP RIGHTS. WITHOUT LIMITING THE FOREGOING, NEITHER PARTY MAKES ANY REPRESENTATION, WARRANTY OR GUARANTEE THAT ANY LICENSED PRODUCT WILL BE SUCCESSFUL, OR THAT ANY OTHER PARTICULAR RESULTS WILL BE ACHIEVED WITH RESPECT TO ANY LICENSED PROGRAM TARGET, LICENSED RNP COMPLEX OR LICENSED PRODUCT HEREUNDER.

ARTICLE 10
INDEMNIFICATION; INSURANCE

10.1 Indemnification by Juno. Juno shall indemnify, defend and hold harmless Editas and its Affiliates and its and their respective directors, officers, employees, agents and their respective successors, heirs and assigns (collectively, the "**Editas Indemnitees**"), from and against any and all Third Party Damages to the extent arising out of or relating to, directly or indirectly, any Third Party Claim to the extent based upon:

(a) bodily injury or death resulting from any Licensed Product that during the Term was Researched, Developed, Manufactured, Commercialized, used, sold or otherwise distributed by or on behalf of Juno, its Affiliates or Sublicensees;

(b) the negligence or willful misconduct of Juno or any of its Affiliates or its or their respective directors, officers, employees or agents, in connection with Juno's performance of its obligations under this Agreement; or

(c) any breach by Juno of any of its representations, warranties, covenants, agreements or obligations under this Agreement;

except, in each case, to the extent such Third Party Damages result from any Third Party Claim covered under Section 10.2(b) or (c).

10.2 Indemnification by Editas. Editas shall indemnify, defend and hold harmless Juno, its Affiliates and its and their respective directors, officers, employees, agents, and their respective successors, heirs and assigns (collectively, the "**Juno Indemnitees**"), from and against any and all Third Party Damages to the extent arising out of or relating to, directly or indirectly, any Third Party Claim to the extent based upon:

(a) bodily injury or death resulting from (i) any Licensed RNP Complex (or product that was modified using a Licensed RNP Complex) Researched, Developed, Manufactured, Commercialized, used, sold or otherwise distributed by or on behalf of Editas, its Affiliates or sublicensees outside of the Exclusive Field or after the Term or (ii) any activities under the Allergan Agreement, Beam Agreement or BlueRock Agreement;

(b) the negligence or willful misconduct of Editas or any of its Affiliates or its or their respective directors, officers, employees or agents, in connection with the performance of Editas' obligations under this Agreement; or

(c) any breach by Editas of any of its representations, warranties, covenants, agreements or obligations under this Agreement;

except, in each case, to the extent such Third Party Damages result from any Third Party Claim covered under Section 10.1(b) or (c).

10.3 Procedure. If a Party is seeking indemnification under Section 10.1 or Section 10.2, as applicable (the "**Indemnitee**"), it shall inform the other Party (the "**Indemnitor**") of the claim giving rise to the obligation to indemnify pursuant to Section 10.1 or Section 10.2, as applicable, as soon as reasonably practicable after receiving notice of the claim (provided, however, any delay or failure to provide such notice shall not constitute a waiver or release of, or otherwise limit, the Indemnitee's rights to indemnification under Section 10.1 or Section 10.2, as applicable, except to the extent that such delay or failure materially prejudices the Indemnitor's ability to defend against the relevant claims). The Indemnitor shall have the right to assume the defense of any such claim for which the Indemnitee is seeking indemnification pursuant to Section 10.1 or Section 10.2, as applicable. The Indemnitee shall cooperate with the Indemnitor and the Indemnitor's insurer as the Indemnitor may reasonably request, and at the Indemnitor's cost and expense. The Indemnitee shall have the right to participate, at its own expense and with counsel of its choice, in the defense of any claim or suit that has been assumed by the Indemnitor. The Indemnitor shall not settle any claim without the prior written consent of the Indemnitee, not to be unreasonably withheld, conditioned or delayed; provided, however, that the Indemnitor shall not be required to obtain such consent if the settlement (a) involves only the payment of money and will not result in the Indemnitee (or other Editas Indemnitees or Juno Indemnitees, as applicable) becoming subject to injunctive or other similar type of relief; (b) does not require an admission by the Indemnitee (or other Editas Indemnitees or Juno Indemnitees, as applicable); and (c) if Editas is the Indemnitor,

does not adversely affect the rights or licenses granted to Juno (or its Affiliate) under this Agreement or the Master Collaboration Agreement. The Indemnitee shall not settle or compromise any such claim without the prior written consent of the Indemnitor, which it may provide in its sole discretion. If the Parties cannot agree as to the application of Section 10.1 or Section 10.2, as applicable, to any claim, pending resolution of the Dispute pursuant to Section 12.2, the Parties may conduct separate defenses of such claims, with each Party retaining the right to claim indemnification from the other Party in accordance with Section 10.1 or Section 10.2, as applicable, upon resolution of the underlying claim. In each case, the Indemnitee shall reasonably cooperate with the Indemnitor, and shall make available to the Indemnitor all pertinent information under the Control of the Indemnitee, which information shall be subject to ARTICLE 8.

10.4 Insurance. During the Term and for a period of [**] thereafter, each Party shall maintain, at its cost, a program of insurance (or, with respect to Juno, self-insurance) against liability and other risks associated with its activities and obligations under this Agreement, and its indemnification obligations hereunder, in such amounts, subject to such deductibles and on such terms as are customary for such Party for the activities to be conducted by it under this Agreement. It is understood that such insurance shall not be construed to create a limit on either Party's liability with respect to its indemnification obligations under this ARTICLE 10, or otherwise.

10.5 LIMITATION OF LIABILITY. NEITHER EDITAS NOR JUNO, NOR ANY OF THEIR RESPECTIVE AFFILIATES, WILL BE LIABLE TO THE OTHER PARTY OR ITS AFFILIATES UNDER OR IN CONNECTION WITH THIS AGREEMENT FOR ANY INDIRECT, INCIDENTAL, CONSEQUENTIAL, SPECIAL OR PUNITIVE OR EXEMPLARY DAMAGES (INCLUDING LOST PROFITS OR LOST REVENUES), WHETHER LIABILITY IS ASSERTED IN CONTRACT, TORT (INCLUDING NEGLIGENCE AND STRICT PRODUCT LIABILITY), INDEMNITY, CONTRIBUTION OR OTHERWISE, AND IRRESPECTIVE OF WHETHER THAT PARTY OR ANY REPRESENTATIVE OF THAT PARTY HAS BEEN ADVISED OF, OR OTHERWISE MIGHT HAVE ANTICIPATED THE POSSIBILITY OF, ANY SUCH LOSS OR DAMAGE. NOTWITHSTANDING THE FOREGOING, NOTHING IN THIS SECTION 10.5 IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF EITHER PARTY UNDER SECTION 10.1 OR SECTION 10.2 FOR ANY THIRD PARTY DAMAGES OR THE LIABILITY OF EITHER PARTY FOR ANY BREACHES OF ARTICLE 8 OR EDITAS FOR BREACH OF ANY OF ITS OBLIGATIONS UNDER ARTICLE 5.

ARTICLE 11
TERM AND TERMINATION

11.1 Term; Expiration.

11.1.1 Term. This Agreement shall become effective on the Execution Date and, subject to Section 3.5 of the Master Collaboration Agreement as to each such subsequent Licensed Program, on the Effective Date of the applicable Licensed Program Addendum, and, unless earlier terminated in accordance with this ARTICLE 11, shall remain in effect until it expires as follows (the "**Term**"):

(a) on a Licensed Product-by-Licensed Product and country-by-country basis, this Agreement shall expire on the date of the expiration of the Royalty Term with respect to such Licensed Product in such country; and

(b) in its entirety upon the expiration of all applicable Royalty Terms under this Agreement with respect to all Licensed Products in all countries in the Territory.

11.1.2 Effect of Expiration. After the expiration of the Term pursuant to Section 11.1.1, the following terms shall apply:

(a) *Licenses after Licensed Product Expiration*. Except with respect to a Licensed Product as to which this Agreement was previously terminated, on a country-by-country basis, after expiration of the Royalty Term with respect to a given Licensed Product in a given country pursuant to Section 11.1.1(a), the licenses set forth in Section 7.1 with respect to such Licensed Product (and the Licensed RNP Complex or Licensed RNP Complex Group, as applicable, used to modify such Licensed Product) in such country will automatically become non-exclusive, fully paid-up, perpetual, irrevocable and royalty-free.

(b) *Licenses after Expiration of this Agreement*. Except with respect to a Licensed Product as to which this Agreement was previously terminated, after expiration of the Term with respect to this Agreement in its entirety pursuant to Section 11.1.1(b), all licenses set forth in Section 7.1 will automatically become non-exclusive, fully paid-up, perpetual, irrevocable and royalty-free.

11.2 Termination for Breach.

11.2.1 Material Breach.

(a) *Licensed Product-by-Licensed Product*. This Agreement may be terminated, on a Licensed Product-by-Licensed Product basis, by a Party for the material breach by the other Party of this Agreement with respect to such Licensed Program; provided that the breaching Party has not cured such breach within sixty (60) days after the date of written notice to the breaching Party of such breach (the "**Cure Period**"), which notice shall describe such breach in reasonable detail and shall state the non-breaching Party's intention to terminate this Agreement. For clarity, but subject to Section 11.2.2, the Cure Period for any allegation made as to a material breach under this Agreement will run from the date that written notice was first provided to the breaching Party by the non-breaching Party. Any such termination of this Agreement under this Section 11.2.1(a) shall become effective at the end of the Cure Period, unless the breaching Party has cured such breach prior to the expiration of such Cure Period, or, if such breach is not susceptible to cure within the Cure Period, then such Cure Period shall be extended for an additional sixty (60) days so long as such material breach is susceptible to cure within such extension period and the breaching Party continues to use commercially reasonable efforts to cure such material breach during such extension period. This Agreement shall remain in force and effect with respect to any and all other Licensed Products that were not subject to the foregoing termination.

(b) *Licensed Program-by-Licensed Program*. On a Licensed Program-by-Licensed Program basis, in the event that Juno fails to make any undisputed payment owed to Editas hereunder with respect to a Licensed Product from a given Licensed Program, Editas may terminate this Agreement as to such Licensed Program, including all Licensed Products from such Licensed Program; provided that Editas has provided Juno with a written notice of breach with respect to such non-payment and Juno not cured such non-payment within the Cure Period. For clarity, but subject to Section 11.2.2, the Cure Period for any allegation made as to such breach under this Agreement will run from the date that written notice was first provided to Juno by Editas. Any such termination of this Agreement under this Section 11.2.1(b) shall result in termination of the relevant Licensed Program Addenda and become effective at the end of the Cure Period, unless Juno has cured such non-payment prior to the expiration of such Cure Period. This Agreement shall remain in force and effect with respect to any and all other Licensed Programs that were not subject to the foregoing termination.

11.2.2 Disagreement as to Breach. Notwithstanding Section 11.2.1, if the Parties in good faith disagree as to whether there has been a breach of this Agreement pursuant to Section 11.2.1, then: (a) the Party that disputes that there has been a breach may contest the allegation by referring such matter, within [**] following such written notice of alleged breach, for resolution to the Executive Officers, who shall meet promptly to discuss the matter and determine, within [**] following referral of such matter, whether or not a breach has occurred pursuant to Section 11.2.1; provided that if the Executive Officers are unable to resolve such dispute within such [**] period after it is referred to them, the matter will be resolved as provided in Section 12.2; (b) the relevant Cure Period with respect thereto will be tolled from the date the breaching Party notifies the non-breaching Party of such dispute and through the resolution of such dispute in accordance with the applicable provisions of this Agreement; (c) subject to Section 11.9, during the pendency of such dispute, all of the terms and conditions of this Agreement shall remain in effect and the Parties shall continue to perform all of their respective obligations hereunder; and (d) if it is ultimately determined that the breaching Party committed such breach, then the breaching Party shall have the right to cure such breach, after such determination, within the Cure Period (as may be extended in accordance with Section 11.2.1) which shall commence as of the date of such determination. Notwithstanding the foregoing, the applicable dispute resolution terms of Section 7.5 shall apply with respect to termination rights solely with respect to any IP Controlled by Editas under the Harvard-Broad Licenses.

11.3 Voluntary Termination. Juno may terminate this Agreement at will, in its sole discretion, on a Licensed Product-by-Licensed Product basis or in its entirety upon ninety (90) days' prior written notice to Editas at any time.

11.4 Termination for Bankruptcy. To the extent allowed under Law, either Party shall have the right to terminate this Agreement in the event of the commencement of any proceeding in or for bankruptcy, insolvency, dissolution or winding up by or against the other Party (other than pursuant to a corporate restructuring) that is not dismissed or otherwise disposed of within [**] thereafter.

11.5 Termination for Patent Challenge. In the event that Juno (or its Affiliate or Sublicensee) brings a Patent Challenge against an Editas Licensed Background Patent or Editas Licensed Collaboration Patent or knowingly assists another party in a Patent Challenge against an

Editas Licensed Background Patent or Editas Licensed Collaboration Patent, except as required under a court order or subpoena or where Juno (or its Affiliate or Sublicensee) is required by legal process to be joined as a party to the Patent Challenge proceeding, Editas shall have the option to terminate this Agreement at its sole discretion with respect to such Editas Licensed Background Patent(s) or Editas Licensed Collaboration Patent(s), as applicable, that are subject of the Patent Challenge upon [**] written notice to Juno if such Patent Challenge or assistance, as applicable, is not dropped by Juno within such [**] period; provided that Editas shall not have the right to terminate this Agreement with respect to the applicable Editas Licensed Background Patent(s) or Editas Licensed Collaboration Patent(s), as applicable, under this Section 11.5, with respect to any such Patent Challenge by a Sublicensee if Juno terminates the sublicense granted to such Sublicensee with respect to the challenged Editas Licensed Background Patent(s) or Editas Licensed Collaboration Patent(s), as applicable, within [**] of Editas' notice to Juno under this Section 11.5. Notwithstanding the foregoing, the applicable terms of Section 7.5 shall apply with respect to any Patent Challenge brought by Juno against Patent Rights Controlled by Editas under the Harvard-Broad Licenses.

11.6 Effects of Termination.

11.6.1 Termination in Full. In the event of termination of this Agreement in its entirety for any reason:

(a) except as set forth in this Section 11.6.1 or Section 11.8, all rights and licenses granted herein shall terminate in full with respect to a termination of this Agreement;

(b) except as set forth in this Section 11.6.1 or Section 11.8, all obligations of Editas and Juno hereunder shall terminate;

(c) each Party shall return or destroy all Confidential Information of the other Party as required by ARTICLE 8 (other than joint Confidential Information), except as reasonably necessary to exercise any surviving rights and except for one copy of which may be retained for archival purposes (which shall remain subject to the confidentiality and non-use provisions of ARTICLE 8); and

(d) notwithstanding the foregoing provisions of this Section 11.6, the licenses granted to Juno hereunder shall survive for twelve (12) months following the effective date of termination in order for Juno (and its Affiliates, Sublicensees and Distributors), at Juno's discretion, during the twelve (12)-month period immediately following the effective date of termination, to (i) finish or otherwise wind-down any ongoing Clinical Trials with respect to any Licensed Products hereunder; and (ii) finish and sell any work-in-progress and any Licensed Products remaining in inventory; provided that Juno shall pay royalties on Annual Product Net Sales of such Licensed Products sold by Juno during such period, to the extent during the applicable Royalty Term, as and to the extent Juno would otherwise be required to pay such royalties as set forth in Section 6.2; provided, however, that Juno shall have no obligation to undertake such activities, in each case of (i) and (ii), as and to the extent determined by Juno.

11.6.2 Termination as to a Licensed Product or Licensed Program. In the event of termination of this Agreement with respect to a given Licensed Product or Licensed Program for any reason:

(a) except as set forth in this Section 11.6.2 or Section 11.8, all rights and licenses granted herein shall terminate with respect to such Licensed Product or Licensed Program, as applicable;

(b) except as set forth in this Section 11.6.2 or Section 11.8, all obligations of Editas and Juno as relates to such Licensed Product or Licensed Program shall terminate;

(c) each Party shall return or destroy all Confidential Information of the other Party with respect to such Licensed Product or Licensed Program as required by ARTICLE 8 (other than joint Confidential Information), except as reasonably necessary to exercise any surviving rights and except for one copy of which may be retained for archival purposes (which shall remain subject to the confidentiality and non-use provisions of ARTICLE 8); and

(d) notwithstanding the foregoing provisions of this Section 11.6, the licenses granted to Juno hereunder with respect to such Licensed Product or Licensed Program shall survive for twelve (12) months following the effective date of termination in order for Juno (and its Affiliates, Sublicensees and Distributors), at Juno's discretion, during the twelve (12)-month period immediately following the effective date of termination, to (a) finish or otherwise wind-down any ongoing Clinical Trials with respect to such Licensed Product or any Licensed Products under such Licensed Program, as applicable; and (b) finish and sell any work-in-progress and such Licensed Product or any Licensed Products remaining in inventory with respect to such Licensed Program, as applicable; provided that Juno shall pay royalties on Annual Product Net Sales of such Licensed Products sold by Juno during such period, to the extent during the applicable Royalty Term, as and to the extent Juno would otherwise be required to pay such royalties as set forth in Section 6.2; provided, however, that Juno shall have no obligation to undertake such activities, in each case of (a) and (b), as and to the extent determined by Juno.

11.7 Certain Additional Remedies of Juno in Lieu of Termination. If Juno has the right to terminate this Agreement (with respect to a given Licensed Product(s)) pursuant to Section 11.2, then in lieu of Juno terminating pursuant to Section 11.2, Juno may elect to have this Agreement continue in full force and effect as modified by this Section 11.7 by providing written notice to Editas prior to the date that otherwise would have been the effective date of termination had Juno exercised its right to so terminate this Agreement (with respect to a given Licensed Product(s)) under Section 11.2; provided that (a) Juno has provided notice to Editas asserting the alleged breach as required by Section 11.2, (b) Editas fails to cure such breach prior to the expiration of the applicable Cure Period (provided that if Editas has notified Juno that it disputes that it is in material breach in accordance with Section 11.2.2, then the Cure Period shall be tolled during the pendency of such dispute as set forth in Section 11.2.2). In such an event, Juno may elect to have this Agreement continue in full force and effect by providing written notice to Editas; provided, however, that if Juno so elects to continue this Agreement, then from and after such time as Juno delivers such written notice to Editas, any and all amounts thereafter payable by Juno hereunder (including Milestone Payments and royalties) shall be reduced by [**] percent ([**]%).

11.8 Surviving Provisions.

11.8.1 Accrued Rights; Remedies. Termination or expiration of this Agreement for any reason shall be without prejudice to any rights that shall have accrued to the benefit of any Party prior to such termination or expiration, and any and all damages or remedies (whether in law or in equity) arising from any breach hereunder, each of which shall survive termination or expiration of this Agreement. Such termination or expiration shall not relieve any Party from obligations, which are expressly indicated to survive termination or expiration of this Agreement. Any payment obligations of a Party that have accrued as of termination or expiration of this Agreement shall survive such termination or expiration, as applicable. Except as otherwise expressly set forth in this Agreement, the termination provisions of this ARTICLE 11 are in addition to any other relief and remedies available to either Party under this Agreement and at applicable Law.

11.8.2 Survival. Without limiting the provisions of Section 11.8.1, the rights and obligations of the Parties set forth in the following Sections and Articles of this Agreement shall survive the expiration or termination of this Agreement (in its entirety or with respect to a given Licensed Product or Licensed Program, as applicable, and, if terminated with respect to a given Licensed Product or Licensed Program, as applicable, then the following Sections and Articles of this Agreement shall survive solely with respect to such Licensed Product or Licensed Program, as applicable), in addition to those other terms and conditions that are expressly stated to survive termination or expiration of this Agreement: ARTICLE 1 (to the extent the definitions are used in other surviving provisions), Section 3.2.2, Section 6.2.2 (last sentence only), Section 6.2.5 (with respect to any payment obligations accrued but unpaid prior to the effectiveness of such termination or expiration), Section 6.3.2 (with respect to any payment obligations accrued but unpaid prior to the effectiveness of such termination or expiration), Section 6.3.4 (with respect to any payment obligations accrued but unpaid prior to the effectiveness of such termination or expiration), Section 6.4 (with respect to any payment obligations accrued but unpaid prior to the effectiveness of such termination or expiration), Section 6.5, Section 6.6, Section 6.7 (with respect to any payment obligations accrued but unpaid prior to the effectiveness of such termination or expiration), Section 7.2, Section 7.6, Section 7.7, Section 7.8, Section 7.10 (solely with respect to Joint Collaboration Patents and Joint Patents), Section 7.11 (solely with respect to Joint Collaboration Patents and Joint Patents), Section 7.12 (solely with respect to Joint Collaboration Patents and Joint Patents), ARTICLE 8, Section 9.6, ARTICLE 10 (provided that Section 10.1(a) shall only survive with respect to units of Licensed Product sold by or on behalf of Juno, its Affiliates or Sublicensees), Section 11.1.2, Section 11.6, Section 11.8, Section 11.9, ARTICLE 12 and ARTICLE 13 (solely to the extent the applicable In-License Agreement, or the surviving provisions thereof (to the extent the applicable provisions survive), is in full force and effect).

11.9 Milestone Payments. Notwithstanding anything to the contrary contained herein, if notice of termination of this Agreement is given prior to achievement of a given milestone set forth in Section 6.3, Juno shall not be obligated to make any Milestone Payment to Editas with respect to any milestone achieved following the notice of such termination, unless such notice of termination was delivered pursuant to Section 11.2 and such material breach was cured within the Cure Period (or extension thereof).

ARTICLE 12
MISCELLANEOUS

12.1 Governing Laws; Venue; Jurisdiction. This Agreement shall be governed by, interpreted and enforced in accordance with the laws of the State of New York, without regard to principles of conflicts or choice of laws that would cause the application of the laws of another jurisdiction and excluding the United Nations Convention on Contracts for the International Sales of Goods; provided, however, that with respect to matters involving the validity or infringement of Patent Rights in a given country, such matter may be brought in the applicable country and the applicable Laws of the applicable country shall apply (subject to Section 7.8.1). Subject to Section 12.2, Disputes arising out of this Agreement shall be subject to the exclusive jurisdiction and venue of the state and federal courts located in New York, New York (and the appellate courts thereof), and each Party hereby irrevocably consents to the personal and exclusive jurisdiction and venue thereof.

12.2 Disputes.

12.2.1 General. Except as otherwise expressly set forth in this Agreement, if any dispute, claim or controversy of arising out of or relating to this Agreement, including any action or claim based on tort, contract or statute, or concerning the interpretation, effect, termination validity, performance or breach of this Agreement (each, a "**Dispute**"), arises between the Parties and the Parties cannot resolve such dispute within [**] of a written request by either Party to the other Party, the Parties agree to refer the Dispute to the respective Executive Officers of each Party for resolution; provided that decisions that are subject to the decision-making authority of a given Party, as expressly set forth in this Agreement, will not be subject to the provisions of Section 12.2 so long as such decisions are made in accordance with this Agreement.

12.2.2 Arbitration. If, after an additional [**], such representatives have not succeeded in negotiating a resolution of the Dispute, and a Party wishes to begin an arbitration to resolve such Dispute arising under this Agreement, such Party shall provide written notice (the "**Arbitration Request**") to the other Party of such intention and a statement of the issues for resolution. From the date of the Arbitration Request and until such time as such Dispute has become finally settled, the running of the time periods as to which Party must cure a breach of this Agreement becomes suspended as to any breach that is the subject matter of the Dispute. Within [**] after the receipt of the Arbitration Request, the other Party may, by written notice, add additional issues for resolution in a statement of counter-issues.

12.2.3 Arbitration Procedure. Any arbitration pursuant to this Section 12.2 will be held in New York, New York, United States unless another location is mutually agreed by the Parties. The arbitration will be governed by the United States Arbitration Act, 9 U.S.C. §§ 1-16, to the exclusion of any inconsistent state Law. The Parties shall mutually agree on the rules to govern discovery and the rules of evidence for the arbitration within [**] after the Arbitration Request. If the Parties fail to timely agree to such rules, the United States Federal Rules of Civil Procedure will govern discovery and the United States Federal Rules of Evidence will govern evidence for the arbitration. The arbitration will be conducted by a single arbitrator knowledgeable in the subject matter at issue in the dispute and acceptable to both Parties; provided that the Parties may by mutual agreement elect to have the arbitration conducted by a panel of three (3) arbitrators.

If the Parties fail to agree on a mutually acceptable arbitrator within [**] after the Arbitration Request, then the arbitrator shall be selected by the New York, New York office of the American Arbitration Association. The arbitrator may proceed to an award, notwithstanding the failure of either Party to participate in the proceedings. The arbitrator shall, within [**] after the conclusion of the arbitration hearing, issue a written award and statement of decision describing the essential findings and conclusions on which the award is based, including the calculation of any damages awarded. The arbitrator shall be limited in the scope of his or her authority to resolving only the specific matter which the Parties have referred to arbitration for resolution and shall not have authority to render any decision or award on any other issues. Subject to Section 10.5, the arbitrator shall be authorized to award compensatory damages, but shall not be authorized to award punitive, special, consequential, or any other similar form of damages, or to reform, modify or materially change this Agreement. The arbitrator also shall be authorized to grant any temporary, preliminary or permanent equitable remedy or relief the arbitrator deems just and equitable and within the scope of this Agreement, including an injunction or order for specific performance. The award of the arbitrator shall be the sole and exclusive remedy of the Parties, except for those remedies that are set forth in this Agreement or which apply to a Party by operation of the applicable provisions of this Agreement, and the Parties hereby expressly agree to waive the right to appeal from the decisions of the arbitrator, and there shall be no appeal to any court or other authority (government or private) from the decision of the arbitrator. Judgment on the award rendered by the arbitrator may be enforced in any court having competent jurisdiction thereof.

12.2.4 Arbitration Costs. Each Party shall bear its own attorneys' fees, costs, and disbursements arising out of the arbitration, and shall pay an equal share of the fees and costs of the arbitrator; provided, however, that the arbitrator, in his or her award, shall be authorized to determine whether a Party is the prevailing Party, and if so, to award to that prevailing Party reimbursement for its reasonable attorneys' fees, costs and disbursements (including, for example, expert witness fees and expenses, transcripts, photocopy charges and travel expenses).

12.2.5 Confidentiality. All proceedings and decisions of the arbitrator shall be deemed Confidential Information of each of the Parties, and shall be subject to ARTICLE 8.

12.2.6 Equitable Relief; Cumulative Remedies. Notwithstanding anything to the contrary contained herein, including Section 12.2.2, either Party may, without waiving any remedy under this Agreement, seek from any court having jurisdiction equitable relief, including any injunctive or provisional relief and specific performance to protect the rights or property of that Party. Such remedies will not be deemed to be the exclusive remedies for a breach of this Agreement but will be in addition to all other remedies available at law or equity. In addition, notwithstanding the provisions of Section 12.2.2, either Party may bring an action in any court having jurisdiction to enforce an award rendered pursuant to Section 12.2.2. The Parties further agree not to raise as a defense or objection to the request or granting of such relief that any breach of this Agreement is or would be compensable by an award of money damages. No remedy referred to in this Agreement is intended to be exclusive, but each shall be cumulative and in addition to any other remedy referred to in this Agreement or otherwise available under applicable Law.

12.2.7 Pending Final Resolution. Until final resolution of the Dispute in accordance with this Agreement, (a) this Agreement will remain in full force and effect; and (b)

the time periods for cure as to any termination will be tolled. The Parties further agree that any payments made pursuant to this Agreement pending resolution of the dispute shall be refunded if a final determination is made in accordance with this Agreement that such payments are not due.

12.2.8 WAIVER OF JURY TRIAL. EXCEPT AS LIMITED BY APPLICABLE LAW, EACH PARTY HERETO HEREBY IRREVOCABLY WAIVES ALL RIGHT TO TRIAL BY JURY IN ANY ACTION, PROCEEDING OR COUNTERCLAIM (WHETHER BASED IN CONTRACT, TORT OR OTHERWISE) ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE ACTIONS OF EITHER PARTY HERETO IN THE NEGOTIATION, ADMINISTRATION, PERFORMANCE AND ENFORCEMENT HEREOF.

12.3 Independent Contractors. The relationship of the Parties under this Agreement is that of independent contractors. Nothing contained herein is intended or is to be construed so as to constitute (a) Editas as a partner, agent, or joint venturer of Juno; or (b) Juno as a partner, agent or joint venturer of Editas. Neither Editas nor Juno, respectively, shall have any express or implied right or authority to assume or create any obligations on behalf of or in the name of Juno or Editas, respectively, or to bind Juno or Editas, respectively, to any contract, agreement, or undertaking with any Third Party.

12.4 Assignment.

12.4.1 General. The Parties agree that, except as expressly permitted hereunder, neither this Agreement nor their rights and obligations under this Agreement shall be delegated, assigned or otherwise transferred to a third party, in whole or part, whether voluntarily or by operation of law, including by way of sale of assets, merger or consolidation, without prior written consent of the other Party. Notwithstanding the foregoing, a Party may, without such consent, assign this Agreement and its rights and obligations hereunder in their entirety (a) to an Affiliate (provided, however, that such Party will remain fully and unconditionally liable and responsible to the other Party for the performance and observance of all such duties and obligations by such Affiliate), provided that, upon written request by the other Party, such Party will disclose to the other Party whether it has assigned this Agreement to an Affiliate and, in such case, the identity of such Affiliate, or (b) its successor in interest in connection with its merger, consolidation, or sale of all or substantially all of its assets or that portion of its business pertaining to the subject matter of this Agreement. Subject to the foregoing, this Agreement shall be binding on and inure to the benefit of the Parties and their permitted successors and assigns. Any attempted delegation, assignment or transfer in violation of this Section 12.4 shall be null and void *ab initio*.

12.4.2 Additional Restrictions for Institution In-Licenses. Without limiting the foregoing, Juno agrees that the rights granted under this Agreement pursuant to the Harvard-Broad Licenses may not be assigned by Juno, whether by operation of law or otherwise, without the consent of the Institutions, except that Juno may assign or transfer this Agreement without the consent of the Institutions, to a successor in interest of all or substantially all of Juno's assets or business related to the Licensed Products or this Agreement, whether by merger, consolidation, sale of assets, or Change of Control or other transaction, provided that (a) Juno shall provide the Institutions with a written notice of such assignment or Change of Control including the identity of the assignee, transferee or controlling party, and a copy of the assignment and assumption agreement or other documentary evidence sufficient to demonstrate Juno's compliance with this

Section 12.4.2 within [**] after such assignment or Change of Control, and (b) such assignee or transferee agrees in writing to assume the obligations to the Institutions and HHMI that are being assigned or transferred. Failure of an assignee to agree to be bound by the terms hereof or failure of Juno to notify Institutions and provide copies of assignment documentation as specified above shall be grounds for termination of Juno's sublicense under the applicable Harvard-Broad License(s) with respect to Juno's rights under the applicable Editas Licensed Background Patent(s) that are the subject of such Harvard-Broad License(s).

12.4.3 Additional Restrictions for MGH In-Licenses. Juno may assign or transfer the rights granted under this Agreement to Juno pursuant to the MGH License: (a) without the consent of MGH, to an Affiliate of Juno or in connection with the transfer or sale of all or substantially all of Juno's assets or business related to the Licensed Products and/or this Agreement, whether by merger, consolidation, sale of assets, change in control or other transaction, provided that Juno promptly shall provide MGH with a written notice of such assignment including the identity of the assignee or transferee and such assignee or transferee agrees in writing to assume the obligations to MGH that are being assigned or transferred; and (b) in any other circumstance, only with the prior written consent of MGH, such consent not to be unreasonably withheld, conditioned or delayed. Juno shall notify MGH in writing of any such assignment and provide a copy of the assignment and assumption agreement or other documentary evidence sufficient to demonstrate Juno's compliance with this Section 12.4.3 within [**] after such assignment. Failure of an assignee to agree to be bound by the terms hereof or failure of Juno to notify MGH and provide copies of assignment documentation shall be grounds for termination of Juno's sublicense under the MGH License with respect to Juno's rights under the applicable Editas Licensed Background Patent(s) that are the subject of the MGH License.

12.4.4 Assignment to Bristol-Myers Squibb. Editas hereby represents and warrants that, as of the Execution Date, it has notified each of the Institutions and MGH of the pending merger between Bristol-Myers Squibb Company (or its affiliate) and Celgene Corporation (or its affiliate), and no further consents on the part of the Institutions or MGH, and no further actions on the part of Juno or its successors, are required under the Harvard-Broad Licenses or the MGH Licenses in connection with any assignment of this Agreement as a result thereof; provided that within [**] after the effective date of such merger, Juno shall provide a signed notice with respect thereto to the Institutions and MGH.

12.5 Force Majeure. A Party shall not be liable for delay or failure in the performance of any of its obligations hereunder if such delay or failure is due to a cause beyond the reasonable control of such Party, including acts of God, fires, earthquakes, acts of war, terrorism, or civil unrest, or hurricane or other inclement weather ("**Force Majeure**"); provided, however, that the affected Party promptly notifies the other Party; provided, further, that the affected Party shall use its commercially reasonable efforts to avoid or remove such causes of non-performance and to mitigate the effect of such occurrence, and shall continue performance in accordance with the terms of this Agreement whenever such causes are removed. When such circumstances arise, the Parties shall negotiate in good faith any modifications of the terms of this Agreement that may be necessary or appropriate in order to arrive at an equitable solution.

12.6 Right to Develop Independently. Except as otherwise expressly set forth in this Agreement, including ARTICLE 5, nothing in this Agreement shall impair either Party's right to

independently acquire, license, develop for itself, or have others develop for it, IP and technology performing similar functions as the other Party's IP or to market and distribute products or services based on such other IP and technology.

12.7 Notices. Any notice required or permitted to be given by this Agreement shall be in writing and in English and shall be (a) delivered by hand or by overnight courier with tracking capabilities; (b) mailed postage prepaid by first class, registered, or certified mail; or (c) delivered by facsimile followed by delivery via either of the methods set forth in Section 12.7(a) or (b), in each case, addressed as set forth below unless changed by notice so given:

If to Juno:

Celgene Corporation
86 Morris Avenue
Summit, New Jersey 07901
U.S.A.
Attention: General Counsel
Facsimile: [**]

If to Editas:

Editas Medicine, Inc.
11 Hurley St
Cambridge, MA 02141
U.S.A.
Attention: Chief Executive Officer

With copies to (which shall not constitute notice):

Editas Medicine, Inc.
11 Hurley St
Cambridge, MA 02141
U.S.A.
Attention: Vice President, Legal

Wilmer Cutler Pickering Hale and Dorr LLP
60 State Street
Boston, MA 02109
Attention: Steven D. Barrett, Esq.

Any such notice shall be deemed given on the date received, except any notice received after 5:30 p.m. (in the time zone of the receiving party) on a Business Day or received on a non-Business Day shall be deemed to have been received on the next Business Day. A Party may add, delete, or change the person or address to which notices should be sent at any time upon written notice delivered to the other Parties in accordance with this Section 12.7.

12.8 Interpretation.

12.8.1 Generally. This Agreement has been diligently reviewed by and negotiated by and among the Parties, and in such negotiations each of the Parties has been represented by competent (in house or external) counsel, and the final agreement contained herein, including the language whereby it has been expressed, represents the joint efforts of the Parties and their counsel. Accordingly, in interpreting this Agreement or any provision hereof, no presumption shall apply against either Party as being responsible for the wording or drafting of this Agreement or any such provision, and ambiguities, if any, in this Agreement shall not be construed against either Party, irrespective of which Party may be deemed to have authored the ambiguous provision.

12.8.2 Definitions; Interpretation. The definitions of the terms herein shall apply equally to the singular and plural forms of the terms defined and where a word or phrase is defined herein, each of its other grammatical forms shall have a corresponding meaning. Whenever the context may require, any pronoun shall include the corresponding masculine, feminine, and neuter forms. Any capitalized term used but not otherwise defined herein shall have the meaning ascribed to such term in the Master Collaboration Agreement. The word "will" shall be construed to have the same meaning and effect as the word "shall". The words "including", "includes", "include", "for example" and "e.g." and words of similar import will be deemed to be followed by the words "without limitation". The word "or" shall be construed as the inclusive meaning identified with the phrase "and/or". The words "hereof", "herein" and "herewith" and words of similar import shall, unless otherwise stated, be construed to refer to this Agreement as a whole and not to any particular provision of this Agreement. Unless the context requires otherwise or as otherwise specifically provided, (a) all references herein to Articles, Sections, Schedules or Exhibits shall be construed to refer to Articles, Sections, Schedules and Exhibits of this Agreement and (b) reference in any Section to any subclauses are references to such subclauses of such Section.

12.8.3 Subsequent Events. Unless the context requires otherwise, (a) any definition of or reference to any agreement, instrument, or other document herein shall be construed as referring to such agreement, instrument, or other document as from time to time amended, supplemented, or otherwise modified (subject to any restrictions on such amendments, supplements, or modifications set forth herein); (b) any reference to any applicable Law herein shall be construed as referring to such applicable Law as from time to time enacted, repealed, or amended; and (c) any reference herein to any Person shall be construed to include the Person's successors and assigns (subject to Section 12.4).

12.8.4 Headings. Headings, captions and the table of contents are for convenience only and are not to be used in the interpretation of this Agreement.

12.8.5 Independent Significance. Although the same or similar subject matters may be addressed in different provisions of this Agreement, the Parties intend that, except as reasonably apparent on the face of the Agreement or as expressly provided in this Agreement, each such provision shall be read separately, be given independent significance and not be construed as limiting any other provision of this Agreement (whether or not more general or more specific in scope, substance or content).

12.9 Further Assurances. At any time or from time to time on and after the date of this Agreement, a Party shall at the written and reasonable request of the requesting Party: (a) deliver to the requesting Party such records, data or other documents consistent with the provisions of this Agreement; (b) execute, and deliver or cause to be delivered, all such consents, documents or further instruments of transfer or license; and (c) take or cause to be taken all such ministerial actions, as the requesting Party may reasonably deem necessary or desirable in order for the requesting Party to obtain the full benefits of this Agreement and the transactions contemplated hereby.

12.10 Severability. If any provision, or portion thereof, in this Agreement is held by a court of competent jurisdiction to be void, invalid or unenforceable to any extent, such holding shall not affect the validity or enforceability of the remaining terms and provisions hereof or the validity or enforceability of the invalid, void or unenforceable term or provision in any other situation or in any other jurisdiction, and the term or provision shall be considered severed from this Agreement solely for such situation and solely in such jurisdiction, unless the invalid, void or unenforceable term or provision is of such essential importance to this Agreement that it is to be reasonably assumed that the Parties would not have entered into this Agreement without the invalid, void or unenforceable term or provision. If the final judgment of such court declares that any term or provision hereof is invalid, void or unenforceable, the Parties agree to (a) reduce the scope, duration, area or applicability of the term or provision or to delete specific words or phrases to the minimum extent necessary to cause such term or provision as so reduced or amended to be enforceable; and (b) make a good faith effort to replace any invalid, void or unenforceable term or provision with a valid and enforceable one such that the objectives contemplated by the Parties when entering this Agreement may be realized.

12.11 Waiver. Any waiver, modification, release or amendment of any obligation under or of any provision of this Agreement or of a Party's rights or remedies under this Agreement must be in writing to be effective. Failure, neglect, or delay by a Party to enforce the provisions of this Agreement or its rights or remedies at any time, shall not be construed as a waiver of such Party's rights under this Agreement and shall not in any way affect the validity of the whole or any part of this Agreement or prejudice such Party's right to take subsequent action. No exercise or enforcement by either Party of any right or remedy under this Agreement shall preclude the enforcement by such Party of any other right or remedy under this Agreement or that such Party is entitled by Law to enforce.

12.12 Entire Agreement; Modification. This Agreement, together with the attached exhibits (including any and all Licensed Program Addendum) and schedules, and the Master Collaboration Agreement, as well as any amendments hereto or thereto made in accordance with the terms hereof or thereof, constitutes the entire understanding and agreement between the Parties with respect to the subject matter hereof and supersedes any and all prior and contemporaneous negotiations, representations, agreements, and understandings, written or oral, that the Parties may have reached with respect to the subject matter hereof. Except as otherwise expressly set forth herein this Agreement may not be altered, amended or modified in any way except by a writing (excluding email or similar electronic transmissions) signed by the authorized representatives of both Parties. In the event of a conflict between the provisions of this Agreement, the provisions

of the Master Collaboration Agreement, this Agreement shall control with respect to each Licensed Program, Licensed Program Target, Licensed RNP Complex and Licensed Product.

12.13 No Third Party Beneficiaries. Except as expressly set forth in this Agreement, there are no Third Party beneficiaries hereunder and the provisions of this Agreement are for the exclusive benefit of the Parties, and no other person or entity shall have any right or claim against either Party by reason of these provisions or be entitled to enforce any of these provisions against either Party.

12.14 Extension to Affiliates. Juno shall have the right to extend the rights, licenses, immunities and obligations granted in this Agreement to one or more of its Affiliates. All applicable terms and provisions of this Agreement shall apply to any such Affiliate to which this Agreement has been extended to the same extent as such terms and provisions apply to Juno. Juno shall remain fully liable for any acts or omissions of such Affiliates and for such Affiliates' performance and observance of all duties and obligations under this Agreement.

12.15 Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Any such counterpart, to the extent delivered by means of a fax machine or by .pdf, .tif, .gif, .jpeg or similar attachment to electronic mail (any such delivery, an "**Electronic Delivery**") shall be treated in all manner and respects as an original executed counterpart and shall be considered to have the same binding legal effect as if it were the original signed version thereof delivered in person. No Party hereto shall raise the use of Electronic Delivery to deliver a signature or the fact that any signature or agreement or instrument was transmitted or communicated through the use of Electronic Delivery as a defense to the formation of a contract, and each Party forever waives any such defense, except to the extent that such defense relates to lack of authenticity.

ARTICLE 13
OTHER TERMS RELATING TO IN-LICENSE AGREEMENTS

13.1 Indemnification under the Harvard-Broad Licenses. Notwithstanding the provisions of ARTICLE 10 to the contrary, the provisions of this Section 13.1 shall apply to Juno's obligation to indemnify Institution Indemnitees, MGH Indemnitees, MIT Indemnitees and HHMI Indemnitees:

13.1.1 Juno shall, and shall cause its Affiliates and Sublicensees to, indemnify, defend and hold harmless the Institution Indemnitees and MIT Indemnitees from and against any claim, suit, investigation, action, demand, judgment, liability, cost, expense, damage, deficiency, loss or obligation of any kind or nature (including reasonable attorneys' fees and other costs and expenses of litigation or defense), based upon, arising out of, or otherwise relating to Juno's or its Affiliates' or Designees' activities under this Agreement or any sublicense or subcontract by Juno hereunder, including any cause of action relating to product liability concerning any product, process, or service made, used, sold or performed by Juno its Affiliates or Designees pursuant to any right or license granted under this Agreement (collectively, "**Claims**") except to the extent any such Claim results from or arises out of the gross negligence or willful misconduct of an Institution Indemnitee or MIT Indemnitee seeking indemnification hereunder or material breach of the

applicable Harvard-Broad License by an Institution. Juno and each of its Affiliates and Sublicensees are referred to as "**Juno Indemnitor**" below.

13.1.2 Notification of Editas; Editas Right to Consent. In the event that a Juno Indemnitor receives notice of any Claim for which indemnification may be sought hereunder, Juno shall promptly, but no longer than [**] later, notify Editas of such Claim and as soon as reasonably practicable thereafter provide Editas with all documentation and information Juno Indemnitor may have in its possession with regard thereto. Neither Juno, nor any of its Affiliates or Sublicensees, may settle such Claim on terms that admit any liability on the part of Editas, impose any obligation on Editas, or diminish the rights of Editas without Editas' prior written consent, which may be given or withheld in Editas' sole discretion.

13.1.3 Procedures. With respect to any Claim for which indemnification is sought by an Institution Indemnitee or MIT Indemnitee pursuant to Section 13.1.1, Juno acknowledges and agrees that the provisions of such Harvard-Broad License (as in effect as of the Execution Date) relating to the procedures for indemnification shall apply as if such procedures were written in full herein, with the defined terms "Company" being deemed to refer to Juno, "Indemnitor" being deemed to refer to Juno and each of its Affiliates and Sublicensees and "Indemnitees" being deemed to refer to Institution Indemnitees and MIT Indemnitees.

13.1.4 HHMI Indemnity. HHMI Indemnitees shall be indemnified, defended by counsel acceptable to HHMI, and held harmless by Juno, from and against any Claim. The previous sentence shall not apply to any Claim that is determined with finality by a court of competent jurisdiction to result solely from the gross negligence or willful misconduct of an HHMI Indemnitee. Notwithstanding any other provision of this Agreement, Juno's obligation to defend, indemnify and hold harmless the HHMI Indemnitees under this paragraph shall not be subject to any limitation or exclusion of liability or damages or otherwise limited in any way.

13.1.5 MGH Indemnity. Juno shall indemnify, defend and hold harmless MGH Indemnitees against any Claim, except to the extent any such Claim results directly from the gross negligence or willful misconduct of an MGH Indemnitee. With respect to any Claim for which indemnification is sought by an MGH Indemnitee pursuant to this Section 13.1.5, Juno acknowledges and agrees that the provisions of such MGH License (as in effect as of the Execution Date) relating to the procedures for indemnification shall apply as if such procedures were written in full herein, with the defined terms "Company" being deemed to refer to Juno, "Hospital" being deemed to refer to MGH and "Indemnitee(s)" being deemed to refer to MGH Indemnitee(s).

13.1.6 Notwithstanding the foregoing provisions of this Section 13.1, (a) the Juno Indemnitors shall have no obligations to defend, indemnify or hold harmless any Institution Indemnitees, MGH Indemnitees, MIT Indemnitees and HHMI Indemnitees, if any Juno Indemnitors would have a claim for indemnification from Editas pursuant to Section 10.2 (in which case Editas shall be responsible for defending, indemnifying and holding harmless any Institution Indemnitees, MGH Indemnitees, MIT Indemnitees and HHMI Indemnitees, and the Juno Indemnitors shall be entitled to seek indemnification in accordance with Section 10.2) and (b) the provisions of Section 10.5 shall apply.

13.2 Use of Names. Except as provided in this Section 13.2, Juno shall not, and shall ensure that its Affiliates and Sublicensees shall not, use or register the name "The Broad Institute, Inc.," "Wyss Institute for Biologically Inspired Engineering at Harvard University," "President and Fellows of Harvard College," "Massachusetts Institute of Technology," "Lincoln Laboratory," "The Rockefeller University," "University of Tokyo," "TODAI TLO, Ltd.," "Wageningen University," "Wageningen University & Research," "University of Iowa Research Foundation," "University of Iowa," "The General Hospital Corporation," "Massachusetts General Hospital," "MGH," [**] "GenEdit," or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify such Persons or any of such Persons' schools, units, divisions or affiliates or any trustee, director, officer, staff member, employee, student or other agent of such Person ("**Institution Names**") for any purpose in connection with this Agreement, except as required by applicable Law or otherwise with the prior written approval of, and in accordance with restrictions required by, such Person. Juno further agrees, except as required by applicable Law or as otherwise provided below in this Section 13.2, not to use any Institution Names for any purpose in connection with this Agreement except with the prior written approval of, and in accordance with the restrictions required by, the applicable counterparty. Without limiting the foregoing, Juno shall, and shall ensure that its Affiliates and Sublicensees shall cease all use of Institution Names in connection with this Agreement as permitted under this Agreement on the termination or expiration of this Agreement except as required by applicable Law or otherwise approved in writing by the applicable counterparty, as applicable. This restriction shall not apply to any information required by Law to be disclosed to any governmental entity. In connection with this Agreement, except as required by applicable Law, Juno shall not use or register the name "Howard Hughes Medical Institute" or any variation, adaptation, or abbreviation thereof (alone or as part of another name) or any logos, seals, insignia or other words, names, symbols or devices that identify HHMI or any unit of HHMI ("**HHMI Names**") or of any HHMI employee (including [**]) in a manner that reasonably could constitute an endorsement of a commercial product or service; but that use for other purposes, even if commercially motivated, is permitted provided that (1) the use is limited to accurately reporting factual events or occurrences, and (2) any reference to an HHMI Name or any HHMI employees (including [**]) in press releases or similar materials intended for public release is approved by HHMI in advance.

13.3 Intended Third Party Beneficiaries.

13.3.1 Juno acknowledges and agrees that for so long as the Editas IP includes Editas IP licensed by Editas from Institutions under the applicable Foundational In-License:

(a) solely with respect to IP licensed to Editas under the Cas9-I Agreement, Harvard and Broad are intended third party beneficiaries of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification and insurance provisions of this Agreement with respect thereto; and HHMI, MIT and Rockefeller are intended third party beneficiaries of this Agreement for the purpose of enforcing HHMI's and MIT's respective rights with respect thereto, including indemnification and insurance provisions, under this Agreement as required by the Cas9-I Agreement;

(b) solely with respect to the IP licensed to Editas under the Cas9-II Agreement, Broad is an intended third party beneficiary of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification and insurance provisions of this Agreement with respect thereto; and Broad, Harvard, MIT and Iowa are intended third party beneficiaries of this Agreement for the purpose of enforcing Broad's, Harvard's, MIT's and Iowa's respective rights with respect thereto, including indemnification and insurance provisions, under this Agreement as required by the Cas9-II Agreement; and

(c) solely with respect to the IP licensed to Editas under the Cpf1 Agreement, Broad is an intended third party beneficiary of this Agreement for the purpose of enforcing all patent challenge, indemnification, and insurance provisions of this Agreement with respect thereto, and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification and insurance provisions of this Agreement with respect thereto; and Broad, Harvard, MIT, UTokyo and Wageningen are intended third party beneficiaries of this Agreement for the purpose of enforcing Broad's, Harvard's, MIT's, UTokyo's and Wageningen's respective rights with respect thereto, including indemnification and insurance provisions, under this Agreement as required by the Cpf1 Agreement.

13.3.2 Juno acknowledges and agrees that for so long as the Editas IP includes Editas IP licensed by Editas from MGH under the 2014 MGH Agreement or 2016 MGH Agreement, then solely with respect to the IP licensed to Editas under the 2014 MGH Agreement or 2016 MGH Agreement, MGH is an intended third party beneficiary of this Agreement for the purpose of enforcing all Patent Rights challenge, indemnification, and insurance provisions of this Agreement with respect thereto and enforcing the right to terminate this Agreement for breach of the patent challenge, indemnification or insurance provisions of this Agreement with respect thereto.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be duly executed by their authorized representatives as of the Execution Date.

EDITAS MEDICINE, INC.		JUNO THERAPEUTICS, INC.	
By:	/s/ Cynthia Collins	By:	/s/ Gary Henningson
Name:	Cynthia Collins	Name:	Gary Henningson
Title:	President and CEO	Title:	VP and Treasurer

EDITAS MEDICINE, INC.

Severance Benefits Plan

1. Establishment of Plan. Editas Medicine, Inc., a Delaware corporation (the "Company"), hereby establishes an unfunded severance benefits plan (the "Plan") that is intended to be a welfare benefit plan within the meaning of Section 3(1) of ERISA. The Plan is in effect for Covered Employees who experience a Covered Termination occurring after the Effective Date and before the termination of this Plan. This Plan supersedes any and all (i) severance plans and separation policies applying to Covered Employees that may have been in effect before the Effective Date with respect to any termination that would, under the terms of this Plan, constitute a Covered Termination and (ii) the provisions of any agreements between any Covered Employee and the Company that provide for severance benefits solely as such agreements relate to severance benefits.

2. Purpose. The purpose of the Plan is to establish the conditions under which Covered Employees will receive the severance benefits described herein if employment with the Company (or its successor in a Change in Control (as defined below)) terminates under the circumstances specified herein. The severance benefits paid under the Plan are intended to assist employees in making a transition to new employment and are not intended to be a reward for prior service with the Company.

3. Definitions. For purposes of this Plan,

(a) "Base Salary" shall mean, for any Covered Employee, such Covered Employee's base rate of pay as in effect immediately before a Covered Termination (or prior to the Change of Control, if greater) and exclusive of any bonuses, overtime pay, shift differentials, "adders," any other form of premium pay, or other forms of compensation.

(b) "Benefits Continuation" shall have the meaning set forth in Section 8(a) hereof.

(c) "Board" shall mean the Board of Directors of the Company.

(d) "Cause" shall mean any of: (a) your conviction of, or plea of guilty or nolo contendere to, any crime involving dishonesty or moral turpitude or any felony; or (b) a good faith finding by the Company's Board of Directors that you have (i) engaged in dishonesty, willful misconduct or gross negligence that has a material adverse effect on the Company, (ii) committed an act that materially injures or would reasonably be expected to materially injure the reputation, business or business relationships of the Company, (iii) materially breached the terms of any restrictive covenants or confidentiality agreement with the Company (and not cured same within any cure period applicable to such covenants or confidentiality agreement); or (iv) failed or refused to comply in any material respect with the Company's material policies or procedures and

in a manner that materially injures or would reasonably be expected to materially injure the reputation, business or business relationships of the Company, provided that in the case of (iv) that you were given written notice of such violation or failure by the Board and a period of 30 days to cure (provided that the Board reasonably determines that such violation or failure is curable).

(e) "Change in Control" shall mean the occurrence of any of the following events, provided that such event or occurrence constitutes a change in the ownership or effective control of the Company, or a change in the ownership of a substantial portion of the assets of the Company, as defined in Treasury Regulation §§1.409A-3(i)(5)(v), (vi) and (vii): (i) the acquisition by an individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934 (the "Exchange Act")) (a "Person") of beneficial ownership of any capital stock of the Company if, after such acquisition, such Person beneficially owns (within the meaning of Rule 13d-3 under the Exchange Act) 50% or more of either (x) the then-outstanding shares of common stock of the Company (the "Outstanding Company Common Stock") or (y) the combined voting power of the then-outstanding securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this subsection (i), the following acquisitions shall not constitute a Change in Control: (1) any acquisition directly from the Company or (2) any acquisition by any entity pursuant to a Business Combination (as defined below) which complies with clauses (x) and (y) of subsection (iii) of this definition; or (ii) a change in the composition of the Board that results in the Continuing Directors (as defined below) no longer constituting a majority of the Board (or, if applicable, the Board of Directors of a successor corporation to the Company), where the term "Continuing Director" means at any date a member of the Board (x) who was a member of the Board on the date of the initial adoption of the Plan by the Board or (y) who was nominated or elected subsequent to such date by at least a majority of the directors who were Continuing Directors at the time of such nomination or election or whose election to the Board was recommended or endorsed by at least a majority of the directors who were Continuing Directors at the time of such nomination or election; provided, however, that there shall be excluded from this clause (y) any individual whose initial assumption of office occurred as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents, by or on behalf of a person other than the Board; or (iii) the consummation of a merger, consolidation, reorganization, recapitalization or share exchange involving the Company or a sale or other disposition of all or substantially all of the assets of the Company (a "Business Combination"), unless, immediately following such Business Combination, each of the following two conditions is satisfied: (x) all or substantially all of the individuals and entities who were the beneficial owners of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than 50% of the then-outstanding shares of common stock and the combined voting power of the then-outstanding securities entitled to vote generally in the election of directors, respectively, of the resulting or acquiring corporation in such Business Combination (which shall include, without limitation, a corporation which as a result of such transaction owns the Company or substantially all of the Company's assets either directly or through one or

more subsidiaries) (such resulting or acquiring corporation is referred to herein as the "Acquiring Corporation") in substantially the same proportions as their ownership of the Outstanding Company Common Stock and Outstanding Company Voting Securities, respectively, immediately prior to such Business Combination and (y) no Person (excluding any employee benefit plan (or related trust) maintained or sponsored by the Company or by the Acquiring Corporation) beneficially owns, directly or indirectly, 50% or more of the then-outstanding shares of common stock of the Acquiring Corporation, or of the combined voting power of the then-outstanding securities of such corporation entitled to vote generally in the election of directors (except to the extent that such ownership existed prior to the Business Combination); or (iv) the liquidation or dissolution of the Company.

(f) "Change in Control Termination" shall mean a termination of the Covered Employee's employment by the Company without Cause or by the Covered Employee for Good Reason, in either case within the twelve (12) months following a Change in Control.

(g) "COBRA" shall mean the Consolidated Omnibus Budget Reconciliation Act.

(h) "Code" shall mean the Internal Revenue Code of 1986, as amended.

(i) "Company" shall mean Editas Medicine, Inc. or, following a Change in Control, any successor thereto.

(j) "Covered Employees" shall mean all Regular Full-Time Employees (both exempt and non-exempt) who are (i) Executives or (ii) otherwise designated by the Board or by an authorized committee to be a Covered Employee under this Plan, who experience a Covered Termination and who are not designated as ineligible to receive severance benefits under the Plan as provided in Section 5 hereof. For the avoidance of doubt, neither Temporary Employees nor Part-Time Employees are eligible for severance benefits under the Plan. An employee's full-time, part-time or temporary status for the purpose of this Plan is determined by the Plan Administrator upon review of the employee's status immediately before termination. Any person who is classified by the Company as an independent contractor or third party employee is not eligible for severance benefits even if such classification is modified retroactively.

(k) "Covered Termination" shall mean (i) Non-Change in Control Termination or (ii) a Change in Control Termination.

(l) "Effective Date" shall mean December 10, 2015.

(m) "ERISA" shall mean the Employee Retirement Income Security Act of 1974, as amended.

(n) "Executive" shall mean any employee of the Company holding the title of Vice President or above.

(o) "Good Reason" is defined as: (i) a material diminution in the employee's base compensation; (ii) a material diminution in the employee's authority, duties, or responsibilities; (iii) a material change in the geographic location at which the employee must perform the services; or (iv) any other action or inaction that constitutes a material breach by the Company of any agreement under which the employee provides services; provided, however, that in any case the employee has not consented to the condition which would otherwise give rise to a Good Reason. In order to establish a "Good Reason" for terminating employment, an employee must provide written notice to the Company of the existence of the condition giving rise to the Good Reason, which notice must be provided within 90 days of the initial existence of such condition, the Company must fail to cure the condition within 30 days thereafter, and an employee's termination of employment must occur no later than one year following the initial existence of the condition giving rise to Good Reason.

(p) "Non-Change in Control Termination" shall mean a termination of the Covered Employee's employment by the Company without Cause prior to or more than twelve (12) months following a Change in Control.

(q) "Other C-Level Officer" shall mean the Chief Financial Officer, the Chief Operating Officer, the Chief Technology Officer and any other officer of the Company reporting directly to the Chief Executive Officer or otherwise designated by the Board as an Other C-Level Officer for purposes of the Plan.

(r) "Part-Time Employees" shall mean employees who are not Regular Full-Time Employees and are treated as such by the Company.

(s) "Participants" shall mean Covered Employees.

(t) "Plan Administrator" shall have the meaning set forth in Section 14 hereof.

(u) "Release" shall have the meaning set forth in Section 6 hereof.

(v) "Release Effective Date" shall have the meaning set forth in Section 13(c)(i) hereof.

(w) "Regular Full-Time Employees" shall mean employees, other than Temporary Employees, normally scheduled to work at least 30 hours a week unless the Company's local practices, as from time to time in force, whether or not in writing, establish a different hours threshold for regular full-time employees.

(x) "Severance Pay" shall have the meaning set forth in Section 7 hereof.

(y) "Severance Period" shall mean the applicable severance period determined under the chart in Section 7 hereof based on the type of Covered Termination and the Title/ Role of the Covered Employee.

(z) "Temporary Employees" are employees treated as such by the Company,

whether or not in writing.

4. Coverage. A Covered Employee may be entitled to receive severance benefits under the Plan if such employee experiences a Covered Termination. In order to receive severance benefits under the Plan, Covered Employees must meet the eligibility and other requirements provided below in Sections 5 and 6 of the Plan.

5. Eligibility for Severance Benefits. The following employees will *not* be eligible for severance benefits, except to the extent specifically determined otherwise by the Plan Administrator: (a) an employee who is terminated for Cause; (b) an employee who retires, terminates employment as a result of an inability to performs his duties due to physical or mental disability or dies; (c) an employee who voluntarily terminates his employment, except, in the case of a Covered Termination for Good Reason; (d) an employee who is employed for a specific period of time in accordance with the terms of a written employment agreement; and (e) an employee who promptly becomes employed by another member of the controlled group of entities of which the Company (or its successor in the Change in Control) is a member as defined in Sections 414(b) and (c) of Code.

6. Release; Timing of Severance Benefits. Receipt of any severance benefits under the Plan requires that the Covered Employee execute and deliver a severance and release of claims agreement in a form prescribed by the Company (which will include, at a minimum, a release of all releasable claims, non-disparagement and cooperation obligations, a reaffirmation of continuing obligations under the Restrictive Covenant Agreements, and an agreement, to the extent permitted by law, not to compete with the Company for twelve (12) months following separation from employment with the Company) (the "Release"), which Release becomes binding within 60 days following the Covered Employee's termination of employment. The Severance Pay will be paid in accordance with the terms of the Plan and the Company's regular pay practices in effect from time to time and the Benefits Continuation will be paid in the amount and at the time premium payments are made by other participants in the Company's health benefit plans with the same coverage. The payments, which at all times are subject to the Covered Employee's compliance with the Covered Employee's continuing obligations under the Release, shall be made or commence on the first payroll date after the Release Effective Date.

7. Cash Severance. A Covered Employee entitled to severance benefits under this Plan shall be entitled to the continuation of such employee's monthly Base Salary for the Severance Period indicated below ("Severance Pay"), based upon his or her title/role.

Title/ Role of Covered Employee	**Non-Change in Control Termination Severance Period**	**Change in Control Termination Severance Period**
Chief Executive Officer	Twelve (12) months	Twelve (12) months
Other C-Level Officer or Senior Vice	Twelve (12) months	Twelve (12) months

President		
Vice President	Six (6) months	Nine (9) months

For purposes of this Section 7 and Section 8 below, a Covered Employee's title/role shall be such employee's title/role immediately prior to the Covered Termination or, if such employee's title/role was changed in connection with the Change in Control, immediately prior to the Change in Control.

8. Other Severance Benefits. In addition to the foregoing Severance Pay, the severance benefits under the Plan shall include the following benefits:

(a) Company contributions to the cost of COBRA coverage on behalf of the Covered Employee and any applicable dependents for no longer than the Covered Employee's applicable Severance Period if the Covered Employee elects COBRA coverage, and only so long as such coverage continues in force. Such costs shall be determined on the same basis as the Company's contribution to Company-provided health and dental insurance coverage in effect for an active employee with the same coverage elections; provided that if the Covered Employee commences new employment and is eligible for a new group health plan, the Company's continued contributions toward health and dental coverage shall end when the new employment begins ("Benefits Continuation").

(b) Any unpaid annual bonus in respect to any completed bonus period which has ended prior to the date of the Participant's Covered Termination and which the Board deems granted to the Participant in its discretion pursuant to the Company's contingent compensation program, payable at the same time as annual bonuses are paid to other employees of the Company or, if later, upon the Release Effective Date.

(c) In the case of a Change in Control Termination, a bonus amount equal to the multiple of (i) a fraction the numerator of which is the Severance Period and the denominator of which is twelve (12) and (ii) the Covered Employee's target annual bonus for the year of the Change in Control Termination, payable in a lump sum on the Release Effective Date.

9. Equity Awards. In the case of a Change in Control Termination, any unvested equity awards shall become fully vested and exercisable, or free from forfeiture or repurchase, effective upon the Release Effective Date. Except as set forth in the foregoing sentence, the treatment of a Covered Employee's equity awards with the Company upon a Covered Termination shall be dictated by the terms of the applicable award agreements.

10. Recoupment. If a Covered Employee fails to comply with the terms of the Plan, including the provisions of Section 6 above, the Company may require payment to the Company of any benefits described in Sections 7 and 8 above that the Covered Employee has already received to the extent permitted by applicable law and with the "value" determined in the sole discretion of the Plan Administrator. Payment is due in cash or by check within 10 days after the

Company provides notice to a Covered Employee that it is enforcing this provision. Any benefits described in Sections 7 and 8 above not yet received by such Covered Employee will be immediately forfeited.

11. Death. If a Participant dies after the date of his or her Covered Termination but before all payments or benefits to which such Participant is entitled pursuant to the Plan have been paid or provided, payments will be made to any beneficiary designated by the Participant prior to or in connection with such Participant's Covered Termination or, if no such beneficiary has been designated, to the Participant's estate. For the avoidance of doubt, if a Participant dies during such Participant's applicable Severance Period, Benefits Continuation will continue for the Participant's applicable dependents for the remainder of the Participant's Severance Period.

12. Withholding. The Company may withhold from any payment or benefit under the Plan: (a) any federal, state, or local income or payroll taxes required by law to be withheld with respect to such payment; (b) such sum as the Company may reasonably estimate is necessary to cover any taxes for which the Company may be liable and which may be assessed with regard to such payment; and (c) such other amounts as appropriately may be withheld under the Company's payroll policies and procedures from time to time in effect.

13. Section 409A. It is expected that the payments and benefits provided under this Plan will be exempt from the application of Section 409A of the Code, and the guidance issued thereunder ("Section 409A"). The Plan shall be interpreted consistent with this intent to the maximum extent permitted and generally, with the provisions of Section 409A. A termination of employment shall not be deemed to have occurred for purposes of any provision of this Plan providing for the payment of any amounts or benefits upon or following a termination of employment (which amounts or benefits constitute nonqualified deferred compensation within the meaning of Section 409A) unless such termination is also a "separation from service" within the meaning of Section 409A and, for purposes of any such provision of this Plan, references to a "termination," "termination of employment" or like terms shall mean "separation from service". Neither the Participant nor the Company shall have the right to accelerate or defer the delivery of any payment or benefit except to the extent specifically permitted or required by Section 409A.

Notwithstanding the foregoing, to the extent the severance payments or benefits under this Plan are subject to Section 409A, the following rules shall apply with respect to distribution of the payments and benefits, if any, to be provided to Participants under this Plan:

(a) Each installment of the payments and benefits provided under this Plan will be treated as a separate "payment" for purposes of Section 409A. Whenever a payment under this Plan specifies a payment period with reference to a number of days (*e.g.*, "payment shall be made within 10 days following the date of termination"), the actual date of payment within the specified period shall be in the Company's sole discretion. Notwithstanding any other provision of this Plan to the contrary, in no event shall any payment under this Plan that constitutes "non-qualified deferred compensation" for purposes of Section 409A be subject to transfer, offset, counterclaim or recoupment by any other amount unless otherwise permitted by Section 409A.

(b) Notwithstanding any other payment provision herein to the contrary, if the

Company or appropriately-related affiliates become publicly-traded and a Covered Employee is deemed on the date of termination to be a "specified employee" within the meaning of that term under Code Section 409A(a)(2)(B) with respect to such entity, then each of the following shall apply:

(i) With regard to any payment that is considered "non-qualified deferred compensation" under Section 409A payable on account of a "separation from service," such payment shall be made on the date which is the earlier of (A) the day following the expiration of the six month period measured from the date of such "separation from service" of the Covered Employee, and (B) the date of the Covered Employee's death (the "Delay Period") to the extent required under Section 409A. Upon the expiration of the Delay Period, all payments delayed pursuant to this provision (whether otherwise payable in a single sum or in installments in the absence of such delay) shall be paid to or for the Covered Employee in a lump sum, and all remaining payments due under this Plan shall be paid or provided for in accordance with the normal payment dates specified herein; and

(ii) To the extent that any benefits to be provided during the Delay Period are considered "non-qualified deferred compensation" under Section 409A payable on account of a "separation from service," and such benefits are not otherwise exempt from Section 409A, the Covered Employee shall pay the cost of such benefits during the Delay Period, and the Company shall reimburse the Covered Employee, to the extent that such costs would otherwise have been paid by the Company or to the extent that such benefits would otherwise have been provided by the Company at no cost to the Covered Employee, the Company's share of the cost of such benefits upon expiration of the Delay Period. Any remaining benefits shall be reimbursed or provided by the Company in accordance with the procedures specified in this Plan.

(c) To the extent that severance benefits pursuant to this Plan are conditioned upon a Release, the Covered Employee shall forfeit all rights to such payments and benefits unless such release is signed and delivered (and no longer subject to revocation, if applicable) within 60 days following the date of the termination of the Covered Employee's employment with the Company. If the Release is no longer subject to revocation as provided in the preceding sentence, then the following shall apply:

(i) To the extent any severance benefits to be provided are not "non-qualified deferred compensation" for purposes of Section 409A, then such benefits shall commence upon the first scheduled payment date immediately after the date the Release is executed and no longer subject to revocation (the "Release Effective Date"). The first such cash payment shall include all amounts that otherwise would have been due prior thereto under the terms of this Agreement applied as though such payments commenced immediately upon the termination of Covered Employee's employment with the Company, and any payments made after the Release Effective Date shall continue as provided herein. The delayed benefits shall in any event expire at the time such benefits would have expired had

such benefits commenced immediately following the termination of Covered Employee's employment with the Company.

(ii) To the extent any such severance benefits to be provided are "non-qualified deferred compensation" for purposes of Section 409A, then the Release must become irrevocable within 60 days of the date of termination and benefits shall be made or commence upon the date provided in Section 6, provided that if the 60th day following the termination of the Covered Employee's employment with the Company falls in the calendar year following the calendar year containing the date of termination, the benefits will be made no earlier than the first business day of that following calendar year. The first such cash payment shall include all amounts that otherwise would have been due prior thereto under the terms of this Agreement had such payments commenced immediately upon the termination of Covered Employee's employment with the Company, and any payments made after the first such payment shall continue as provided herein. The delayed benefits shall in any event expire at the time such benefits would have expired had such benefits commenced immediately following the termination of Covered Employee's employment with the Company.

(d) The Company makes no representations or warranties and shall have no liability to any Participant or any other person, other than with respect to payments made by the Company in violation of the provisions of this Plan, if any provisions of or payments under this Plan are determined to constitute deferred compensation subject to Section 409A of the Code but not to satisfy the conditions of that section.

14. Section 280G. Notwithstanding any other provision of this Plan, except as set forth in Section 14(b), in the event that the Company undergoes a "Change in Ownership or Control" (as defined below), the following provisions shall apply**:**

(a) The Company shall not be obligated to provide to the Covered Employee any portion of any "Contingent Compensation Payments" (as defined below) that the Covered Employee would otherwise be entitled to receive to the extent necessary to eliminate any "excess parachute payments" (as defined in Section 280G(b)(1) of the Code) for the Covered Employee. For purposes of this Section 14, the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Payments" and the aggregate amount (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-30 or any successor provision) of the Contingent Compensation Payments so eliminated shall be referred to as the "Eliminated Amount."

(b) Notwithstanding the provisions of Section 14(a), no such reduction in Contingent Compensation Payments shall be made if (1) the Eliminated Amount (computed without regard to this sentence) exceeds (2) 100% of the aggregate present value (determined in accordance with Treasury Regulation Section 1.280G-1, Q/A-31 and Q/A-32 or any successor provisions) of the amount of any additional taxes that would be incurred by the Covered Employee if the Eliminated Payments (determined without regard to this sentence) were paid to the Covered

Employee (including state and federal income taxes on the Eliminated Payments, the excise tax imposed by Section 4999 of the Code payable with respect to all of the Contingent Compensation Payments in excess of the Covered Employee's "base amount" (as defined in Section 280G(b)(3) of the Code), and any withholding taxes). The override of such reduction in Contingent Compensation Payments pursuant to this Section 14(b) shall be referred to as a "Section 14(b) Override." For purpose of this paragraph, if any federal or state income taxes would be attributable to the receipt of any Eliminated Payment, the amount of such taxes shall be computed by multiplying the amount of the Eliminated Payment by the maximum combined federal and state income tax rate provided by law.

(c) For purposes of this Section 14 the following terms shall have the following respective meanings:

(i) "Change in Ownership or Control" shall mean a change in the ownership or effective control of the Company or in the ownership of a substantial portion of the assets of the Company determined in accordance with Section 280G(b)(2) of the Code.

(ii) "Contingent Compensation Payment" shall mean any payment (or benefit) in the nature of compensation that is made or made available (under this Agreement or otherwise) to a "disqualified individual" (as defined in Section 280G(c) of the Code) and that is contingent (within the meaning of Section 280G(b)(2)(A)(i) of the Code) on a Change in Ownership or Control of the Company.

(d) Any payments or other benefits otherwise due to the Covered Employee following a Change in Ownership or Control that could reasonably be characterized (as determined by the Company) as Contingent Compensation Payments (the "Potential Payments") shall not be made until the dates provided for in this Section 14(d). Within thirty (30) days after each date on which the Covered Employee first become entitled to receive (whether or not then due) a Contingent Compensation Payment relating to such Change in Ownership or Control, the Company shall determine and notify the Covered Employee (with reasonable detail regarding the basis for its determinations) (1) which Potential Payments constitute Contingent Compensation Payments, (2) the Eliminated Amount and (3) whether the Section 14(b) Override is applicable. Within thirty (30) days after delivery of such notice to the Covered Employee, the Covered Employee shall deliver a response to the Company (the "Covered Employee Response") stating either (A) that the Covered Employee agrees with the Company's determination pursuant to the preceding sentence or (B) that the Covered Employee disagrees with such determination, in which case the Covered Employee shall set forth (x) which Potential Payments should be characterized as Contingent Compensation Payments, (y) the Eliminated Amount, and (z) whether the Section 14(b) Override is applicable. In the event that the Covered Employee fails to deliver an Covered Employee Response on or before the required date, the Company's initial determination shall be final. If the Covered Employee states in the Covered Employee Response that the Covered Employee agrees with the Company's determination, the Company shall make the Potential Payments to the Covered Employee within three (3) business days following delivery to the Company of the Covered Employee Response (except for any Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). If the Covered Employee states in the Covered Employee Response that the Covered Employee disagree with the Company's determination, then, for a

period of sixty (60) days following delivery of the Covered Employee Response, the Covered Employee and the Company shall use good faith efforts to resolve such dispute. If such dispute is not resolved within such 60-day period, such dispute shall be settled exclusively by arbitration in Boston, Massachusetts, in accordance with the rules of the American Arbitration Association then in effect. Judgment may be entered on the arbitrator's award in any court having jurisdiction. The Company shall, within three (3) business days following delivery to the Company of the Covered Employee Response, make to the Covered Employee those Potential Payments as to which there is no dispute between the Company and the Covered Employee regarding whether they should be made (except for any such Potential Payments which are not due to be made until after such date, which Potential Payments shall be made on the date on which they are due). The balance of the Potential Payments shall be made within three (3) business days following the resolution of such dispute.

(e) The Contingent Compensation Payments to be treated as Eliminated Payments shall be determined by the Company by determining the "Contingent Compensation Payment Ratio" (as defined below) for each Contingent Compensation Payment and then reducing the Contingent Compensation Payments in order beginning with the Contingent Compensation Payment with the highest Contingent Compensation Payment Ratio. For Contingent Compensation Payments with the same Contingent Compensation Payment Ratio, such Contingent Compensation Payment shall be reduced based on the time of payment of such Contingent Compensation Payments with amounts having later payment dates being reduced first. For Contingent Compensation Payments with the same Contingent Compensation Payment Ratio and the same time of payment, such Contingent Compensation Payments shall be reduced on a pro rata basis (but not below zero) prior to reducing Contingent Compensation Payment with a lower Contingent Compensation Payment Ratio. The term "Contingent Compensation Payment Ratio" shall mean a fraction the numerator of which is the value of the applicable Contingent Compensation Payment that must be taken into account by the Covered Employee for purposes of Section 4999(a) of the Code, and the denominator of which is the actual amount to be received by the Covered Employee in respect of the applicable Contingent Compensation Payment. For example, in the case of an equity grant that is treated as contingent on the Change in Ownership or Control because the time at which the payment is made or the payment vests is accelerated, the denominator shall be determined by reference to the fair market value of the equity at the acceleration date, and not in accordance with the methodology for determining the value of accelerated payments set forth in Treasury Regulation Section 1.280G-1 Q/A-24(b) or (c)).

(f) The provisions of this Section 14 are intended to apply to any and all payments or benefits available to the Covered Employee under this Plan or any other agreement or plan of the Company under which the Covered Employee receives Contingent Compensation Payments.

15. Plan Administration.

(a) **Plan Administrator**. The Plan Administrator shall be the Board or a committee thereof designated by the Board (the "Committee"); provided, however, that the Board or such Committee may in its sole discretion appoint a new Plan Administrator to administer the Plan following a Change in Control. The Plan Administrator shall also serve as the Named Fiduciary of the Plan under ERISA. The Plan Administrator shall be the "administrator" within the meaning of Section 3(16) of ERISA and shall have all the

responsibilities and duties contained therein.

The Plan Administrator can be contacted at the following address:

Editas Medicine, Inc.
300 Third Street
First Floor
Cambridge, MA 02142

(b) **Decisions, Powers and Duties**. The general administration of the Plan and the responsibility for carrying out its provisions shall be vested in the Plan Administrator. The Plan Administrator shall have such powers and authority as are necessary to discharge such duties and responsibilities which also include, but are not limited to, interpretation and construction of the Plan, the determination of all questions of fact, including, without limit, eligibility, participation and benefits, the resolution of any ambiguities and all other related or incidental matters, and such duties and powers of the plan administration which are not assumed from time to time by any other appropriate entity, individual or institution. The Plan Administrator may adopt rules and regulations of uniform applicability in its interpretation and implementation of the Plan.

The Plan Administrator shall discharge its duties and responsibilities and exercise its powers and authority in its sole discretion and in accordance with the terms of the controlling legal documents and applicable law, and its actions and decisions that are not arbitrary and capricious shall be binding on any employee, and employee's spouse or other dependent or beneficiary and any other interested parties whether or not in being or under a disability.

16. Indemnification. To the extent permitted by law, all employees, officers, directors, agents and representatives of the Company shall be indemnified by the Company and held harmless against any claims and the expenses of defending against such claims, resulting from any action or conduct relating to the administration of the Plan, whether as a member of the Committee or otherwise, except to the extent that such claims arise from gross negligence, willful neglect, or willful misconduct.

17. Plan Not an Employment Contract. The Plan is not a contract between the Company and any employee, nor is it a condition of employment of any employee. Nothing contained in the Plan gives, or is intended to give, any employee the right to be retained in the service of the Company, or to interfere with the right of the Company to discharge or terminate the employment of any employee at any time and for any reason. No employee shall have the right or claim to benefits beyond those expressly provided in this Plan, if any. All rights and claims are limited as set forth in the Plan.

18. Severability. In case any one or more of the provisions of this Plan (or part thereof) shall be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions hereof, and this Plan shall be construed as if such invalid, illegal or unenforceable provisions (or part thereof) never had been

contained herein.

19. Non-Assignability. No right or interest of any Covered Employee in the Plan shall be assignable or transferable in whole or in part either directly or by operation of law or otherwise, including, but not limited to, execution, levy, garnishment, attachment, pledge or bankruptcy.

20. Integration With Other Pay or Benefits Requirements. The severance payments and benefits provided for in the Plan are the maximum benefits that the Company will pay to Covered Employees on a Covered Termination, except to the extent otherwise specifically provided in a separate agreement. To the extent that the Company owes any amounts in the nature of severance benefits under any other program, policy or plan of the Company that is not otherwise superseded by this Plan, or to the extent that any federal, state or local law, including, without limitation, so-called "plant closing" laws, requires the Company to give advance notice or make a payment of any kind to an employee because of that employee's involuntary termination due to a layoff, reduction in force, plant or facility closing, sale of business, or similar event, the benefits provided under this Plan or the other arrangement shall either be reduced or eliminated to avoid any duplication of payment. The Company intends for the benefits provided under this Plan to partially or fully satisfy any and all statutory obligations that may arise out of an employee's involuntary termination for the foregoing reasons and the Company shall so construe and implement the terms of the Plan.

21. Amendment or Termination. The Board may amend, modify, or terminate the Plan at any time in its sole discretion; provided, however, that (a) any such amendment, modification or termination made prior to a Change in Control that adversely affects the rights of any Covered Employee shall be unanimously approved by the Company's Board of Directors, (b) no such amendment, modification or termination may affect the rights of a Covered Employee then receiving payments or benefits under the Plan without the consent of such person, and (c) no such amendment, modification or termination made after a Change in Control shall be effective for one year. The Board intends to review the Plan at least annually.

22. Governing Law. The Plan and the rights of all persons under the Plan shall be construed in accordance with and under applicable provisions of ERISA, and the regulations thereunder, and the laws of the Commonwealth of Massachusetts (without regard to conflict of laws provisions) to the extent not preempted by federal law.

Exhibit 10.30

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm to the Company, if publicly disclosed. Double asterisks denote omissions.

November 18, 2019

Editas Medicine, Inc.
11 Hurley Street
Cambridge, MA 02141
Attn.: Cynthia Collins, CEO

Re: Treating [**] as Co-Exclusive Target; Treatment of Co-Exclusive Targets

Dear Cynthia,

This letter agreement ("**Letter Agreement**") is entered into as of the date provided above (the "**Effective Date**") by and between, on the one hand, the President and Fellows of Harvard College, an educational and charitable corporation existing under the laws and the constitution of the Commonwealth of Massachusetts, having a place of business at Smith Campus Center, Suite 727, 1350 Massachusetts Avenue, Cambridge, MA 02138 ("**Harvard**") and The Broad Institute, Inc., a non-profit Massachusetts corporation, with a principal office at 415 Main Street, Cambridge, MA 02142 ("**Broad**," together with Harvard, the "**Institutions**" and each individually, an "**Institution**") and, on the other hand, Editas Medicine, Inc., a Delaware corporation, with a principal office at 11 Hurley Street, Cambridge, MA 02141 ("**Company**"). Company and the Institutions are each referred to herein as a "**Party**" and together, the "**Parties**."

Reference is hereby made to (a) that certain Amended and Restated Cas9-I License Agreement by and between, on the one hand, Harvard and Broad and, on the other hand, Company, dated as of October 29, 2014, and amended and restated as of December 16, 2016 (the "**Cas9-I Agreement**"), (b) that certain Cas9-II License Agreement by and between Broad and Company, dated as of December 16, 2016 (the "**Cas9-II Agreement**") and (c) that certain Cpf1 License Agreement by and between Broad and Company, dated as of December 16, 2016 (the "**Cpf1 Agreement**" and, collectively with the Cas9-I Agreement and the Cas9-II Agreement, the "**Agreements**" and each individually, an "**Agreement**").

The Parties acknowledge that on December 7, 2018, the Company received a Proposed Product Notice for a product directed at the gene target [**] (the "**[**] Notice**"). The Institutions desire to have products covered or enabled by the Patent Rights (as defined in each Agreement) developed and commercialized to benefit the public and the Company desires to adjust its obligations with respect to the gene target [**] and the other Co-Exclusive Targets under the Agreements. Therefore, the Parties desire to waive the provisions of Sections 2.6 of the Agreements with respect to the [**] Notice, designate an additional Co-Exclusive Target under the Agreements and make other adjustments regarding the treatment of Co-Exclusive Targets as set forth herein.

The Parties hereby agree as follows:

1. Notwithstanding anything to the contrary in the Agreements, as of the Effective Date, [**] shall be added to the schedule of Excluded Targets under each Agreement and shall be deemed to be a Co-Exclusive Target under each Agreement.

2. Notwithstanding anything to the contrary in the Agreements, solely with respect to Proposed Products for which the Gene Target is a Co-Exclusive Target for which Broad or (solely with respect to the Cas9-I Agreement) Broad and Harvard have granted or have indicated to Company an intention to grant to a Third Party a license under the applicable Patent Rights in the applicable Field, the Quiet Period under each Agreement shall be deemed to be in effect until March 15, 2021. For the avoidance of doubt, the foregoing applies only with respect to the mechanism set forth in Section 2.6 of each Agreement, and does not restrict any other rights of Broad or Harvard under each Agreement, including Broad's or Broad's and Harvard's, as applicable, right to grant a Third Party a license under any of the Patent Rights licensed under any Agreement in the applicable Field with respect to products directed to a Co-Exclusive Target.

3. Notwithstanding anything to the contrary in the Agreements, following the Effective Date, with respect to running royalties on Net Sales of products, the royalty rates and terms set forth in Exhibit A shall apply in place of the royalty rates and terms set forth in the tables in Section 4.5.1.1 and Section 4.5.1.2 of the Cas9-I and Cas9-II Agreements and Section 4.4.1.1 and Section 4.4.1.2 of the Cpf1 Agreement solely with respect to Licensed Products and Enabled Products under one or more of the Agreements that are (a) products for prevention or treatment of human disease and (b) directed to a Co-Exclusive Target ((a) and (b) collectively "**Co-Exclusive Products**"). For clarity, a single royalty based on the rates set forth in Exhibit A shall be due for each Co-Exclusive Product regardless of whether Patent Rights covering such Co-Exclusive Product are licensed under one or more of the Agreements.

4. Notwithstanding anything to the contrary in the Agreements, following the Effective Date, the royalty offset provisions of Section 4.5.2.1 of the Cas9-I and Cas9-II Agreements and Section 4.4.2.1 of the Cpf1 Agreement shall not apply to any Co-Exclusive Products and Company shall be entitled to offset royalties owed to the Institutions for Co-Exclusive Products as set forth in Section 4.5.2.3 of the Cas9-I and Cas9-II Agreements and Section 4.4.2.3 of the Cpf1 Agreement.

5. Notwithstanding the foregoing paragraphs 3 and 4, solely with respect to Co-Exclusive Products, on an Agreement-by-Agreement and Co-Exclusive Target-by-Co-Exclusive Target basis, (a) if a Third Party co-exclusive licensee in the Field under the Patent Rights licensed to Company under an Agreement (or such Third Party's sublicensee under such Patent Rights) publicly discloses that it has initiated a research or development program that uses technology covered by such Patent Rights and is directed to one or more Co-Exclusive Targets (a "**Competing Program**"), then Company, Broad or, solely in case of the Cas9-I Agreement, Harvard may notify the other party(ies) to this Letter Agreement of such Competing Program or (b) if Company, Broad's Office of Strategic Alliances and Partnering or, solely in case of the Cas9-I Agreement, Harvard's Office of Technology Development (the "**Informed Party**") receives credible information that such co-exclusive licensee (or its sublicensee) has initiated a Competing Program directed to one or more Co-Exclusive Targets and such Competing Program has not been publicly disclosed, then the Informed Party shall notify the other party(ies) to this Letter Agreement of such Competing Program, in each case subject to the Informed Party's (and if the Informed Party is Broad's Office of Strategic Alliances and Partnering, then Broad's, and if the Informed Party is Harvard's Office of Technology Development, then Harvard's) confidentiality obligations to Third Parties (each such notice under the foregoing clauses (a) and (b), a "**Competing Program Notice**"). Upon a party's receipt of a Competing Program Notice, (i) the running royalties payable under Exhibit A and the milestones set forth in Sections 4.4.1 and 4.4.2 of the Cas9-I and Cas9-II Agreements and Sections 4.3.1 and 4.3.2 of the Cpf1 Agreement, as applicable, for Co-Exclusive Product(s) directed to the Co-Exclusive Target that is(are) the subject of such Competing Program Notice shall be reduced by [**] percent ([**]%) of the amounts otherwise payable under Exhibit A or

Sections 4.4.1 and 4.4.2 of the Cas9-I and Cas9-II Agreements and Sections 4.3.1 and 4.3.2 of the Cpf1 Agreement, as applicable, during the applicable Competing Program Term (as defined below), and (ii) if Company has made running royalty or milestone payments under the applicable Agreement with respect to such Co-Exclusive Products prior to the receipt of such Competing Program Notice, then Company shall be entitled to offset the foregoing deduction against future royalties or milestones payable under such Agreement with respect to such Co-Exclusive Products, as applicable, during the applicable Competing Program Term, subject to the terms of paragraph 6 below. Disputes arising under this paragraph 5 shall be referred to the Executive Officers pursuant to the Dispute resolution section of the applicable Agreement, and there shall be no reduction in royalties or milestones or credit pursuant to this paragraph 5 during the pendency of any such dispute.

"**Competing Program Term**" means, with respect to a Competing Program, the period beginning on the date of a party's receipt of the applicable Competing Program Notice and ending upon the earlier of the following: (a) the date on which the applicable Third Party publicly discloses that such Competing Program has ended, (b) the date on which an Informed Party receives credible information that such Competing Program has ended or (c) the date on which the applicable Third Party becomes an Affiliate of Company. In the event that Company is the "Informed Party" under the foregoing clause (b), Company shall promptly notify Broad and, if applicable, Harvard of the applicable credible information described in the foregoing clause (b).

6. Notwithstanding anything to the contrary in the Agreements or this Letter Agreement, on an Agreement-by-Agreement and product-by-product basis, at any time when Company is entitled to offset the running royalty payments payable under Exhibit A, with respect to a Co-Exclusive Product under both paragraph 5 above and any other royalty offset provision in an Agreement, in no event shall running royalty payments for such Co-Exclusive Product under Exhibit A be reduced such that Broad receives (or the Institutions or Payee Institutions receive, as applicable) running royalty payments at less than [**] percent ([**]%) of the applicable royalty rate set forth in Exhibit A.

7. In addition to the obligations set forth in Sections 11.3 of the Agreements, the Parties hereby agree that any public statement or press release issued by a Party regarding or mentioning the Co-Exclusive Targets shall (i) refer to the rights licensed by the Institutions with respect to such targets as co-exclusive under the Agreements and (ii) in no way represent that the Parties followed the Inclusive Innovation Model procedures as set forth in Sections 2.6 of the Agreements with regard to the gene target [**], unless the other Party has provided prior written approval otherwise after the Effective Date.

8. The Parties agree that, as of the Effective Date, all requirements, rights and obligations under Sections 2.6 of the Agreements with respect to the [**] Notice are hereby permanently and irrevocably waived.

9. All capitalized terms used herein and not otherwise defined shall have the meaning given to them in the applicable Agreement.

10. Except as explicitly set forth in this Letter Agreement, the Agreements remain unchanged and their terms and conditions and the rights and obligations of the Parties thereunder remain in full force and effect.

11. Except as otherwise set forth herein, this Letter Agreement may not be amended, waived or terminated without the written consent of both the Licensor Institutions and Company.

12. This Letter Agreement may not be assigned except in connection with an assignment of an Agreement in accordance with the terms thereof and solely with respect to the rights and obligations herein that relate to such Agreement.

13. This Letter Agreement shall be governed by, and construed in accordance with, the substantive laws of the Commonwealth of Massachusetts, without giving effect to any choice or conflict of law provision.

14. This Letter Agreement may be executed in three or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Once signed, any reproduction of this Letter Agreement made by reliable means (e.g., pdf, photocopy, facsimile) shall be considered an original.

(*Signature Page Follows*)

Sincerely,

/s/ Jesse Souweine
Jesse Souweine
Chief Operating Officer
The Broad Institute, Inc.

/s/ Isaac T. Kohlberg
Isaac T. Kohlberg
Senior Associate Provost and
Chief Technology Development Officer
Harvard University

Acknowledged and Agreed:

/s/ Cynthia Collins
Cynthia Collins
Chief Executive Officer
Editas Medicine, Inc.

EXHIBIT A

Royalty rates under the Agreements that are solely applicable to Licensed Products and Enabled Products that are (a) products for the prevention or treatment of human disease and (b) directed to a Co-Exclusive Target:

Licensed Products

Royalty Tiers	***Royalty Rate***
The portion of aggregate annual Net Sales up to and including [**] dollars ($[**])	[**]% of Net Sales by Company, its Affiliates, and Sublicensees
The portion of aggregate annual Net Sales greater than [**] dollars ($[**]) and less than [**] dollars ($[**])	[**]% of Net Sales by Company, its Affiliates, and Sublicensees
The portion of aggregate annual Net Sales greater than [**] dollars ($[**])	[**]% of Net Sales by Company, its Affiliates, and Sublicensees

Enabled Products

Royalty Tiers	***Royalty Rate***
The portion of aggregate annual Net Sales up to and including [**] dollars ($[**])	[**]% of Net Sales by Company, its Affiliates, and Sublicensees
The portion of aggregate annual Net Sales greater than [**] dollars ($[**]) and less than [**] dollars ($[**])	[**]% of Net Sales by Company, its Affiliates, and Sublicensees
The portion of aggregate annual Net Sales greater than [**] dollars ($[**])	[**]% of Net Sales by Company, its Affiliates, and Sublicensees

Adjustment for Group B Licensed Products and Group B Enabled Products: The above royalty rates shall be reduced by [**] percent ([**]%) for applicable products that both (i) are Group B Licensed Products or Group B Enabled Products under the Cas9-II Agreement and (ii) are not also Licensed Products or Enabled Products under the Cas9-I Agreement or Cpf1 Agreement, pursuant to the terms set forth in Section 4.5.1.3 of the Cas9-II Agreement.

11 Hurley Street
Cambridge, MA 02141
P 617-401-9000
F 617-494-0985

Exhibit 10.31

Certain identified information has been excluded from the exhibit because it is both (i) not material and (ii) would likely cause competitive harm to the Company, if publicly disclosed. Double asterisks denote omissions.

CONFIDENTIAL

December 16, 2019

The Broad Institute, Inc.
415 Main Street
Cambridge, MA 02142
Attn: Issi Rozen, Chief Business Officer

Office of Technology Development
Harvard University
Richard A. and Susan F. Smith Campus Center, Suite 727
1350 Massachusetts Avenue
Cambridge, MA 02138
Attn.: Isaac Kohlberg, Chief Technology Development Officer

Re: Amended and Restated Cas9-I License Agreement, by and between President and Fellows of Harvard College ("**Harvard**"), The Broad Institute, Inc. ("**Broad**") and Editas Medicine, Inc. ("**Editas**"), dated October 29, 2014, and amended and restated as of December 16, 2016 (as amended, the "**Cas9-I Agreement**"); Cpf1 License Agreement, by and between Broad and Editas, dated December 16, 2016 (the "**Cpf1 Agreement**"); and Cas9-II License Agreement, by and between Broad and Editas, dated December 16, 2016 (the "**Cas9-II Agreement**" and collectively, with the Cas9-I Agreement and the Cpf1 Agreement, each as may be amended and/or restated from time to time, the "**License Agreements**") – Sublicense Income

Dear Issi and Isaac,

The purpose of this letter (the "**Letter**") is to memorialize certain understandings among Harvard, Broad, and Editas as to certain provisions of the License Agreements regarding sublicensing income. All capitalized terms used in this Letter that are not defined in this Letter shall have their respective meanings as set forth in the License Agreements.

Flow Through of Financial Obligations in Sublicense Agreements

Harvard and Broad each hereby acknowledges and agrees that if (A) Editas sublicenses or has sublicensed any of the rights licensed to Editas under any of the License Agreements to a third party, (B) the applicable Sublicense includes milestone payment obligation(s) that are triggered by the achievement of milestone(s) based on objective criteria that are materially similar as a Milestone Event(s) criteria for Milestone Payment(s) under an applicable License Agreement or such Milestone Payment obligation(s) under an applicable License Agreement are flowed through to the applicable Sublicensee (each, a "**Comparable Milestone**"), (C) such Sublicense includes payment obligation(s) with respect to such Comparable Milestones requiring the Sublicensee to make a milestone payment to Editas or a Milestone Payment(s) to Harvard and/or Broad, as required under the applicable License Agreements, either directly or through Editas and (D) such Comparable

Milestone(s) are achieved and the Sublicensee either pays Broad and/or Harvard (as applicable) directly or pays Editas or one of its Affiliates and Editas pays Broad and/or Harvard (as applicable) for the applicable Milestone Payment(s) (the "**Sublicense Milestone Payment**"), then Editas shall not be required to pay the portion of Sublicense Income that may otherwise be deemed to arise from the Sublicense Milestone Payment to the extent the Sublicense Milestone Payment is either (I) paid directly to Harvard and/or Broad or (II) received by Editas or its Affiliate and Editas pays Broad and/or Harvard (as applicable) for the applicable Milestone Payment(s). For illustrative purposes of clause (B) of the prior sentence, the [**] would be materially similar to the [**]. For clarity, Editas would remain obligated to pay Harvard and/or Broad the applicable portion of Sublicense Income arising from any portion of a Sublicense Milestone Payment that exceeds the comparable Milestone Payment under the applicable License Agreement. For further clarity, in the event there are Sublicense Milestone Payments under more than one Sublicense for the same Comparable Milestone and the same product or service that is triggering such Comparable Milestone, this exclusion of the Sublicense Milestone Payments from Sublicense Income may only be taken up to the total amount of the Milestone Payment, in the aggregate, owed to Harvard and/or Broad with respect to such Comparable Milestone. For example, if Editas sublicenses rights under the Cas9-I Agreement to a Sublicensee and such Sublicense includes a milestone requiring the sublicensee to pay Editas $75,000 upon [**] (which is a Comparable Milestone as to a Milestone Event under the Cas9-I Agreement, and under the Cas9-I Agreement such Milestone Event triggers a $60,000 Milestone Payment obligation of Editas to Harvard and Broad), then Editas would be required to pay Broad and Harvard, in accordance with the applicable allocation of consideration provision in the Cas9-I Agreement, (x) $60,000 for the achievement of such Milestone Event, plus (y) the applicable Sublicense Income rate (for purposes of this example, assume that the applicable rate is 15%) multiplied by the incremental $15,000 of such Sublicense Milestone Payment that exceeds $60,000, or $2,250, that Editas or its Affiliate receives from the such Sublicensee in connection with the achievement of the Comparable Milestone for a total payment of $62,250. In the foregoing example, Editas would not be required to pay an additional 15% of the first $60,000 of the $75,000 Sublicense Milestone Payment as a Sublicense Income payment.

Additionally, Harvard and Broad each hereby acknowledge and agree that if Editas includes or has included payment obligations in a Sublicense that specifically require a Sublicensee to pay all or a portion of the annual license maintenance fees and/or patent reimbursement costs that, in each case, Editas is required to pay to Harvard and/or Broad with respect to such fees or costs under any of the License Agreements, then Editas shall not be required to pay to Broad and/or Harvard the portion of Sublicense Income that may otherwise be deemed to arise from such fees or costs paid by such sublicensee (I) to the extent such payments are equal to or less than the amounts owed by Editas to Broad and Harvard under the applicable License Agreement, (II) such payments are actually paid to Broad and Harvard, and (III) in the event such payments are required under more than one Sublicense for the same requirement under the applicable License Agreements, this exclusion from Sublicense Income may only be taken to the extent Editas or its sublicensee pays Harvard and/or Broad such fees, e.g. if a License Agreement has annual fees of $100,000 and Editas has two Sublicenses under which Editas receives a total of $150,000 and pays Harvard and/or Broad $100,000 for such annual fee therefrom, Editas will still have $50,000 of Sublicense Income.

Sublicense Income and Reimbursement of Future Patent Expenses and Allocated Past Patent Expenses

Each of Editas, Harvard and Broad acknowledges and agrees that, on a License Agreement-by-License Agreement basis, in the event Editas enters into or has entered into a Sublicense and Editas or any of its Affiliates receives any Sublicense Income and there is no specific allocation as to such Sublicense Income in such Sublicense with respect to reimbursement for patent costs, then Editas shall be entitled to deduct from such Sublicense Income received by Editas after the date of this Letter any amounts paid to Broad or Harvard, respectively, under the applicable License Agreements, as reimbursement of patent costs incurred by Broad or Harvard after the date of this Letter with respect to rights licensed to Editas under such License Agreements to

the extent not previously deducted and provided that no such deduction shall reduce the amount of such Sublicense Income by greater than [**] percent ([**]%) of what it would have been absent such deduction.

Each of Editas, Harvard and Broad acknowledges and agrees that, on a License Agreement-by-License Agreement basis, in the event Editas enters into or has entered into a Sublicense and Editas or any of its Affiliates receives any Sublicense Income and there is a specific allocation as to such Sublicense Income in such Sublicense with respect to reimbursement for patent costs, then Editas shall be entitled to deduct such specifically-allocated amount from such Sublicense Income received by Editas after the date of this Letter to the extent not previously deducted the amounts paid to Broad or Harvard, respectively, under the applicable License Agreements as reimbursement of patent costs incurred by Broad or Harvard in accordance with such allocation, regardless of whether Broad or Harvard incurred such fees prior to or after the date of this Letter.

We request that an authorized signatory on behalf of Harvard and Broad kindly sign a copy of this Letter acknowledging receipt of this Letter and the acceptance of the terms contemplated hereby.

Please contact me if you have any questions.

Sincerely,

EDITAS MEDICINE, INC.

By: /s/ Cynthia Collins
Name: Cynthia Collins
Title: Chief Executive Officer
Date: December 16, 2019

Acknowledged and agreed by:

THE BROAD INSTITUTE, INC.

By: /s/ Issi Rozen
Name: Issi Rozen
Title: CBO
Date: December 17, 2019

PRESIDENT AND FELLOWS OF HARVARD COLLEGE

By: /s/ Isaac T. Kohlberg
Name: Isaac T. Kohlberg
Title: Senior Associate Provost, Chief Technology Development Officer; Office of Technology Development, Harvard University
Date: December 17, 2019

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statements (Form S-3 No. 333-216528, 333-222266, and 333-223596) of Editas Medicine, Inc.,

(2) Registration Statement (Form S-8 No. 333-209351) pertaining to the Editas Medicine, Inc. 2013 Stock Incentive Plan, 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan, and

(3) Registration Statements (Form S-8 Nos. 333-216445, 333-223529 and 333-230266) pertaining to the 2015 Stock Incentive Plan and 2015 Employee Stock Purchase Plan;

of our reports dated February 26, 2020, with respect to the consolidated financial statements of Editas Medicine, Inc. and the effectiveness of internal control over financial reporting of Editas Medicine, Inc., included in this Annual Report (Form 10-K) of Editas Medicine, Inc. for the year ended December 31, 2019.

/s/ Ernst & Young LLP

Boston, Massachusetts
February 26, 2020

Exhibit 31.1

CERTIFICATIONS

I, Cynthia Collins, certify that:

1. I have reviewed this Annual Report on Form 10-K of Editas Medicine, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2020

By: /s/ Cynthia Collins
Cynthia Collins
Chief Executive Officer

Principal Executive Officer

Exhibit 31.2

CERTIFICATIONS

I, Michelle Robertson, certify that:

1. I have reviewed this Annual Report on Form 10-K of Editas Medicine, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 26, 2020

By: /s/ Michelle Robertson
Michelle Robertson
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

**CERTIFICATIONS OF CEO AND CFO PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with this Annual Report on Form 10-K of Editas Medicine, Inc. (the "Company") for the year ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company hereby certifies, pursuant to 18 U.S.C. (section) 1350, as adopted pursuant to (section) 906 of the Sarbanes-Oxley Act of 2002, that to the best of her or his knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 26, 2020

By: /s/ Cynthia Collins
Cynthia Collins
President and Chief Executive Officer

By: /s/ Michelle Robertson
Michelle Robertson
Chief Financial Officer