Halozyme

Annual Report 2019

Dear Fellow Shareholders:

2019 was a defining year for Halozyme.

As I reflect back, I am very grateful for the tremendous energy and focus of our Halozyme team. Our key goals for the year were to deliver strong revenue growth and clinical progress in our ENHANZE® business and conclude our HALO-301 PEGPH20 clinical trial, with plans to submit for regulatory review assuming positive data. While the negative results of HALO-301 were disappointing, the closing of the oncology program opens a new, bright chapter for Halozyme, with ENHANZE® as our foundation.

In this year's letter I want to tell the story of the planning and execution by the Halozyme team and the Board of Directors that resulted in us being ready to take decisive action no matter the outcome of HALO-301.

The key goals aligned with our two-pillar strategy, which we established in 2014 based on the promise of rHuPH20, our proprietary enzyme. rHuPH20 provided us with multiple avenues for value creation at that time, and we chose to focus our efforts on our investigational new drug PEGPH20 and the ENHANZE® drug delivery technology. We believed these two assets had the highest potential to meaningfully impact patients' lives and to create long-term value for our shareholders, while also moving us toward our long-term vision of building a leading biotechnology company.

Pursuing a new drug for pancreas cancer is not for the faint of heart as the odds of success are low, but we knew our scientific rationale for doing so was strong. Informed by the promising Phase 2 data for PEGPH20, we initiated the definitive test for the drug with the Phase 3 HALO-301 study in 2016.

At the same time, the ENHANZE® drug delivery technology was gaining momentum with multiple new collaboration agreements and more products in clinical testing. The highly leverageable ENHANZE® business model, with its increasing projected revenues, provided a clear path to sustained company profitability as a stand-alone business.

Our strategy was clear. We communicated to investors that in the event we were not successful with PEGPH20, we would restructure the company, halt oncology drug development, and focus on our ENHANZE® business. In parallel, and consistent with our Core Value to "Respect and Value the Team", we communicated the same strategy to employees, with this open communication occurring frequently at our All Hands meetings throughout 2018 and 2019.

I want to take a moment and acknowledge our amazing Halozyme employees and their extraordinary commitment during this time. With an incredible passion for our science and the desire to impact pancreas cancer, they maintained a laser-like focus on execution, even as they knew of the possibility of a company restructuring and potential loss of employment.

Our cross-functional PEGPH20 team was fully prepared to execute the plan to get PEGPH20 to patients as quickly as possible. The HALO-301 study database was locked in September and analyzed in industry-leading time and to the very highest standards. Most sections of the Biologics License Application (BLA) were already completed and ready for submission at that time. The plans for US and EU launches were also finalized and ready to execute.

While we were planning for a positive data scenario, prudent business planning called for us to be fully ready for action in the event of negative data. A small, dedicated group of leaders began meeting in 2019 to determine the structure needed for an ENHANZE®-only business and the communication plans we would act on immediately if the data was negative.

Throughout the year, the management team and Board of Directors met to discuss the scenarios and tested and updated the communications plans. The Board supported a commitment to pay out the employee performance bonus, prorated for the number of months worked, and a communication to employees to alleviate that concern given the expectation of data before year-end. An additional committee was formed to discuss and provide feedback on management's recommendation to implement a capital return plan if we found ourselves in a negative data scenario.

In the end, we did receive negative data and faced the hard task of restructuring the company. As a result of our detailed and careful planning, and our transparent and proactive communication, we were able to execute the restructuring immediately. This allowed us to provide clarity to our investors and our employees on the day of the data announcement. While the news was incredibly disappointing for our employees, many expressed appreciation for the transparency of the strategy, the speed at which their employment status was communicated and for the individualized letters, that provided those affected with a summary of their severance, benefits and the outplacement services that would be available to them.

I am very proud of the entire Halozyme organization.

I have always been an advocate of scenario planning and transparent communication with all stakeholders. The experience of the last year has reinforced this belief; with more people under the tent, aware and engaged in planning, a successful outcome is more likely. For the management team and I this experience only reinforces the importance of our values as we continue to build Halozyme. In particular:

- *We Respect and Value the Team; we will continue our commitment to openness, respect, and trust.*
- *We Focus on Patients/We Innovate; we will continue to make decisions with the patient at the forefront, as we did with the decision to restructure, with the goal of expanding the reach of ENHANZE® and impacting more patients' lives.*
- *We are all Empowered and Accountable; we will continue to scenario plan and demonstrate flexibility and team work to be prepared for and seize opportunities and overcome unforeseen events.*

With the restructuring complete and the oncology operations now closed, we are fully focused on ENHANZE®, having transformed into a technology platform company providing innovative and disruptive solutions with the goal of improving patient experience and outcomes.

I would like to share in more detail just a few highlights from the last year in our ENHANZE® business.

Connie Matsui, *Chair of the Board of Directors, and*
Helen Torley, *President and Chief Executive Officer*

We began 2019 with a new global collaboration and license agreement with argenx SE - our first agreement with a development stage biotechnology company. This achievement was followed by additional successes, including:

• Janssen's announcement of positive data from its Phase 3 COLUMBA study, which investigated subcutaneously administered DARZALEX® (daratumumab) in comparison to intravenous DARZALEX® in patients with relapsed and refractory multiple myeloma;

• Janssen's subsequent US and EU regulatory submissions for the subcutaneous delivery of DARZALEX® based on this data and other clinical studies;

• argenx's first clinical dosing for ARGX-113 (efgartigimod), which occurred just five months after the signing of our global collaboration and license agreement;

• Roche announcement of positive data from its global phase III FeDeriCa study, which investigated a fixed-dose combination of pertuzumab (Perjeta®) and trastuzumab (Herceptin®) for subcutaneous administration using ENHANZE® in combination with intravenous chemotherapy, which was subsequently presented at the San Antonio Breast Cancer Symposium; and

• The initiation of Phase 1 studies with four new ENHANZE® co-formu-lated products:

- *argenx's efgartigimod*
- *Roche's (ocrelizumab) Ocrevus®*
- *Bristol-Myers Squibb's relatlimab*
- *One undisclosed program with an existing, unnamed partner*

ENHANZE® continues to be the go-to technology for converting intravenously-administered therapeutics to therapeutics that can be delivered subcutaneously. We are seeing more of our partners begin to use this technology much earlier in their drug development processes as they realize its potential for reduced treatment burden and healthcare costs and, increasingly, the benefits it may offer for competitive differentiation. Among these new potential differentiating benefits are:

• The potential for a lower rate of infusion-related reactions as was observed with DARZALEX® SC in the COLUMBA Phase 3 study when compared to the rate observed with DARZALEX® IV.

• The potential for new pricing approaches, for example, for those combining two biologics with ENHANZE®.

• The ability to facilitate the administration of treatment in lower cost settings such as the physician office or the community setting. Janssen, as an example, has stated DARZALEX® SC supports their strategy to seek to expand treatment into the community setting.

• The ability to simplify administration by moving from a fixed dose versus weight-based dosing. This has been demonstrated with Rituxan Hycela® (rituximab / hyaluronidase human) and has been observed with DARZALEX® SC too.

We project a bright future for ENHANZE®. Our operating model is lean, scalable, and leverageable. We project sustainable profitability beginning in 2020 and strong growth in revenue in the coming years.

We also anticipate a number of value-driving events in 2020 across our ENHANZE® partners, resulting from our expanding portfolio. With three commercial-stage products utilizing our ENHANZE® drug delivery technology today, we have an additional two products pending approval and launch this year: Janssen's DARZALEX® SC and Roche's fixed-dose subcutaneous combination of Perjeta® and Herceptin®. Another 14 products are expected to be in Phase I, II, or III of development by the end of 2020.

• DARZALEX® SC is a promising treatment for patients suffering from multiple myeloma that offers a strong value proposition—reducing injection time from 4-6 hours with intravenous administration to just 5 minutes with subcutaneous administration utilizing ENHANZE®. We anticipate Janssen will receive feedback and potential approvals from the US Food Drug Administration (FDA) and European Medicines Agency (EMA) this year and will mobilize a strong effort to launch the drug following approvals.

• Roche's fixed-dose combination of Perjeta® and Herceptin® is the first such combination of two therapeutic antibodies as a fixed-dose subcutaneous formulation utilizing ENHANZE® in a single injection, thereby providing patients with HER2-positive breast cancer the possibility of a faster treatment option. Regulatory filings are completed in the US and EU and we anticipate the potential for FDA approval and launch by Roche in 2020.

I am energized and inspired about the future that lies ahead for Halozyme with our ENHANZE® business.

We remain confident that our high-growth, high-margin ENHANZE® business model will lead to new partnership agreements over time and will also provide us with a strong foundation for potential future platform acquisition consistent with our mission to provide innovative and disruptive solutions with the goal of impact patients experience and outcomes.

Our scenario planning and transparency enabled us to rapidly and strategically shift the company's focus following the disappointing HALO-301 trial results. This decisive action led to value creation for our shareholders and built trust across all stakeholders.

None of this would have been possible without the strength of our core technology, the dedication and commitment of the entire Halozyme team, the Board of Directors and our strong shareholder base.

In closing, I want to express my deepest gratitude to every member of our Halozyme team and the Board for their tireless work in 2019.

I also want to offer my appreciation to our shareholders for their continued trust, patience, and support as we move forward with a growing and sustainably profitable company.

Best regards,

Helen Torley

HELEN TORLEY, M.B. Ch. B., M.R.C.P.
PRESIDENT & CEO

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

FORM 10-K

☒ **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 001-32335

HALOZYME THERAPEUTICS, INC.

(*Exact name of registrant as specified in its charter*)

Delaware	**88-0488686**
(State or other jurisdiction of incorporation or organization)	*(I.R.S. Employer Identification No.)*
11388 Sorrento Valley Road **San Diego** **CA** *(Address of principal executive offices)*	**92121** *(Zip Code)*

(858) 794-8889
(Registrant's telephone number, including area code)

Securities registered under Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common Stock, $0.001 Par Value	HALO	The NASDAQ Stock Market, LLC

Securities registered under 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 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 emerging growth company. See the 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 Exchange Act). ☐ Yes ☒ No

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2019 was approximately $2.5 billion based on the closing price on the NASDAQ Global Select Market reported for such date. Shares of common stock held by each officer and director and by each person who is known to own 10% or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates of the registrant. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock, par value $0.001 per share, was 138,226,070 as of February 14, 2020.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement to be filed subsequent to the date hereof with the Securities and Exchange Commission pursuant to Regulation 14A in connection with the registrant's 2020 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report.

HALOZYME THERAPEUTICS, INC.

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This Annual Report on Form 10-K contains "forward-looking statements" within the meaning of the "safe harbor" provisions of Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended. All statements, other than statements of historical fact, included herein, including without limitation those regarding our future product development and regulatory events and goals, product collaborations, our business intentions and financial estimates and anticipated results, are, or may be deemed to be, forward-looking statements. Words such as "expect," "anticipate," "intend," "plan," "believe," "seek," "estimate," "think," "may," "could," "will," "would," "should," "continue," "potential," "likely," "opportunity," "project" and similar expressions or variations of such words are intended to identify forward-looking statements, but are not the exclusive means of identifying forward-looking statements in this Annual Report. Additionally, statements concerning future matters such as the development or regulatory approval of new partner products, enhancements of existing products or technologies, timing and success of launch of new products by our collaborators, third party performance under key collaboration agreements, revenue, expense and cash burn levels, anticipated profitability and expected trends, expected repayment of the Royalty backed Loan and trends and other statements regarding matters that are not historical are forward-looking statements.

Although forward-looking statements in this Annual Report reflect the good faith judgment of our management, such statements can only be based on facts and factors currently known by us. Consequently, forward-looking statements are inherently subject to risks and uncertainties and actual results and outcomes may differ materially from the results and outcomes discussed in or anticipated by the forward-looking statements. Factors that could cause or contribute to such differences in results and outcomes include without limitation those discussed under the heading "Risk Factors" in Part I, Item 1A below, as well as those discussed elsewhere in this Annual Report. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We undertake no obligation to revise or update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report. Readers are urged to carefully review and consider the various disclosures made in this Annual Report, which attempt to advise interested parties of the risks and factors that may affect our business, financial condition, results of operations and prospects.

References to "Halozyme," "the Company," "we," "us," and "our" refer to Halozyme Therapeutics, Inc. and its wholly owned subsidiary, Halozyme, Inc., and Halozyme, Inc.'s wholly owned subsidiaries, Halozyme Holdings Ltd., Halozyme Royalty LLC, Halozyme Switzerland GmbH and Halozyme Switzerland Holdings GmbH. References to "Notes" refer to the Notes to Consolidated Financial Statements included herein (refer to Part II, Item 8).

PART I

Item 1. *Business*

Overview

Halozyme Therapeutics Inc. is a biopharma technology platform company that provides innovative and disruptive solutions with the goal of improving patient experience and outcomes. Our proprietary enzyme rHUPH20 is used to facilitate the delivery of injected drugs and fluids. We license our technology to biopharmaceutical companies to collaboratively develop products that combine our ENHANZE® drug delivery technology with the collaborators' proprietary compounds.

Our approved product and our collaborators' approved products and product candidates are based on rHuPH20, our patented recombinant human hyaluronidase enzyme. rHuPH20 is the active ingredient in our first commercially approved product, *Hylenex*® recombinant (hyaluronidase human injection) (Hylenex), and it works by breaking down hyaluronan (or HA), a naturally occurring carbohydrate that is a major component of the extracellular matrix in tissues throughout the body such as skin and cartilage. This temporarily increases dispersion and absorption allowing for improved subcutaneous delivery of injectable biologics, such as monoclonal antibodies and other large therapeutic molecules, as well as small molecules and fluids. We refer to the application of rHuPH20 to facilitate the delivery of other drugs or fluids as our ENHANZE® Drug Delivery Technology (ENHANZE). We license the ENHANZE technology to form collaborations with biopharmaceutical companies that develop or market drugs requiring or benefiting from injection via the subcutaneous route of administration. In the development of proprietary intravenous (IV) drugs combined with our ENHANZE technology, data have been generated supporting the potential for ENHANZE to reduce treatment burden, as a result of shorter duration of subcutaneous (SC) administration. ENHANZE may enable fixed-dose SC dosing compared to weight-based dosing required for IV administration, and potentially allow for lower rates of infusion related reactions. Lastly, certain proprietary drugs co-formulated with ENHANZE have been granted additional exclusivity, extending the patent life of the product beyond the one of the proprietary IV drug.

We currently have ENHANZE collaborations with F. Hoffmann-La Roche, Ltd. and Hoffmann-La Roche, Inc. (Roche), Baxalta US Inc. and Baxalta GmbH (now members of the Takeda group of companies, following the acquisition of Shire plc by Takeda Pharmaceutical Company Limited in January 2019) (Baxalta), Pfizer Inc. (Pfizer), Janssen Biotech, Inc. (Janssen), AbbVie, Inc. (AbbVie), Eli Lilly and Company (Lilly), Bristol-Myers Squibb Company (BMS), Alexion Pharma Holding (Alexion) and ARGENX BVBA (argenx). We receive royalties from two of these collaborations, including royalties from sales of one product from the Baxalta collaboration and two products from the Roche collaboration. Future potential revenues from the sales and/or royalties of our approved products, product candidates, and ENHANZE collaborations will depend on the ability of Halozyme and our collaborators to develop, manufacture, secure and maintain regulatory approvals for approved products and product candidates and commercialize product candidates.

On November 4, 2019, we announced that our HALO-301 Phase 3 clinical study evaluating PEGylated recombinant human hyaluronidase (PEGPH20) in combination with ABRAXANE® (nab-paclitaxel) and gemcitabine as a first-line therapy for treatment of patients with metastatic pancreatic cancer failed to reach the primary endpoint of overall survival. The study failed to demonstrate an improvement in overall survival compared to gemcitabine and nab-paclitaxel alone (11.2 months median overall survival compared to 11.5 months, HR=1.00, p=0.9692). Due to the results of the study, we halted development activities for PEGPH20, closed our oncology operations and implemented an organizational restructuring to focus our operations on ENHANZE.

We closed all ongoing oncology clinical studies including the Phase 3 clinical testing for PEGPH20 with ABRAXANE and gemcitabine in stage IV pancreatic ductal adenocarcinoma ("PDA") (HALO-301) and the Phase 1b/2 clinical testing for PEGPH20 with Tecentriq in patients with cholangiocarcinoma and gall bladder cancer (HALO 110-101/MATRIX). The Roche -Genentech sponsored MORPHEUS PDA and gastric cancer studies closed the arms containing PEGPH20 to enrollment. All patients who were treated in PEGPH20 arms are off PEGPH20 treatment and are in follow up, per study protocol.

Our principal offices and research facilities are located at 11388 Sorrento Valley Road, San Diego, California 92121. Our telephone number is (858) 794-8889 and our e-mail address is *info@halozyme.com*. Our website address is *www.halozyme.com*. Information found on, or accessible through, our website is not a part of, and is not incorporated into, this Annual Report on Form 10-K. Our periodic and current reports that we filed with the SEC are available on our website at *www.halozyme.com*, free of charge, as soon as reasonably practicable after we have electronically filed such material with, or furnished them to, the SEC, including our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports.

Technology

rHuPH20 can be applied as a drug delivery platform to increase dispersion and absorption of other injected drugs and fluids potentially reducing treatment burden. For example, rHuPH20 has been used to convert drugs that must be delivered intravenously into subcutaneous injections or to reduce the number of subcutaneous injections needed for effective therapy. When ENHANZE technology is applied subcutaneously, the rHuPH20 acts locally and transiently, with a tissue half-life of less than 15 minutes. HA at the local site reconstitutes its normal density within a few days and, therefore, the effect of rHuPH20 on the architecture of the subcutaneous space is temporary.

Strategy

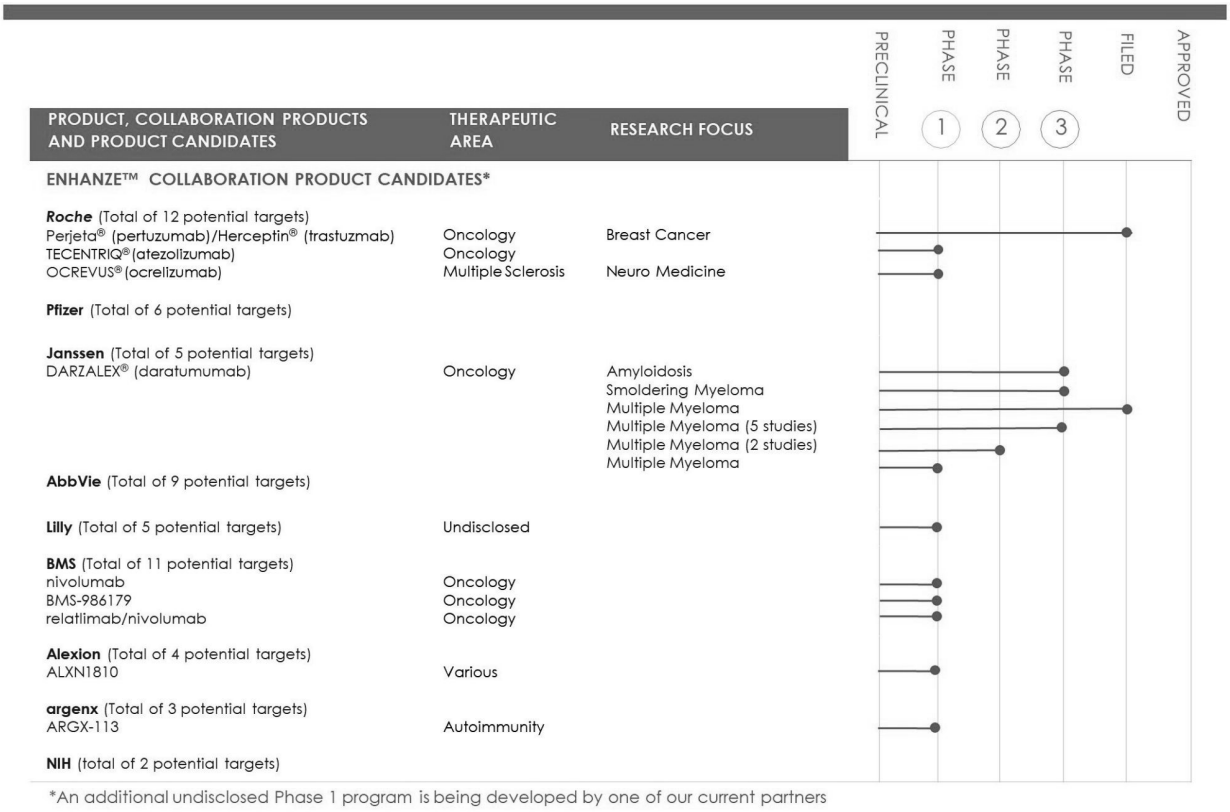
We currently have nine collaborations with three current product approvals and additional product candidates in development using our ENHANZE technology. We intend to work with our existing collaborators to expand our collaborations to add new targets and develop targets and product candidates under the terms of the operative collaboration agreements. We will also continue our efforts to enter into new collaborations to further derive additional value from our proprietary technology.

Product and Product Candidates

We currently have one marketed proprietary product and three marketed partnered products. The following table summarizes our proprietary product, marketed partnered products and product candidates under development with our collaborators:

PRODUCT, COLLABORATION PRODUCTS AND PRODUCT CANDIDATES	THERAPEUTIC AREA	APPROVED INDICATION	PRECLINICAL / PHASE 1 / PHASE 2 / PHASE 3 / FILED / APPROVED
PROPRIETARY APPROVED PRODUCT			
HYLENEX® recombinant (hyaluronidase human injection)	Various	Adjuvant for subcutaneous fluid delivery for dispersion & absorption of other injected drugs	U.S. Approved
ENHANZE™ COLLABORATION APPROVED PRODUCTS			
Roche			
Herceptin® SC (trastuzumab) (Outside the U.S.) Herceptin Hylecta™ (trastuzumab and hyaluronidase-oysk) (U.S.)	Oncology	Breast Cancer	Approved in the U.S., EU and other countries outside the U.S. (OUS).
MabThera® SC (rituximab) (Outside the U.S. and Canada) RITUXAN HYCELA™ (rituximab/hyaluronidase human) (U.S.) RITUXAN® SC (rituximab) (Canada)	Oncology	Multiple blood cancers	Approved for NHL in EU and OUS; Approved for CLL in EU and CA. Approved for DLBCL, CLL and FL in the U.S.
Baxalta			
HYQVIA® [Immune Globulin Infusion 10% (Human) with Recombinant Human Hyaluronidase]	Immunology	Primary Immunodeficiency	Approved for adults in U.S., EU and OUS; Pediatric indication approved in EU and OUS

All trademarks belong to their respective owners.



Proprietary Product

Hylenex Recombinant (hyaluronidase human injection)

Hylenex recombinant is a formulation of rHuPH20 that facilitates subcutaneous fluid administration for achieving hydration, to increase the dispersion and absorption of other injected drugs and, in subcutaneous urography, to improve resorption of radiopaque agents. Hylenex recombinant is currently the number one prescribed branded hyaluronidase.

ENHANZE Collaborations

Roche Collaboration

In December 2006, we and Roche entered into a collaboration and license agreement under which Roche obtained a worldwide license to develop and commercialize product combinations of rHuPH20 and up to thirteen Roche target compounds (the Roche Collaboration). Under this agreement, Roche elected a total of eight targets, two of which are exclusive.

In September 2013, Roche launched a subcutaneous (SC) formulation of Herceptin (trastuzumab) (Herceptin SC) in Europe for the treatment of patients with HER2-positive breast cancer followed by launches in additional countries. This formulation utilizes our ENHANZE technology and is administered in two to five minutes, compared to 30 to 90 minutes with the standard intravenous form. In September 2018, we announced that Roche received approval from Health Canada for Herceptin SC for the treatment of patients with HER2-positive breast cancer. In February 2019, we announced that Roche received approval from the FDA for Herceptin SC under the brand name Herceptin Hylecta™ (trastuzumab and hyaluronidase-oysk). In April 2019, Roche made Herceptin Hylecta available in the U.S.

Directed at the same target, Roche initiated a Phase 1 study of Perjeta® (pertuzumab) and Herceptin (trastuzumab) using ENHANZE technology in patients with early breast cancer in March 2016. In June 2018, Roche initiated a global Phase 3 study of a fixed-dose combination of Perjeta and Herceptin using ENHANZE technology in patients with HER2-positive early breast cancer. In August 2019, the global phase 3 study met its primary endpoint. The study results demonstrated non-inferior levels of Perjeta in the blood (pharmacokinetics) compared to standard intravenous (IV) infusion of Perjeta plus Herceptin and chemotherapy in patients with HER2-positive early breast cancer. The study also demonstrated that the safety profile of the fixed dose subcutaneous combination of Perjeta and Herceptin was consistent with the safety profile of Perjeta and Herceptin administered intravenously. In December 2019, the full data from the study was presented at the San Antonio Breast Cancer Symposium. Based on the results of this study, BLA and MAA submissions are expected to be completed in the first quarter of 2020.

In June 2014, Roche launched MabThera SC in Europe for the treatment of patients with common forms of non-Hodgkin lymphoma (NHL) followed by launches in additional countries. This formulation utilizes our ENHANZE technology and is administered in approximately five minutes compared to the approximately 1.5 to 4 hour intravenous infusion. In May 2016, Roche announced that the EMA approved Mabthera SC to treat patients with chronic lymphocytic leukemia (CLL). In June 2017, the FDA approved Genentech's RITUXAN HYCELA™, a combination of rituximab and rHuPH20 (approved and marketed under the MabThera SC brand in countries outside the U.S. and Canada), for CLL and two types of NHL, follicular lymphoma and diffuse large B-cell lymphoma. In March 2018, Health Canada approved a combination of rituximab and rHuPH20 (approved and marketed under the brand name RITUXAN® SC) for patients with CLL.

In September 2017, we and Roche entered into an agreement providing Roche the right to develop and commercialize one additional exclusive target using ENHANZE technology. The upfront license payment may be followed by event-based payments subject to Roche's achievement of specified development, regulatory and sales-based milestones. In addition, Roche will pay royalties to us if products under the collaboration are commercialized.

In October 2018, we entered into an agreement with Roche for the right to develop and commercialize one additional exclusive target and an option to select two additional targets within four years using our ENHANZE technology. The upfront license payment may be followed by event-based payments subject to Roche's achievement of specified development, regulatory and sales-based milestones. In addition, Roche will pay royalties to us if products under the collaboration are commercialized.

In December 2018, Roche initiated a Phase 1b/2 study in patients with non-small cell lung cancer for Tecentriq (atezolizumab) using ENHANZE technology. In August 2019, Roche initiated a Phase 1 study evaluating OCREVUS (ocrelizumab) with ENHANZE Technology in subjects with multiple sclerosis. In October 2019, Roche nominated a new undisclosed target to be studied using ENHANZE technology, triggering a $10 million milestone payment.

Baxalta Collaboration

In September 2007, we and Baxalta entered into a collaboration and license agreement under which Baxalta obtained a worldwide, exclusive license to develop and commercialize product combinations of rHuPH20 with GAMMAGARD LIQUID (HYQVIA) (the Baxalta Collaboration). HYQVIA is indicated for the treatment of primary immunodeficiency disorders associated with defects in the immune system.

In May 2013, the European Commission granted Baxalta marketing authorization in all EU Member States for the use of HYQVIA (solution for subcutaneous use) as replacement therapy for adult patients with primary and secondary immunodeficiencies. Baxalta launched HYQVIA in the first EU country in July 2013 and has continued to launch in additional countries.

In September 2014, HYQVIA was approved by the FDA for treatment of adult patients with primary immunodeficiency in the U.S. HYQVIA is the first subcutaneous immune globulin (IG) treatment approved for adult primary immunodeficiency patients with a dosing regimen requiring only one infusion up to once per month (every three to four weeks) and one injection site per infusion in most patients, to deliver a full therapeutic dose of IG. The FDA's approval of HYQVIA was a significant milestone for us as it represented the first U.S. approved BLA which utilizes our rHuPH20 platform.

In May 2016, Baxalta announced that HYQVIA received a marketing authorization from the European Commission for a pediatric indication, which was launched in Europe to treat primary and certain secondary immunodeficiencies.

Pfizer Collaboration

In December 2012, we and Pfizer entered into a collaboration and license agreement, under which Pfizer has the worldwide license to develop and commercialize products combining our rHuPH20 enzyme with Pfizer proprietary biologics directed to up to six targets in primary care and specialty care indications. Targets may be selected on an exclusive or non-exclusive basis. Pfizer has elected five targets and has returned two targets.

Janssen Collaboration

In December 2014, we and Janssen entered into a collaboration and license agreement, under which Janssen has the worldwide license to develop and commercialize products combining our rHuPH20 enzyme with Janssen proprietary biologics directed to up to five targets. Targets may be selected on an exclusive basis. Janssen has elected CD38 as the first target on an exclusive basis. In October 2017, Janssen initiated its first Phase 3 study of subcutaneous delivery of DARZALEX® (daratumumab), directed at CD38, using ENHANZE technology, in multiple myeloma patients. Janssen has initiated seven Phase 3 studies, two Phase 2 study and one Phase 1 study of daratumumab using ENHANZE technology in patients with amyloidosis, smoldering myeloma and multiple myeloma.

In February 2019, Janssen's development partner, Genmab, announced positive Phase 3 trial results from the COLUMBA study evaluating subcutaneous DARZALEX in comparison to DARZALEX IV in patients with relapsed or refractory multiple myeloma. DARZALEX SC (utilizing ENHANZE technology) was found to be non-inferior to Darzalex IV with regard the co-primary endpoints of Overall Response Rate and Maximum Trough concentration. In July 2019, Janssen submitted a BLA to the FDA and an extension application to the EMA for the subcutaneous delivery of DARZALEX for patients with multiple myeloma.

In December 2019, Janssen elected targets EGFR and cMET on an exclusive basis as part of the bispecific antibody (JNJ-61186372), which is being studied in solid tumors.

AbbVie Collaboration

In June 2015, we and AbbVie entered into a collaboration and license agreement, under which AbbVie has the worldwide license to develop and commercialize products combining our rHuPH20 enzyme with AbbVie proprietary biologics directed to up to nine targets. Targets may be selected on an exclusive basis. AbbVie elected one target on an exclusive basis, TNF alpha, for which it has discontinued development and returned the target.

Lilly Collaboration

In December 2015, we and Lilly entered into a collaboration and license agreement, under which Lilly has the worldwide license to develop and commercialize products combining our rHuPH20 enzyme with Lilly proprietary biologics directed to up to five targets. Targets may be selected on an exclusive basis. Lilly has elected two targets on an exclusive basis and one target on a semi-exclusive basis. In August 2017, Lilly initiated a Phase 1 study of an investigational therapy in combination with rHuPH20.

BMS Collaboration

In September 2017, we and BMS entered into a collaboration and license agreement, which became effective in November 2017, under which BMS has the worldwide license to develop and commercialize products combining our rHuPH20 enzyme with BMS immuno-oncology targets directed at up to eleven targets. Targets may be selected on an exclusive basis, with the exception of one co-exclusive target. BMS has designated multiple immuno-oncology targets including programmed death 1 (PD-1) and has an option to select additional targets within five years from the effective date. In October 2018, BMS dosed the first patient in a Phase 1/2a study evaluating the safety, pharmacokinetics and pharmacodynamics of BMS-986179, an investigational anti-CD-73 antibody alone and in combination with nivolumab, using ENHANZE technology. BMS is also conducting a Phase 1/2 study of nivolumab using ENHANZE technology in patients with solid tumors. In October 2019, BMS initiated a Phase 1 study for Relatlimab in combination with nivolumab and ENHANZE technology.

Alexion Collaboration

In December 2017, we and Alexion entered into a collaboration and license agreement, under which Alexion has the worldwide license to develop and commercialize products combining our rHuPH20 enzyme with Alexion's portfolio of products directed at up to four targets. Targets may be selected on an exclusive basis. Alexion elected two targets on an exclusive basis, including a

C5 complement inhibitor and has an option to select two additional targets within five years from the effective date. In August 2018, Alexion announced that it initiated a Phase 1 trial to study a next-generation subcutaneous formulation of ALXN1210 using ENHANZE technology. Alexion believes this next-generation subcutaneous formulation, called ALXN1810, has the potential to extend the dosing interval from once a week to greater than two weeks between doses. In January 2020, Alexion announced plans to conduct a phase 2 basket trial in renal indications for ALXN1810.

argenx Collaboration

In February 2019, we entered into an agreement with argenx for the right to develop and commercialize one exclusive target, the human neonatal Fc receptor FcRn, which includes argenx's lead asset efgartigimod (ARGX-113), and an option to select two additional targets using ENHANZE technology. In May 2019, argenx nominated a second target to be studied using ENHANZE technology, a human complement factor C2 associated with the product candidate ARGX-117, which is being developed to treat severe autoimmune diseases.

In July 2019, argenx dosed the first subject in a phase 1 clinical trial evaluating the safety, pharmacokinetics and pharmacodynamics of efgartigimod (ARGX-113), using ENHANZE technology. In December 2019, argenx reported that based on data from the phase 1 study and internal company analysis, a one minute injection administered every 2 weeks may be possible.

NIH CRADA

In June 2019, we announced a Cooperative Research and Development Agreement (CRADA) with the National Institute of Allergy and Infectious Diseases' Vaccine Research Center (VRC), part of National Institute of Health (NIH), enabling the VRC's use of ENHANZE technology to develop subcutaneous formulations of broadly neutralizing antibodies (bnAbs) against HIV for HIV treatment.

For a further discussion of the collaboration agreements, refer to Note 2, *Summary of Significant Accounting Policies - Revenues under Collaborative Agreements.*

Customers

The following table indicates the percentage of total revenues in excess of 10% with any single customer:

	Year Ended December 31,		
	2019	2018	2017
Roche	40%	72%	38%
argenx	23%	—%	—%
Janssen	18%	2%	6%
BMS	1%	4%	32%
Alexion	1%	3%	13%

For additional information regarding our revenues from customers, refer to Note 2, *Summary of Significant Accounting Policies — Concentrations of Credit Risk, Sources of Supply and Significant Customer*s, to our consolidated financial statements.

Patents and Proprietary Rights

Patents and other proprietary rights are essential to our business. Our success will depend in part on our ability to obtain patent protection for our inventions, to preserve our trade secrets and to operate without infringing the proprietary rights of third parties. Our strategy is to actively pursue patent protection in the U.S. and certain foreign jurisdictions for technology that we believe to be proprietary to us and that offers us a potential competitive advantage. Our patent portfolio includes 43 issued patents in the U.S., more than 520 issued patents in Europe and other countries in the world and more than 70 pending patent applications. In general, patents have a term of 20 years from the application filing date or earlier claimed priority date. Our issued patents will expire between 2023 and 2035. We have multiple patents and patent applications throughout the world pertaining to our recombinant human hyaluronidase and methods of use and manufacture, including an issued U.S. patent which expires in 2027 and an issued European patent which expires in 2024, which we believe cover the products and product candidates under our existing

collaborations and Hylenex recombinant . In addition, we have, under prosecution throughout the world, multiple patent applications that relate specifically to individual product candidates under development, the expiration of which can only be definitely determined upon maturation into our issued patents. We believe our patent filings represent a barrier to entry for potential competitors looking to utilize these hyaluronidases.

In addition to patents, we rely on unpatented trade secrets, proprietary know-how and continuing technological innovation. We seek protection of these trade secrets, proprietary know-how and innovation, in part, through confidentiality and proprietary information agreements. Our policy is to require our employees, directors, consultants, advisors, collaborators, outside scientific collaborators and sponsored researchers, other advisors and other individuals and entities to execute confidentiality agreements upon the start of employment, consulting or other contractual relationships with us. These agreements provide that all confidential information developed or made known to the individual or entity during the course of the relationship is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees and some other parties, the agreements provide that all inventions conceived by the individual will be our exclusive property. Despite the use of these agreements and our efforts to protect our intellectual property, there will always be a risk of unauthorized use or disclosure of information. Furthermore, our trade secrets may otherwise become known to, or be independently developed by, our competitors.

We also file trademark applications to protect the names of our products and product candidates. These applications may not mature to registration and may be challenged by third parties. We are pursuing trademark protection in a number of different countries around the world. There can be no assurances that our registered or unregistered trademarks or trade names will not infringe on rights of third parties or will be acceptable to regulatory agencies.

Research and Development Activities

Our research and development expenses consist primarily of costs associated with the product development, quality and regulatory work required to maintain the ENHANZE platform, development and manufacturing of product candidates performed on behalf of our partners, compensation and other expenses for research and development personnel, supplies and materials, facility costs and amortization and depreciation. We charge all research and development expenses to operations as they are incurred. Prior to our November 2019 restructuring, our research and development activities were primarily focused on the development of PEGPH20.

Manufacturing

We do not have our own manufacturing facility for our product and our partners' products and product candidates, or the capability to package our products. We have engaged third parties to manufacture bulk rHuPH20 and Hylenex.

We have existing supply agreements with contract manufacturing organizations Avid Bioservices, Inc. (Avid) and Catalent Indiana LLC (formerly Cook Pharmica LLC) (Catalent) to produce supplies of bulk rHuPH20. These manufacturers each produce bulk rHuPH20 under current Good Manufacturing Practices (cGMP) for clinical and commercial uses. Catalent currently produces bulk rHuPH20 for use in Hylenex and collaboration product candidates. Avid currently produces bulk rHuPH20 for use in collaboration products. We rely on their ability to successfully manufacture these batches according to product specifications. It is important for our business for Catalent and Avid to (i) retain their status as cGMP-approved manufacturing facilities; (ii) successfully scale up bulk rHuPH20 production; and/or (iii) manufacture the bulk rHuPH20 required by us and our collaborators for use in our proprietary and collaboration products and product candidates. In addition to supply obligations, Avid and Catalent will also provide support for data and information used in the chemistry, manufacturing and controls sections for FDA and other regulatory filings.

We have a commercial manufacturing and supply agreement with Patheon Manufacturing Services, LLC (Patheon) under which Patheon will provide the final fill and finishing steps in the production process of Hylenex recombinant. Under our commercial services agreement with Patheon, Patheon has agreed to fill and finish Hylenex recombinant product for us until December 31, 2021, subject to further extensions in accordance with the terms of the agreement.

Sales, Marketing and Distribution

Hylenex Recombinant

Our commercial activities currently focus on Hylenex recombinant. We have a team of sales specialists that provide hospital and surgery center customers with the information about Hylenex recombinant and information needed to obtain formulary approval for, and support utilization of, Hylenex recombinant. Our commercial activities also include marketing and related services and commercial support services such as commercial operations, managed markets and commercial analytics. We also employ third-party vendors, such as advertising agencies, market research firms and suppliers of marketing and other sales support related services to assist with our commercial activities.

We sell Hylenex recombinant in the U.S. to wholesale pharmaceutical distributors, who sell the product to hospitals and other end-user customers. We engage Integrated Commercialization Solutions (ICS), a division of AmerisourceBergen Specialty Group, a subsidiary of AmerisourceBergen, to act as our exclusive distributor for commercial shipment and distribution of Hylenex recombinant to our customers in the United States. In addition to distribution services, ICS provides us with other key services related to logistics, warehousing, returns and inventory management, contract administration and chargebacks processing and accounts receivable management. In addition, we utilize third parties to perform various other services for us relating to regulatory monitoring, including call center management, adverse event reporting, safety database management and other product maintenance services.

Competition

The pharmaceutical industry is characterized by rapidly advancing technologies, intense competition and a strong emphasis on proprietary therapeutics. We face competition from a number of sources, some of which may target the same indications as our product or product candidates, including large pharmaceutical companies, smaller pharmaceutical companies, biotechnology companies, academic institutions, government agencies and private and public research institutions, many of which have greater financial resources, drug development experience, sales and marketing capabilities, including larger, well established sales forces, manufacturing capabilities, experience in obtaining regulatory approvals for product candidates and other resources than us. We face competition not only in the commercialization of Hylenex but also for the out-licensing of our ENHANZE technology. Our ENHANZE technology may face increasing competition from alternate approaches and/or emerging technologies to deliver medicines SC. In addition, our collaborators face competition in the commercialization of the product candidates for which the collaborators seek marketing approval from the FDA or other regulatory authorities.

Hylenex Recombinant

Hylenex recombinant is currently the only FDA approved recombinant human hyaluronidase on the market. The competitors for Hylenex recombinant include, but are not limited to, Valeant Pharmaceuticals International, Inc.'s product, Vitrase®, an ovine (ram) hyaluronidase, and Amphastar Pharmaceuticals, Inc.'s product, Amphadase®, a bovine (bull) hyaluronidase. In addition, some commercial pharmacies compound hyaluronidase preparations for institutions and physicians even though compounded preparations are not FDA approved products.

Government Regulations

The FDA and comparable regulatory agencies in foreign countries regulate the manufacture and sale of the pharmaceutical products that we or our partners have developed or that our partners currently are developing. The FDA has established guidelines and safety standards that are applicable to the laboratory and preclinical evaluation and clinical investigation of therapeutic products and stringent regulations that govern the manufacture and sale of these products. The process of obtaining regulatory approval for a new therapeutic product usually requires a significant amount of time and substantial resources.

Regulatory obligations continue post-approval and include the reporting of adverse events when a drug is utilized in the broader patient population. Promotion and marketing of drugs is also strictly regulated, with penalties imposed for violations of FDA regulations, the Lanham Act and other federal and state laws, including the federal anti-kickback statute.

We currently intend to continue to seek, through our collaborators, approval to market products and product candidates in foreign countries, which may have regulatory processes that differ materially from those of the FDA. Our partners may rely upon independent consultants to seek and gain approvals to market our proposed products in foreign countries or may rely on other pharmaceutical or biotechnology companies to license our proposed products. We cannot guarantee that approvals to market any of our partners' products can be obtained in any country. Approval to market a product in any one foreign country does not necessarily indicate that approval can be obtained in other countries.

From time to time, legislation is drafted and introduced in Congress that could significantly change the statutory provisions governing the approval, manufacturing and marketing of drug products. In addition, FDA regulations and guidance are often revised or reinterpreted by the agency or reviewing courts in ways that may significantly affect our business and development of our partners' product candidates and any products that we may commercialize. It is impossible to predict whether additional legislative changes will be enacted, or FDA regulations, guidance or interpretations changed, or what the impact of any such changes may be.

Information about our Executive Officers

Information concerning our executive officers, including their names, ages and certain biographical information can be found in Part III, Item 10, *Directors, Executive Officers and Corporate Governance*. This information is incorporated by reference into Part I of this report.

Employees

As of February 14, 2020, we had 132 full-time employees. None of our employees are unionized and we believe our employee relations to be good.

Item 1A. Risk Factors

Risks Related To Our Business

We recently initiated a significant corporate restructuring including a substantial reduction in our workforce to reduce our operating costs. As a result of this initiative, we may experience a disruption to our business operations. In addition, we may not realize all of the expected cost savings from our corporate restructuring which could have an adverse effect on our business or results of operations.

In November 2019, we announced that our HALO-301 Phase 3 clinical study evaluating investigational new drug PEGPH20 as a first-line therapy for treatment of patients with metastatic pancreatic cancer failed to reach the primary endpoint of overall survival. As a result, we have closed all ongoing oncology clinical studies including all development activities for PEGPH20. In connection with this decision, we have initiated a significant restructuring, including a staff reduction of approximately 55 percent of our total workforce. This restructuring and staff reduction is aimed at reducing operating costs and focusing our resources on our ENHANZE technology and Hylenex. Our restructuring initiative and staff reduction may cause disruption to our business operations. For example, the reduction in force has resulted in the loss of a number of long-term employees including some members of the senior management team, the loss of institutional knowledge and expertise and the reallocation and combination of certain roles and responsibilities across the organization, all of which could adversely affect our operations. In addition, we may not be able to effectively realize all the cost savings anticipated by the restructuring initiative and reduction-in-force and we may incur unanticipated charges or make cash payments as a result of our restructuring initiative that were not previously contemplated which could result in an adverse effect on our business or results of operations.

Our inability to attract, hire and retain key management and scientific personnel could negatively affect our business.

Our success depends on the performance of key management and scientific employees with relevant experience. We depend substantially on our ability to hire, train, motivate and retain high quality personnel, especially our scientists and management team which may be adversely affected by our recent restructuring and reduction in force. Particularly in view of the small number of employees on our staff to manage our alliance programs and key functions, if we are unable to retain existing personnel or identify or hire additional personnel, we may not be able to adequately support current and future alliances with strategic collaborators. Our use of domestic and international third-party contractors, consultants and staffing agencies also subjects us to potential co-employment liability claims.

Furthermore, if we were to lose key management personnel, we would likely lose some portion of our institutional knowledge and technical know-how, potentially causing a substantial disruption or delay in one or more of our partnered development programs until adequate replacement personnel could be hired and trained. In addition, we do not have key person life insurance policies on the lives of any of our employees which would help cover the cost of associated with the loss of key employees.

We have generated only limited revenues to date and we have a history of net losses and negative cash flows.

Relative to expenses incurred in our operations, we have generated only limited revenues from product sales, royalties, licensing fees, milestone payments, bulk rHuPH20 supply payments and research reimbursements to date. Through December 31, 2019, we have incurred aggregate net losses of $603.7 million. Although we expect to achieve sustainable profitability beginning the second quarter of 2020, unexpected declines in revenues and increases in expenses could inhibit our ability to achieve and sustain profitability.

If partners' product candidates do not receive and maintain regulatory approvals, or if approvals are not obtained in a timely manner, such failure or delay would substantially impair our ability to generate revenues.

Approval from the FDA or equivalent health authorities is necessary to manufacture and market pharmaceutical products in the U.S. and the other countries in which we anticipate doing business have similar requirements. The process for obtaining FDA and other regulatory approvals is extensive, time-consuming, risky and costly, and there is no guarantee that the FDA or other regulatory bodies will approve any applications that may be filed with respect to any of our partners' product candidates, or that the timing of any such approval will be appropriate for the desired product launch schedule for a product candidate. We and our collaborators attempt to provide guidance as to the timing for the filing and acceptance of such regulatory approvals, but such filings and approvals may not occur when we or our collaborators expect, or at all. The FDA or other foreign regulatory agency may refuse or delay approval of our partners' product candidates for failure to collect sufficient clinical or animal safety data and require our collaborators to conduct additional clinical or animal safety studies which may cause lengthy delays and increased costs to our partners' development programs. Any such issues associated with rHuPH20 could have an adverse impact on future development of our partners' products which include rHuPH20, future sales of Hylenex recombinant, or our ability to maintain our existing collaborations or enter into new collaborations.

We and our collaborators may not be successful in obtaining approvals for any additional potential products in a timely manner, or at all. Refer to the risk factor titled "*Our collaboration product candidates may not receive regulatory approvals or their development may be delayed for a variety of reasons, including delayed or unsuccessful clinical trials, regulatory requirements or safety concerns*" for additional information relating to the approval of product candidates.

Additionally, even with respect to products which have been approved for commercialization, in order to continue to manufacture and market pharmaceutical products, we or our collaborators must maintain our regulatory approvals. If we or any of our collaborators are unsuccessful in maintaining our regulatory approvals, our ability to generate revenues would be adversely affected.

Use of Hylenex and the products and product candidates of our partners' could be associated with side effects or adverse events.

As with most pharmaceutical products, use of Hylenex and the products and product candidates of our collaborators could be associated with side effects or adverse events which can vary in severity (from minor reactions to death) and frequency (infrequent or prevalent). Side effects or adverse events associated with the use of Hylenex and the products or product candidates of our collaborators may be observed at any time, including in clinical trials or when a product is commercialized, and any such side effects or adverse events may negatively affect our or our collaborators' ability to obtain or maintain regulatory approval or market such products and product candidates. Side effects such as toxicity or other safety issues associated with the use of Hylenex and the products and product candidates of our collaborators could require us or our collaborators to perform additional studies or halt development or commercialization of these products and product candidates or expose us to product liability lawsuits which will harm our business. For example, we experienced a clinical hold on patient enrollment and dosing in our phase 2 study of PEGPH20 in patients with PDA (a discontinued program), which was not resolved until we implemented steps to address an observed possible difference in TE event rates between the arms of the study. We or our collaborators may be required by regulatory agencies to conduct additional animal or human studies regarding the safety and efficacy of our pharmaceutical products or product candidates which we have not planned or anticipated. Furthermore, there can be no assurance that we or our collaborators will resolve any issues related to any product or product candidate side effects or adverse events to the satisfaction of the FDA or any regulatory agency in a timely manner or ever, which could harm our business, prospects and financial condition.

If our contract manufacturers are unable to manufacture and supply to us bulk rHuPH20 or other raw materials in the quantity and quality required by us or our collaborators for use in Hylenex or our partners' products and product candidates, our partners' product development and commercialization efforts could be delayed or stopped and our collaborations could be damaged.

We have existing supply agreements with contract manufacturing organizations Avid Bioservices, Inc. (Avid) and Catalent Indiana LLC (Catalent) to produce bulk rHuPH20. These manufacturers each produce bulk rHuPH20 under cGMP for use in Hylenex recombinant, and for use in collaboration products and product candidates.Catalent currently produces bulk rHuPH20 for use in Hylenex recombinant and collaboration product candidates. In addition to supply obligations, Avid and Catalent will also provide support for the chemistry, manufacturing and controls sections for FDA and other regulatory filings. We rely on their ability to successfully manufacture bulk rHuPH20 according to product specifications. If either Avid or Catalent: (i) is unable to retain its status as an FDA approved manufacturing facility; (ii) is unable to otherwise successfully scale up bulk rHuPH20 production to meet corporate or regulatory authority quality standards; or (iii) fails to manufacture and supply bulk rHuPH20 in the quantity and quality required by us or our collaborators for use in Hylenex and collaboration products and product candidates for any other reason, our business will be adversely affected. In addition, a significant change in such parties' or other third party manufacturers' business or financial condition could adversely affect their abilities to fulfill their contractual obligations to us. We have not established, and may not be able to establish, favorable arrangements with additional bulk rHuPH20 manufacturers and suppliers of the ingredients necessary to manufacture bulk rHuPH20 should the existing manufacturers and suppliers become unavailable or in the event that our existing manufacturers and suppliers are unable to adequately perform their responsibilities. We have attempted to mitigate the impact of a potential supply interruption through the establishment of excess bulk rHuPH20 inventory where possible, but there can be no assurances that this safety stock will be maintained or that it will be sufficient to address any delays, interruptions or other problems experienced by Avid and/or Catalent. Any delays, interruptions or other problems regarding the ability of Avid and/or Catalent to supply bulk rHuPH20 or the ability of other third party manufacturers, to supply other raw materials or ingredients necessary to produce our products on a timely basis could: (i) cause the delay of our partners' clinical trials or otherwise delay or prevent the regulatory approval of our partners' product candidates; (ii) delay or prevent the effective commercialization of Hylenex or collaboration products and product candidates; and/or (iii) cause us to breach contractual obligations to deliver bulk rHuPH20 to our collaborators. Such delays would likely damage our relationship with our collaborators, and they would have a material adverse effect on royalties and thus our business and financial condition. Additionally, we rely on third parties to manufacture, prepare, fill, finish, package, store and ship our product and partners' product candidates on our behalf. If the third parties we identify fail to perform their obligations, the progress of partners' clinical trials could be delayed or even suspended and the commercialization of approved product candidates could be delayed or prevented.

If we or any party to a key collaboration agreement fail to perform material obligations under such agreement, or if a key collaboration agreement, is terminated for any reason, our business could significantly suffer.

We have entered into multiple collaboration agreements under which we may receive significant future payments in the form of milestone payments, target designation fees, maintenance fees and royalties. We are heavily dependent on our collaborators to develop and commercialize product candidates subject to our collaborations in order for us to realize any financial benefits from these collaborations. Our collaborators may not devote the attention and resources to such efforts that we would ourselves, change their clinical development plans, promotional efforts or simultaneously develop and commercialize products in competition to those products we have licensed to them. Any of these actions could not be visible to us immediately and could negatively impact our ability to forecast and our ability to achieve the benefits and revenue we receive from such collaboration. In addition, in the event that a party fails to perform under a key collaboration agreement, or if a key collaboration agreement is terminated, the reduction in anticipated revenues could negatively impact our operations and our commercialization efforts for Hylenex. In addition, the termination of a key collaboration agreement by one or more of our collaborators could have a material adverse impact our ability to enter into additional collaboration agreements with new collaborators on favorable terms, if at all. In certain circumstances, the termination of a key collaboration agreement would require us to revise our corporate strategy going forward and reevaluate the applications and value of our technology.

Hylenex and our partners' products and product candidates rely on the rHuPH20 enzyme, and any adverse development regarding rHuPH20 could substantially impact multiple areas of our business, including current and potential collaborations, as well as any proprietary programs.

rHuPH20 is a key technological component of Hylenex and our ENHANZE technology and most of our collaboration products and product candidates, including the current and future products and product candidates under our ENHANZE collaborations. If there is an adverse development for rHuPH20 (e.g., an adverse regulatory determination relating to rHuPH20, if we are unable to obtain sufficient quantities of rHuPH20, if we are unable to obtain or maintain material proprietary rights to rHuPH20 or if we discover negative characteristics of rHuPH20), multiple areas of our business, including current and potential collaborations, as well as proprietary programs would be substantially impacted. For example, elevated anti-rHuPH20 antibody titers were detected in the registration trial for Baxalta's HYQVIA product as well as in a former collaborator's product in a Phase 2 clinical trial with rHuPH20, but have not been associated, in either case, with any adverse events. We monitor for antibodies to rHuPH20 in our collaboration and proprietary programs, and although we do not believe at this time that the incidence of non-neutralizing anti-rHuPH20 antibodies in either the HYQVIA program or the former collaborator's program will have a significant impact on our proprietary product and our partners' product and product candidates, there can be no assurance that there will not be other such occurrences in the foregoing programs or that concerns regarding these antibodies will not also be raised by the FDA or other health authorities in the future, which could result in delays or discontinuations of our Hylenex commercialization activities, the development or commercialization activities of our partners, or deter our entry into additional collaborations with third parties.

We routinely evaluate, and may modify, our business strategy and our strategic focus to only a few fields or applications of our technology which may increase the risk for potential negative impact from adverse developments.

We routinely evaluate our business strategy, and may modify this strategy in the future in light of our assessment of unmet medical needs, growth potential, resource requirements, regulatory issues, competition, risks and other factors. As a result of these strategic evaluations, we may focus our resources and efforts on one or a few programs or fields and may suspend or reduce our efforts on other programs and fields. For example, in the fourth quarter of 2019, we decided to focus our resources on our ENHANZE technology and our commercial product, Hylenex. By focusing on these areas, we increase the potential impact on us if one of those partner programs does not successfully complete clinical trials, achieve commercial acceptance or meet expectations regarding sales and revenue. Our decision to focus on one or a few programs may also reduce the value of programs that are no longer within our principal strategic focus, which could impair our ability to pursue collaborations or other strategic alternatives for those programs we are not pursuing.

Our collaboration product candidates may not receive regulatory approvals or their development may be delayed for a variety of reasons, including delayed or unsuccessful clinical trials, regulatory requirements or safety concerns.

Clinical testing of pharmaceutical products is a long, expensive and uncertain process, and the failure or delay of a clinical trial can occur at any stage, including the patient enrollment stage. Even if initial results of preclinical and nonclinical studies or clinical trial results are promising, our collaborators may obtain different results in subsequent trials or studies that fail to show the desired levels of dose safety and efficacy, or our collaborators may not, obtain applicable regulatory approval for a variety of other reasons. Preclinical, nonclinical, and clinical trials for collaboration product candidates could be unsuccessful, which would delay or preclude regulatory approval and commercialization of the product candidates. In the U.S. and other jurisdictions, regulatory approval can be delayed, limited or not granted for many reasons, including, among others:

- during the course of clinical studies, the final data may differ from initial reported data, and clinical results may not meet prescribed endpoints for the studies or otherwise provide sufficient data to support the efficacy of our collaborators' product candidates;

- clinical and nonclinical test results may reveal inferior pharmacokinetics, side effects, adverse events or unexpected safety issues associated with the use of our collaborators' product candidates;
- regulatory review may not find that the data from preclinical testing and clinical trials justifies approval;
- regulatory authorities may require that our partners change their studies or conduct additional studies which may significantly delay or make continued pursuit of approval commercially unattractive;
- a regulatory agency may reject partner trial data or disagree with their interpretations of either clinical trial data or applicable regulations;
- a regulatory agency may require additional safety monitoring and reporting through Risk Evaluation and Mitigation Strategies or conditions to assure safe use programs;
- a partner may decide to not pursue regulatory approval for such a product;
- a regulatory agency may not approve our manufacturing processes or facilities, or the processes or facilities of our collaborators, our contract manufacturers or our raw material suppliers;
- a regulatory agency may identify problems or other deficiencies in our existing manufacturing processes or facilities, or the existing processes or facilities of our collaborators, our contract manufacturers or our raw material suppliers;
- a regulatory agency may change its formal or informal approval requirements and policies, act contrary to previous guidance, adopt new regulations or raise new issues or concerns late in the approval process; or
- a partner product candidate may be approved only for indications that are narrow or under conditions that place the product at a competitive disadvantage, which may limit the sales and marketing activities for such product candidate or otherwise adversely impact the commercial potential of a product.

If a collaboration product candidate is not approved in a timely fashion or obtained on commercially viable terms, or if development of any product candidate is terminated due to difficulties or delays encountered in the regulatory approval process, it could have a material adverse impact on our business, and we would become more dependent on the development of other collaboration product candidates and/or our ability to successfully acquire other technologies. There can be no assurances that any collaboration product candidate will receive regulatory approval in a timely manner, or at all. There can be no assurance that partners will be able to gain clarity as to the FDA's requirements or that the requirements may be satisfied in a commercially feasible way, in which case our ability to enter into collaborations with third parties or explore other strategic alternatives to exploit an opportunity will be limited or may not be possible.

We anticipate that certain collaboration products will be marketed, and perhaps manufactured, in foreign countries. The process of obtaining regulatory approvals in foreign countries is subject to delay and failure for the reasons set forth above, as well as for reasons that vary from jurisdiction to jurisdiction. The approval process varies among countries and jurisdictions and can involve additional testing. The time required to obtain approval may differ from that required to obtain FDA approval. Foreign regulatory agencies may not provide approvals 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 foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries or jurisdictions or by the FDA.

Our third party collaborators are responsible for providing certain proprietary materials that are essential components of our collaboration products and product candidates, and any failure to supply these materials could delay the development and commercialization efforts for these collaboration products and product candidates and/or damage our collaborations.

Our development and commercialization collaborators are responsible for providing certain proprietary materials that are essential components of our collaboration products and product candidates. For example, Roche is responsible for producing the Herceptin and MabThera required for its subcutaneous products and Baxalta is responsible for producing the GAMMAGARD LIQUID for its product HYQVIA. If a collaborator, or any applicable third party service provider of a collaborator, encounters difficulties in the manufacture, storage, delivery, fill, finish or packaging of the collaboration product or product candidate or component of such product or product candidate, such difficulties could (i) cause the delay of clinical trials or otherwise delay or prevent the regulatory approval of collaboration product candidates; and/or (ii) delay or prevent the effective commercialization of collaboration products. Such delays could have a material adverse effect on our business and financial condition.

If we or our collaborators fail to comply with regulatory requirements applicable to promotion, sale and manufacturing of approved products, regulatory agencies may take action against us or them, which could significantly harm our business.

Any approved products, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for these products, are subject to continual requirements and review by the FDA, state and foreign regulatory bodies. Regulatory authorities subject a marketed product, its manufacturer and the manufacturing facilities to continual review and periodic inspections. We, our collaborators and our respective contractors, suppliers and vendors, will be subject to ongoing regulatory requirements, including complying with regulations and laws regarding advertising, promotion and sales of drug products, required submissions of safety and other post-market information and reports, registration requirements, cGMP regulations (including requirements relating to quality control and quality assurance, as well as the corresponding maintenance of records and documentation), and the requirements regarding the distribution of samples to physicians and recordkeeping requirements. Regulatory agencies may change existing requirements or adopt new requirements or policies. We, our collaborators

and our respective contractors, suppliers and vendors, may be slow to adapt or may not be able to adapt to these changes or new requirements.

In particular, regulatory requirements applicable to pharmaceutical products make the substitution of suppliers and manufacturers costly and time consuming. We have minimal internal manufacturing capabilities and are, and expect to be in the future, entirely dependent on contract manufacturers and suppliers for the manufacture of our products and for their active and other ingredients. The disqualification of these manufacturers and suppliers through their failure to comply with regulatory requirements could negatively impact our business because the delays and costs in obtaining and qualifying alternate suppliers (if such alternative suppliers are available, which we cannot assure) could delay our partners' clinical trials or otherwise inhibit our or partners' ability to bring approved products to market, which would have a material adverse effect on our business and financial condition. Likewise, if we, our collaborators and our respective contractors, suppliers and vendors involved in sales and promotion of our products do not comply with applicable laws and regulations, for example off-label or false or misleading promotion, this could materially harm our business and financial condition.

Failure to comply with regulatory requirements may result in any of the following:

- restrictions on our or our partners' products or manufacturing processes;
- warning letters;
- withdrawal of our or our partners' products from the market;
- voluntary or mandatory recall;
- fines;
- suspension or withdrawal of regulatory approvals;
- suspension or termination of any of our partners' ongoing clinical trials;
- refusal to permit the import or export of our or our partners' products;
- refusal to approve pending applications or supplements to approved applications that we submit;
- product seizure;
- injunctions; or
- imposition of civil or criminal penalties.

We may need to raise additional capital in the future and there can be no assurance that we will be able to obtain such funds.

We may need to raise additional capital in the future to fund our operations and for general corporate purposes if revenues do not occur as expected. Our current cash reserves and expected revenues may not be sufficient for us to fund general operations and conduct our business at the level desired. In addition, if we engage in acquisitions of companies, products or technologies in order to execute our business strategy, we may need to raise additional capital. We may raise additional capital in the future through one or more financing vehicles that may be available to us including (i) new collaborative agreements; (ii) expansions or revisions to existing collaborative relationships; (iii) private financings; (iv) other equity or debt financings; (v) monetizing assets; and/or (vi) the public offering of securities.

If we are required to raise additional capital in the future, it may not be available on favorable financing terms within the time required, or at all. If additional capital is not available on favorable terms when needed, we will be required to raise capital on adverse terms or significantly reduce operating expenses through the restructuring of our operations or deferral of strategic business initiatives. If we raise additional capital through a public offering of securities or equity, a substantial number of additional shares may be issued, which may negatively affect our stock price and these additional shares will dilute the ownership interest of our current investors.

We currently have significant debt and failure by us to fulfill our obligations under the applicable loan agreements may cause the repayment obligations to accelerate.

The aggregate amount of our consolidated indebtedness, net of debt discount, as of December 31, 2019 was $402.6 million, which includes $460.0 million in aggregate principal amount of 1.25% Convertible Senior Notes due 2024 (Convertible Notes) and an outstanding balance on our Royalty-backed Loan of $19.5 million, net of unamortized debt discount of $77.0 million. We currently estimate that the Royalty-backed Loan will be repaid in the second quarter of 2020. We also may incur additional indebtedness in the future.

Our indebtedness may:

- make it difficult for us to satisfy our financial obligations, including making scheduled principal and interest payments on our indebtedness;
- limit our ability to borrow additional funds for working capital, capital expenditures, acquisitions or other general corporate purposes;
- limit our ability to use our cash flow or obtain additional financing for future working capital, capital expenditures, acquisitions, share repurchases or other general business purposes;
- require us to use a portion of our cash flow from operations to make debt service payments;

- limit our flexibility to plan for, or react to, changes in our business and industry;
- place us at a competitive disadvantage compared to our less leveraged competitors; and

increase our vulnerability to the impact of adverse economic and industry conditions.

Our ability to make payments on our debt will depend on our future operating performance and ability to generate cash and may also depend on our ability to obtain additional debt or equity financing. It will also depend on financial, business or other factors affecting our operations, many of which are beyond our control. We will need to use cash to pay principal and interest on our debt, thereby reducing the funds available to fund operations, strategic initiatives and working capital requirements. If we are unable to generate sufficient cash to service our debt obligations, an event of default may occur under any of our debt instruments which could result in an acceleration of such debt upon which we may be required to repay all the amounts outstanding under some or all of our debt instruments. Such an acceleration of our debt obligations could harm our financial condition.

The conditional conversion feature of the Convertible Notes, if triggered, may adversely affect our financial condition and operating results.

In the event the conditional conversion feature of the Convertible Notes is triggered, holders of the Convertible Notes will be entitled to convert the notes at any time during specified periods at their option. If one or more holders elect to convert their notes, unless we elect to satisfy our conversion obligation by delivering solely shares of our common stock (other than paying cash in lieu of delivering any fractional share), we would be required to settle a portion or all of our conversion obligation in cash, which could adversely affect our liquidity. Even if holders of the Convertible Notes do not elect to convert their notes, we could be required under applicable accounting rules to reclassify all or a portion of the outstanding principal of the notes as a current rather than long-term liability, which would result in a material reduction of our net working capital.

Conversion of our Convertible Notes may dilute the ownership interest of existing stockholders or may otherwise depress the price of our common stock.

The conversion of some or all of our Convertible Notes, to the extent we deliver shares upon conversion, will dilute the ownership interests of existing stockholders. Any sales in the public market of the Convertible Notes or our common stock issuable upon conversion of the Convertible Notes could adversely affect prevailing market prices of our common stock. In addition, the existence of the Convertible Notes may encourage short selling by market participants because the conversion of the Convertible Notes could be used to satisfy short positions, or anticipated conversion of the Convertible Notes into shares of our common stock could depress the price of our common stock.

The accounting method for the Convertible Notes could have a material effect on our reported financial results.

Pursuant to Financial Accounting Standards Board Accounting Standards Codification Subtopic 470-20, Debt with Conversion and Other Options (“ASC 470-20”), an entity must separately account for the liability and equity components of convertible debt instruments whose conversion may be settled entirely or partially in cash (such as our Convertible Notes) in a manner that reflects the issuer’s economic interest cost for non-convertible debt. The liability component of our Convertible Notes was initially be valued at the fair value of a similar debt instrument that does not have an associated equity component and was reflected as a liability in our consolidated balance sheet. The equity component of the Convertible Notes was included in the additional paid-in capital section of our stockholders’ equity on our consolidated balance sheet, and the value of the equity component was treated as original issue discount for purposes of accounting for the debt component. This original issue discount will be amortized to non-cash interest expense over the term of the notes, and we will record a greater amount of non-cash interest expense in current periods as a result of this amortization. Accordingly, we will report lower net income in our financial results because ASC 470-20 will require the interest expense associated with the notes to include both the current period’s amortization of the debt discount and the notes’ coupon interest, which could adversely affect our reported or future financial results, the trading price of our common stock and the trading price of the Convertible Notes.

In addition, under certain circumstances, convertible debt instruments (such as the notes) that may be settled entirely or partly in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the notes are not included in the calculation of diluted net income per share except to the extent that the conversion value of the notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable or otherwise elect not to use the treasury stock method in accounting for the shares issuable upon conversion of the notes, then our diluted earnings per share would be adversely affected. For example, the FASB recently published an exposure draft proposing to amend these accounting standards to eliminate the treasury stock method for convertible instruments and instead require application of the ‘‘if-converted’’ method. Under that method, if it is adopted, diluted net income (loss) per share would generally be calculated assuming that all the notes were converted solely into shares of common stock at the beginning of the reporting period. The application of the ‘‘if-converted’’ method may reduce our reported diluted net income per share.

If collaboration product candidates are approved for marketing but do not gain market acceptance resulting in commercial performance below that which was expected or projected, our business may suffer and we may not be able to fund future operations.

Assuming that existing or future collaboration product candidates obtain the necessary regulatory approvals for commercial sale, a number of factors may affect the market acceptance of these newly-approved products, including, among others:

- the degree to which the use of these products is restricted by the approved product label;
- the price of these products relative to other therapies for the same or similar treatments;
- the extent to which reimbursement for these products and related treatments will be available from third party payors including government insurance programs (Medicare and Medicaid) and private insurers;
- the introduction of generic or biosimilar competitors to these products;
- the perception by patients, physicians and other members of the health care community of the effectiveness and safety of these products for their prescribed treatments relative to other therapies for the same or similar treatments;
- the ability and willingness of our collaborators to fund sales and marketing efforts; and
- the effectiveness of the sales and marketing efforts of our collaborators.

If these collaboration products do not gain market acceptance resulting in commercial performance below that which was expected or projected, the royalties we expect to receive from these products will be diminished which could harm our ability to fund future operations, including conduct acquisitions, execute our planned share repurchases, or affect our ability to use funds for other general corporate purposes and cause our business to suffer.

In addition, our partners' product candidates will be restricted to the labels approved by FDA and applicable regulatory bodies, and these restrictions may limit the marketing and promotion of the ultimate products. If the approved labels are restrictive, the sales and marketing efforts for these collaboration products may be negatively affected.

Our ability to license our ENHANZE technology to our collaboration partners depends on the validity of our patents and other proprietary rights.

Patents and other proprietary rights are essential to our business. Our success will depend in part on our ability to obtain and maintain patent protection for our inventions, to preserve our trade secrets and to operate without infringing the proprietary rights of third parties. We have multiple patents and patent applications throughout the world pertaining to our recombinant human hyaluronidase and methods of use and manufacture, including an issued U.S. patent which expires in 2027 and an issued European patent which expires in 2024, which we believe cover the products and product candidates under our existing collaborations, and Hylenex. Although we believe our patent filings represent a barrier to entry for potential competitors looking to utilize these hyaluronidases, upon expiration of our patents other pharmaceutical companies may (if they do not infringe our other patents) seek to compete with us by developing, manufacturing and selling biosimilars to the active drug ingredient in our ENHANZE technology used by our collaboration partners in combination with their products. Any such loss of patent protection or proprietary rights could lead to a reduction or loss of revenues, incentivize one or more of our key ENHANZE collaboration partners to terminate their relationship with us and impact our ability to enter into new collaboration and license agreements.

Developing and marketing pharmaceutical products for human use involves significant product liability risks for which we currently have limited insurance coverage.

The testing, marketing and sale of pharmaceutical products involves the risk of product liability claims by consumers and other third parties. Although we maintain product liability insurance coverage, product liability claims can be high in the pharmaceutical industry, and our insurance may not sufficiently cover our actual liabilities. If product liability claims were to be made against us, it is possible that the liabilities may exceed the limits of our insurance policy, or our insurance carriers may deny, or attempt to deny, coverage in certain instances. If a lawsuit against us is successful, then the insurance coverage may not be sufficient and could materially and adversely affect our business and financial condition. Furthermore, various distributors of pharmaceutical products require minimum product liability insurance coverage before purchase or acceptance of products for distribution. Failure to satisfy these insurance requirements could impede our ability to achieve broad distribution of our proposed products, and higher insurance requirements could impose additional costs on us. In addition, since many of our collaboration product candidates include the pharmaceutical products of a third party, we run the risk that problems with the third party pharmaceutical product will give rise to liability claims against us.

Our operations might be interrupted by the occurrence of a natural disaster or other catastrophic event.

Our operations, including laboratories, offices and other research facilities, are located in multiple buildings in San Diego, California. We depend on our facilities and on our collaborators, contractors and vendors for the continued operation of our business. Natural disasters or other catastrophic events, interruptions in the supply of natural resources, political and governmental changes, wildfires and other fires, floods, explosions, actions of animal rights activists, earthquakes and civil unrest could disrupt our operations or those of our collaborators, contractors and vendors. Even though we believe we carry commercially reasonable business interruption and liability insurance, and our contractors may carry liability insurance that protect us in certain events, we may suffer losses as a result of business interruptions that exceed the coverage available under our and our contractors' insurance policies or for which we or our contractors do not have coverage. Any natural disaster or catastrophic event could have a significant negative impact on our operations and financial results. Moreover, any such event could delay our partners' research and development programs.

If our collaborators do not achieve projected development, clinical, or regulatory goals in the timeframes publicly announced or otherwise expected, the commercialization of our collaboration products may be delayed and, as a result, our stock price may decline, and we may face lawsuits relating to such declines.

From time to time, our collaborators may publicly articulate the estimated timing for the accomplishment of certain scientific, clinical, regulatory and other product development goals. The accomplishment of any goal is typically based on numerous assumptions, and the achievement of a particular goal may be delayed for any number of reasons both within and outside of our and our collaborators' control. If scientific, regulatory, strategic or other factors cause a collaboration partner to not meet a goal, regardless of whether that goal has been publicly articulated or not, our stock price may decline rapidly. Stock price declines may also trigger direct or derivative shareholder lawsuits. As with any litigation proceeding, the eventual outcome of any legal action is difficult to predict. If any such lawsuits occur, we will incur expenses in connection with the defense of these lawsuits, and we may have to pay substantial damages or settlement costs in connection with any resolution thereof. Although we have insurance coverage against which we may claim recovery against some of these expenses and costs, the amount of coverage may not be adequate to cover the full amount or certain expenses and costs may be outside the scope of the policies we maintain. In the event of an adverse outcome or outcomes, our business could be materially harmed from depletion of cash resources, negative impact on our reputation, or restrictions or changes to our governance or other processes that may result from any final disposition of the lawsuit. Moreover, responding to and defending pending litigation significantly diverts management's attention from our operations.

In addition, the consistent failure to meet publicly announced milestones may erode the credibility of our management team with respect to future milestone estimates.

Future acquisitions could disrupt our business and harm our financial condition.

In order to augment our product pipeline or otherwise strengthen our business, we may decide to acquire additional businesses, products and technologies. As we have limited experience in evaluating and completing acquisitions, our ability as an organization to make such acquisitions is unproven. Acquisitions could require significant capital infusions and could involve many risks, including, but not limited to, the following:

- we may have to issue additional convertible debt or equity securities to complete an acquisition, which would dilute our stockholders and could adversely affect the market price of our common stock;
- an acquisition may negatively impact our results of operations because it may require us to amortize or write down amounts related to goodwill and other intangible assets, or incur or assume substantial debt or liabilities, or it may cause adverse tax consequences, substantial depreciation or deferred compensation charges;
- we may encounter difficulties in assimilating and integrating the business, products, technologies, personnel or operations of companies that we acquire;
- certain acquisitions may impact our relationship with existing or potential collaborators who are competitive with the acquired business, products or technologies;
- acquisitions may require significant capital infusions and the acquired businesses, products or technologies may not generate sufficient value to justify acquisition costs;
- we may take on liabilities from the acquired company such as debt, legal liabilities or business risk which could be significant;
- an acquisition may disrupt our ongoing business, divert resources, increase our expenses and distract our management;
- acquisitions may involve the entry into a geographic or business market in which we have little or no prior experience; and
- key personnel of an acquired company may decide not to work for us.

If any of these risks occurred, it could adversely affect our business, financial condition and operating results. There is no assurance that we will be able to identify or consummate any future acquisitions on acceptable terms, or at all. If we do pursue any acquisitions, it is possible that we may not realize the anticipated benefits from such acquisitions or that the market will not view such acquisitions positively.

Cyberattacks, security breaches or system breakdowns may disrupt our operations and harm our operating results and reputation.

We and our partners are subject to increasingly sophisticated attempts to gain unauthorized access to our information technology storage and access systems and are devoting resources to protect against such intrusion. Cyberattacks could render us or our partners unable to utilize key systems or access important data needed to operate our business. The wrongful use, theft, deliberate sabotage or any other type of security breach with respect to any of our or any of our vendors and partners' information technology storage and access systems could result in the breakdown or other service interruption, or the disruption of our ability to use such systems or disclosure or dissemination of proprietary and confidential information that is electronically stored, including intellectual property, trade secrets, financial information, regulatory information, strategic plans, sales trends and forecasts, litigation materials or personal information belonging to us, our staff, our patients, customers and/or other business partners which could result in a material adverse impact on our business, operating results and financial condition. We continue to invest in monitoring, and other security and data recovery measures to protect our critical and sensitive data and systems. However, these may not be adequate to prevent or fully recover systems or data from all breakdowns, service interruptions, attacks or breaches of our systems. Furthermore, any physical break-in or trespass of our facilities could result in the misappropriation, theft, sabotage or any other type of security breach with respect to our proprietary and confidential information, including research or clinical data or damage to our research and development equipment and assets. Such adverse effects could be material and irrevocable to our business, operating results, financial condition and reputation.

Risks Related To Ownership of Our Common Stock

Our stock price is subject to significant volatility.

We participate in a highly dynamic industry which often results in significant volatility in the market price of common stock irrespective of company performance. The high and low sales prices of our common stock during the twelve months ended December 31, 2019 were $19.73 and $13.84, respectively. We expect our stock price to continue to be subject to significant volatility and, in addition to the other risks and uncertainties described elsewhere in this Annual Report on Form 10-K and all other risks and uncertainties that are either not known to us at this time or which we deem to be immaterial, any of the following factors may lead to a significant drop in our stock price:

- the presence of competitive products to those being developed by our partners;
- failure (actual or perceived) of our collaborators to devote attention or resources to the development or commercialization of products or product candidates licensed to such collaborator;
- a dispute regarding our failure, or the failure of one of our third party collaborators, to comply with the terms of a collaboration agreement;
- the termination, for any reason, of any of our collaboration agreements;
- the sale of common stock by any significant stockholder, including, but not limited to, direct or indirect sales by members of management or our Board of Directors;
- the resignation, or other departure, of members of management or our Board of Directors;
- general negative conditions in the healthcare industry;
- general negative conditions in the financial markets;
- the cost associated with obtaining regulatory approval for any of our collaboration product candidates;
- the failure, for any reason, to secure or defend our intellectual property position;
- the failure or delay of applicable regulatory bodies to approve our partners' product candidates;
- identification of safety or tolerability issues;
- failure of our partners' clinical trials to meet efficacy endpoints;
- suspensions or delays in the conduct of our partners' clinical trials or securing of regulatory approvals;
- adverse regulatory action with respect to our and our collaborators' products and product candidates such as loss of regulatory approval to commercialize such products, clinical holds, imposition of onerous requirements for approval or product recalls;
- our failure, or the failure of our third party collaborators, to successfully commercialize products approved by applicable regulatory bodies such as the FDA;
- our failure, or the failure of our third party collaborators, to generate product revenues anticipated by investors;
- disruptions in our clinical or commercial supply chains, including disruptions caused by problems with a bulk rHuPH20 contract manufacturer or a fill and finish manufacturer for any product or product collaboration candidate;
- the sale of additional debt and/or equity securities by us;
- our failure to obtain financing on acceptable terms or at all;
- a restructuring of our operations.
- an inability to execute our share repurchase program in the time and manner we expect due to market, business, legal or other considerations; or

- a conversion of the Convertible Notes into shares of our common stock.

Future transactions where we raise capital may negatively affect our stock price.

We are currently a "Well-Known Seasoned Issuer" and may file automatic shelf registration statements at any time with the SEC. Sales of substantial amounts of shares of our common stock or other securities under our current or future shelf registration statements could lower the market price of our common stock and impair our ability to raise capital through the sale of equity securities.

Anti-takeover provisions in our charter documents, the Indenture and Delaware law may make an acquisition of us more difficult.

Anti-takeover provisions in our charter documents, the Indenture and Delaware law may make an acquisition of us more difficult. First, our Board of Directors is classified into three classes of directors. Under Delaware law, directors of a corporation with a classified board may be removed only for cause unless the corporation's certificate of incorporation provides otherwise. Our amended and restated certificate of incorporation, as amended, does not provide otherwise. In addition, our bylaws limit who may call special meetings of stockholders, permitting only stockholders holding at least 50% of our outstanding shares to call a special meeting of stockholders. Our amended and restated certificate of incorporation does not include a provision for cumulative voting for directors. Under cumulative voting, a minority stockholder holding a sufficient percentage of a class of shares may be able to ensure the election of one or more directors. Finally, our bylaws establish procedures, including advance notice procedures, with regard to the nomination of candidates for election as directors and stockholder proposals.

These provisions in our charter documents may discourage potential takeover attempts, discourage bids for our common stock at a premium over market price or adversely affect the market price of, and the voting and other rights of the holders of, our common stock. These provisions could also discourage proxy contests and make it more difficult for stockholders to elect directors other than the candidates nominated by our board of directors.

Further, in connection with our recent Convertible Notes issuance, we entered into an indenture, dated as of November 18, 2019, ("Indenture") with The Bank of New York Mellon Trust Company, N.A., as trustee. Certain provisions in the Indenture could make it more difficult or more expensive for a third party to acquire us. For example, if a takeover would constitute a fundamental change, holders of the Convertible Notes will have the right to require us to repurchase their Convertible Notes in cash. In addition, if a takeover constitutes a make-whole fundamental change, we may be required to increase the conversion rate for holders who convert their Convertible Notes in connection with such takeover. In either case, and in other cases, our obligations under the Convertible Notes and the Indenture could increase the cost of acquiring us or otherwise discourage a third party from acquiring us or removing incumbent management

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which may prohibit large stockholders from consummating a merger with, or acquisition of, us.

These provisions may deter an acquisition of us that might otherwise be attractive to stockholders.

Risks Related to Our Industry

Our partners' products must receive regulatory approval before they can be sold, and compliance with the extensive government regulations is expensive and time consuming and may result in the delay or cancellation of collaboration product sales, introductions or modifications.

Extensive industry regulation has had, and will continue to have, a significant impact on our business. All pharmaceutical companies, including ours, are subject to extensive, complex, costly and evolving regulation by the health regulatory agencies including the FDA (and with respect to controlled drug substances, the U.S. Drug Enforcement Administration (DEA)) and equivalent foreign regulatory agencies and state and local/regional government agencies. The Federal Food, Drug and Cosmetic Act, the Controlled Substances Act and other domestic and foreign statutes and regulations govern or influence the testing, manufacturing, packaging, labeling, storing, recordkeeping, safety, approval, advertising, promotion, sale and distribution of our product and our partners' products and product candidates. We are dependent on receiving FDA and other governmental approvals, including regulatory approvals in jurisdictions outside the United States, prior to manufacturing, marketing and shipping our products. Consequently, there is always a risk that the FDA or other applicable governmental authorities, including those outside the United States, will not approve our partners' products or may impose onerous, costly and time-consuming requirements such as additional clinical or animal testing. Regulatory authorities may require that our partners' change our studies or conduct additional studies, which may significantly delay or make continued pursuit of approval commercially unattractive to our partners. For example, the approval of Baxalta's HYQVIA BLA was delayed by the FDA until we and Baxalta provided additional preclinical data sufficient to address concerns regarding non-neutralizing antibodies to rHuPH20 that were detected in the registration trial. Although these antibodies have not been associated with any known adverse clinical effects, and the HYQVIA BLA was ultimately approved by the FDA, the FDA or other foreign regulatory agency may, at any time, halt our and our collaborators' development and commercialization activities due to safety concerns. In addition, even if our product or partners' products are approved, regulatory agencies may also take post-approval action limiting or revoking our or our partners' ability to sell these products. Any of these regulatory actions may adversely affect the economic benefit we may derive from our product or our partners' products and therefore harm our financial condition.

Under certain of these regulations, in addition to our partners, we and our contract suppliers and manufacturers are subject to periodic inspection of our or their respective facilities, procedures and operations and/or the testing of products by the FDA, the DEA and other authorities, which conduct periodic inspections to confirm that we and our contract suppliers and manufacturers are in compliance with all applicable regulations. The FDA also conducts pre-approval and post-approval reviews and plant inspections to determine whether our systems, or our contract suppliers' and manufacturers' processes, are in compliance with cGMP and other FDA regulations. If our partners, we, or our contract suppliers, fail these inspections, our partners may not be able to commercialize their products in a timely manner without incurring significant additional costs, or at all.

In addition, the FDA imposes a number of complex regulatory requirements on entities that advertise and promote pharmaceuticals including, but not limited to, standards and regulations for direct-to-consumer advertising, off-label promotion, industry-sponsored scientific and educational activities, and promotional activities involving the Internet.

We may be subject, directly or indirectly, to various broad federal and state healthcare laws. If we are unable to comply, or have not fully complied, with such laws, we could face civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate.

Our business operations and activities may be directly, or indirectly, subject to various broad federal and state healthcare laws, including without limitation, anti-kickback laws, the Foreign Corrupt Practices Act (FCPA), false claims laws, civil monetary penalty laws, data privacy and security laws, tracing and tracking laws, as well as transparency laws regarding payments or other items of value provided to healthcare providers. These laws may restrict or prohibit a wide range of business activities, including, but not limited to, research, manufacturing, distribution, pricing, discounting, marketing and promotion and other business arrangements. These laws may impact, among other things, our current activities with principal investigators and research subjects, as well as sales, marketing and education programs. Many states have similar healthcare fraud and abuse laws, some of which may be broader in scope and may not be limited to items or services for which payment is made by a government health care program.

Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. While we have adopted a healthcare corporate compliance program, it is possible that governmental and enforcement authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law interpreting applicable fraud and abuse or other healthcare laws. If our operations or activities are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to, without limitation, civil, criminal and administrative penalties, damages, monetary fines, disgorgement, possible exclusion from participation in Medicare, Medicaid

and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings and curtailment or restructuring of our operations, any of which could adversely affect our ability to operate.

In addition, any sales of products outside the U.S. will also likely subject us to the FCPA and foreign equivalents of the healthcare laws mentioned above, among other foreign laws.

We may be required to initiate or defend against legal proceedings related to intellectual property rights, which may result in substantial expense, delay and/or cessation of the development and commercialization of our products.

We primarily rely on patents to protect our intellectual property rights. The strength of this protection, however, is uncertain. For example, it is not certain that:

- we will be able to obtain patent protection for our products and technologies;
- the scope of any of our issued patents will be sufficient to provide commercially significant exclusivity for our products and technologies;
- others will not independently develop similar or alternative technologies or duplicate our technologies and obtain patent protection before we do; and
- any of our issued patents, or patent pending applications that result in issued patents, will be held valid, enforceable and infringed in the event the patents are asserted against others.

We currently own or license several patents and also have pending patent applications applicable to rHuPH20 and other proprietary materials. There can be no assurance that our existing patents, or any patents issued to us as a result of our pending patent applications, will provide a basis for commercially viable products, will provide us with any competitive advantages, or will not face third party challenges or be the subject of further proceedings limiting their scope or enforceability. Any weaknesses or limitations in our patent portfolio could have a material adverse effect on our business and financial condition. In addition, if any of our pending patent applications do not result in issued patents, or result in issued patents with narrow or limited claims, this could result in us having no or limited protection against generic or biosimilar competition against our product candidates which would have a material adverse effect on our business and financial condition.

We may become involved in interference proceedings in the U.S. Patent and Trademark Office, or other proceedings in other jurisdictions, to determine the priority, validity or enforceability of our patents. In addition, costly litigation could be necessary to protect our patent position.

We also rely on trademarks to protect the names of our products (e.g. Hylenex recombinant). We may not be able to obtain trademark protection for any proposed product names we select. In addition, product names for pharmaceutical products must be approved by health regulatory authorities such as the FDA in addition to meeting the legal standards required for trademark protection and product names we propose may not be timely approved by regulatory agencies which may delay product launch. In addition, our trademarks may be challenged by others. If we enforce our trademarks against third parties, such enforcement proceedings may be expensive.

We also rely on trade secrets, unpatented proprietary know-how and continuing technological innovation that we seek to protect with confidentiality agreements with employees, consultants and others with whom we discuss our business. Disputes may arise concerning the ownership of intellectual property or the applicability or enforceability of these agreements, and we might not be able to resolve these disputes in our favor.

In addition to protecting our own intellectual property rights, third parties may assert patent, trademark or copyright infringement or other intellectual property claims against us. If we become involved in any intellectual property litigation, we may be required to pay substantial damages, including but not limited to treble damages, attorneys' fees and costs, for past infringement if it is ultimately determined that our products infringe a third party's intellectual property rights. Even if infringement claims against us are without merit, defending a lawsuit takes significant time, may be expensive and may divert management's attention from other business concerns. Further, we may be stopped from developing, manufacturing or selling our products until we obtain a license from the owner of the relevant technology or other intellectual property rights. If such a license is available at all, it may require us to pay substantial royalties or other fees.

Patent protection for protein-based therapeutic products and other biotechnology inventions is subject to a great deal of uncertainty, and if patent laws or the interpretation of patent laws change, our competitors may be able to develop and commercialize products based on our discoveries.

Patent protection for protein-based therapeutic products is highly uncertain and involves complex legal and factual questions. In recent years, there have been significant changes in patent law, including the legal standards that govern the scope of protein and biotechnology patents. Standards for patentability of full-length and partial genes, and their corresponding proteins, are changing. Recent court decisions have made it more difficult to obtain patents, by making it more difficult to satisfy the patentable subject matter requirement and the requirement of non-obviousness, have decreased the availability of injunctions against infringers, and have increased the likelihood of challenging the validity of a patent through a declaratory judgment action. Taken together,

these decisions could make it more difficult and costly for us to obtain, license and enforce our patents. In addition, the Leahy-Smith America Invents Act (HR 1249) was signed into law in September 2011, which among other changes to the U.S. patent laws, changes patent priority from "first to invent" to "first to file," implements a post-grant opposition system for patents and provides for a prior user defense to infringement. These judicial and legislative changes have introduced significant uncertainty in the patent law landscape and may potentially negatively impact our ability to procure, maintain and enforce patents to provide exclusivity for our products.

There also have been, and continue to be, policy discussions concerning the scope of patent protection awarded to biotechnology inventions. Social and political opposition to biotechnology patents may lead to narrower patent protection within the biotechnology industry. Social and political opposition to patents on genes and proteins and recent court decisions concerning patentability of isolated genes may lead to narrower patent protection, or narrower claim interpretation, for isolated genes, their corresponding proteins and inventions related to their use, formulation and manufacture. Patent protection relating to biotechnology products is also subject to a great deal of uncertainty outside the U.S., and patent laws are evolving and undergoing revision in many countries. Changes in, or different interpretations of, patent laws worldwide may result in our inability to obtain or enforce patents, and may allow others to use our discoveries to develop and commercialize competitive products, which would impair our business.

If third party reimbursement and customer contracts are not available, Hylenex and our partners' products may not be accepted in the market resulting in commercial performance below that which was expected or projected.

Our ability to earn sufficient returns on Hylenex and our partners' ability to earn sufficient returns on their products will depend in part on the extent to which reimbursement for these products and related treatments will be available from government health administration authorities, private health insurers, managed care organizations and other healthcare providers.

Third-party payors are increasingly attempting to limit both the coverage and the level of reimbursement of new drug products to contain costs. Consequently, significant uncertainty exists as to the reimbursement status of newly approved healthcare products. Third party payors may not establish adequate levels of reimbursement for the products that we and our partners commercialize, which could limit their market acceptance and result in a material adverse effect on our revenues and financial condition.

Customer contracts, such as with group purchasing organizations and hospital formularies, will often not offer contract or formulary status without either the lowest price or substantial proven clinical differentiation. If, for example, Hylenex is compared to animal-derived hyaluronidases by these entities, it is possible that neither of these conditions will be met, which could limit market acceptance and result in a material adverse effect on our revenues and financial condition.

The rising cost of healthcare and related pharmaceutical product pricing has led to cost containment pressures as well as changes in federal coverage and reimbursement policies and practices that could cause us and our partners to sell our products at lower prices, and impact access to our and our partners' products, resulting in less revenue to us.

Any of our proprietary or collaboration products that have been, or in the future are, approved by the FDA may be purchased or reimbursed by state and federal government authorities, private health insurers and other organizations, such as health maintenance organizations and managed care organizations. Such third party payors increasingly challenge pharmaceutical product pricing. The trend toward managed healthcare in the U.S., the growth of such organizations, and various legislative proposals and enactments to reform healthcare and government insurance programs, including the Medicare Prescription Drug Modernization Act of 2003, could significantly influence the manner in which pharmaceutical products are prescribed and purchased, resulting in lower prices and/or a reduction in demand. Such cost containment measures and healthcare reforms could adversely affect our ability to sell our product and our partners' ability to sell their products.

In the U.S., our business may be impacted by changes in federal reimbursement policy resulting from executive actions, federal regulations, or federal demonstration projects. For example, in May 2018, the U.S. presidential administration released a drug pricing "blueprint" and requested public comment on an array of policy ideas intended to increase competition, improve the negotiating power of the federal government, reduce drug prices and lower patient out-of-pocket costs. This blueprint includes a number of policy ideas with the potential to significantly impact, whether individually or collectively, our industry. Such proposals include moving coverage and reimbursement for Medicare Part B drugs into Medicare Part D, and instituting a competitive acquisition program for Part B drugs in which competing third-party vendors take on the financial risk of acquiring drugs and billing Medicare.

Since that time, the federal administration and/or agencies, such as CMS, have announced a number of demonstration projects, recommendations and proposals to implement various elements described in the drug pricing blueprint. CMS, the federal agency responsible for administering Medicare and overseeing state Medicaid programs and Health Insurance Marketplaces, has substantial power to implement policy changes or demonstration projects that can quickly and significantly affect how drugs, including our products, are covered and reimbursed. For example, in October 2018, President Trump announced that CMS was evaluating a pilot program proposed to initially cover fifty percent of spending on Part B single-source drugs referred to as the "International

Price Index" that would, among other things, set the Medicare payment amount for such single-source drugs to more closely align with international drug prices.

In this dynamic environment, we are unable to predict which or how many federal policy, legislative or regulatory changes may ultimately be enacted, to the extent federal government initiatives decrease or modify the coverage or reimbursement available for our or our partners' products, limit or impact our decisions regarding the pricing of biopharmaceutical products or otherwise reduce the use of our or our partners' U.S. products, such actions could have a material adverse effect on our business and results of operations.

Furthermore, individual states are considering proposed legislation and have become increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access, importation from other countries and bulk purchasing. Legally mandated price controls on payment amounts by third party payors or other restrictions could negatively and materially impact our revenues and financial condition. We anticipate that we will encounter similar regulatory and legislative issues in most other countries outside the U.S.

We also face risks relating to the reporting of pricing data that affects the reimbursement of and discounts provided for our products. Government price reporting regulations are complex and may require a manufacturer to update certain previously submitted data. If our submitted pricing data are incorrect, we may become subject to substantial fines and penalties or other government enforcement actions, which could have a material adverse effect on our business and results of operations. In addition, as a result of restating previously reported price data, we also may be required to pay additional rebates and provide additional discounts.

We face intense competition and rapid technological change that could result in the development of products by others that are competitive with or superior to our proprietary and collaboration products, including those under development.

Our proprietary and collaboration products have numerous competitors in the U.S. and abroad including, among others, major pharmaceutical and specialized biotechnology firms, universities and other research institutions that have developed competing products. Many of these competitors have substantially more resources and product development, manufacturing and marketing experience and capabilities than we do. The competitors for Hylenex recombinant include, but are not limited to, Valeant Pharmaceuticals International, Inc.'s FDA-approved product, Vitrase®, an ovine (ram) hyaluronidase, and Amphastar Pharmaceuticals, Inc.'s product, Amphadase®, a bovine (bull) hyaluronidase. For our ENHANZE technology, such competitors may include major pharmaceutical and specialized biotechnology firms. These competitors may develop technologies and products that are more effective, safer, or less costly than our current or future proprietary and collaboration products and product candidates or that could render our and our partners' products, technologies and product candidates obsolete or noncompetitive.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our administrative offices and research facilities are currently located in San Diego, California. During 2019 we leased an aggregate of approximately 80,000 square feet of office and research space, which we plan to reduce to approximately 48,000 square feet subsequent to our November 2019 restructuring. We believe our facilities are adequate for our current and near-term needs.

Item 3. Legal Proceedings

From time to time, we may be involved in disputes, including litigation, relating to claims arising out of operations in the normal course of our business. Any of these claims could subject us to costly legal expenses and, while we generally believe that we have adequate insurance to cover many different types of liabilities, our insurance carriers may deny coverage or our policy limits may be inadequate to fully satisfy any damage awards or settlements. If this were to happen, the payment of any such awards could have a material adverse effect on our consolidated results of operations and financial position. Additionally, any such claims, whether or not successful, could damage our reputation and business. We currently are not a party to any legal proceedings, the adverse outcome of which, in management's opinion, individually or in the aggregate, would have a material adverse effect on our consolidated results of operations or financial position.

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 is listed on the NASDAQ Global Select Market under the symbol "HALO." As of February 14, 2020, we had approximately 19,877 stockholders of record and beneficial owners of our common stock.

Dividends

We have never declared or paid any dividends on our common stock. We currently intend to retain available cash for funding operations and stock repurchases; therefore, we do not expect to pay any dividends on our common stock in the foreseeable future. In addition, the provisions of our borrowing arrangements limit, among other things, our ability to pay dividends and make certain other payments. Any future determination to pay dividends on our common stock will be at the discretion of our board of directors and will depend upon, among other factors, our results of operations, financial condition, capital requirements, contract restrictions, business prospects and other factors our board of directors may deem relevant.

Purchase of Equity Securities by the Issuer

In November, 2019, we announced that the Board of Directors authorized the initiation of a capital return program to repurchase up to $550.0 million of outstanding common stock a three-year period.

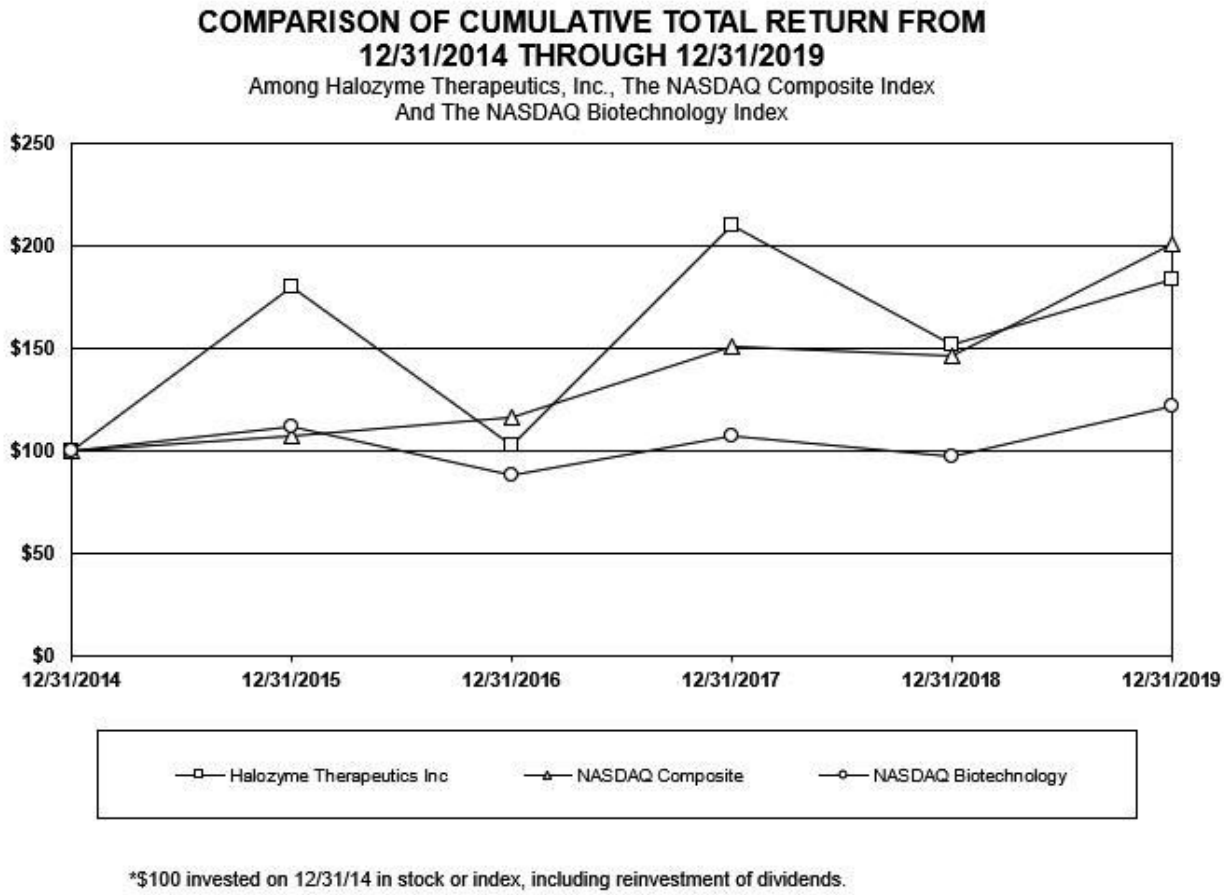
In November 2019, we repurchased approximately 8.1 million shares of common stock concurrently with the Convertible Note in privately negotiated transactions for $143.1 million and 0.4 million shares of common stock in open market purchases for $6.9 million. Also in November 2019, we entered into an Accelerated Share Repurchase (ASR) agreement with Bank of America to repurchase $50.0 million of common stock. At inception, pursuant to the agreement, we took an initial delivery of 2.1 million shares. In February 2020, we finalized the transaction and received an additional 0.5 million shares.

Period	Total Number of Shares Purchased	Weighted-Average Price paid per share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Approximate Dollar Value of Shares That May Yet Be purchased under the Programs
October 1, 2019 through October 31, 2019	—	$ —	—	$ —
November 1, 2019 through November 30, 2019 .	8,464,093	$ 17.72	8,464.093	$ 400,002
December 1, 2019 through December 31, 2019. .	—	$ —	—	$ —
Accelerated share repurchases	2,629,754	$ 19.01	2,629,754	$ 350,002
Total	11,093,847		11,093.847	

Stock Performance Graph and Cumulative Total Return

Notwithstanding any statement to the contrary in any of our previous or future filings with the SEC, the following information relating to the price performance of our common stock shall not be deemed to be "filed" with the SEC or to be "soliciting material" under the Securities Exchange Act of 1934, as amended, or the Exchange Act, and it shall not be deemed to be incorporated by reference into any of our filings under the Securities Act of 1933, as amended, or the Exchange Act, except to the extent we specifically incorporate it by reference into such filing.

The graph below compares Halozyme Therapeutics, Inc.'s cumulative five-year total shareholder return on common stock with the cumulative total returns of the NASDAQ Composite Index and the NASDAQ Biotechnology Index. The graph tracks the performance of a $100 investment in our common stock and in each of the indexes (with the reinvestment of all dividends) from December 31, 2014 to December 31, 2019. The historical stock price performance included in this graph is not necessarily indicative of future stock price performance.



	12/31/2014	12/31/2015	12/31/2016	12/31/2017	12/31/2018	12/31/2019
Halozyme Therapeutics, Inc.	$100	$180	$102	$210	$152	$184
NASDAQ Composite	$100	$107	$116	$151	$147	$200
NASDAQ Biotechnology	$100	$112	$88	$107	$97	$122

Item 6. Selected Financial Data

The selected consolidated financial data set forth below as of December 31, 2019 and 2018, and for the years ended December 31, 2019, 2018 and 2017, are derived from our audited consolidated financial statements included elsewhere in this report. This information should be read in conjunction with those consolidated financial statements, the notes thereto, and with "*Management's Discussion and Analysis of Financial Condition and Results of Operations*." The selected consolidated financial data set forth below as of December 31, 2017, 2016 and 2015, and for the years ended December 31, 2016 and 2015, are derived from our audited consolidated financial statements that are contained in reports previously filed with the SEC, not included herein.

Summary Financial Information

	Year Ended December 31,				
Statement of Operations Data:	**2019**	**2018**	**2017**	**2016**	**2015**
	(in thousands, except for per share amounts)				
Total revenues	$ 195,992	$ 151,862	$ 316,613	$ 146,691	$ 135,057
Net (loss) income	$ (72,240)	$ (80,330)	$ 62,971	$(103,023)	$ (32,231)
Net (loss) income per share, basic	$ (0.50)	$ (0.56)	$ 0.46	$ (0.81)	$ (0.25)
Net (loss) income per share, diluted	$ (0.50)	$ (0.56)	$ 0.45	$ (0.81)	$ (0.25)
Shares used in computing net (loss) income per share, basic	144,329	143,599	136,419	127,964	126,704
Shares used in computing net (loss) income per share, diluted	144,329	143,599	139,068	127,964	126,704

	As of December 31,				
Balance Sheet Data:	**2019**	**2018**	**2017**	**2016**	**2015**
			(in thousands)		
Cash and cash equivalents and available-for-sale marketable securities	$ 421,262	$ 354,526	$ 469,214	$ 204,981	$ 108,339
Working capital	$ 457,799	$ 278,488	$ 379,044	$ 201,947	$ 109,315
Total assets	$ 565,874	$ 440,248	$ 519,945	$ 261,515	$ 181,789
Deferred revenue	$ 5,259	$ 9,255	$ 60,865	$ 44,618	$ 53,223
Long-term debt, net	$ 383,045	$ 34,874	$ 125,140	$ 199,228	$ 27,971
Total liabilities	$ 474,109	$ 191,361	$ 311,579	$ 293,996	$ 138,790
Stockholders' equity (deficit)	$ 91,765	$ 248,887	$ 208,366	$ (32,481)	$ 42,999

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

In addition to historical information, the following discussion contains forward-looking statements that are subject to risks and uncertainties. Actual results may differ substantially from those referred to herein due to a number of factors, including but not limited to risks described in the Part I, Item 1A, Risks Factors, and elsewhere in this Annual Report. References to "Notes" are Notes included in our Notes to Consolidated Financial Statements.

Overview

Halozyme Therapeutics Inc. is a biopharma technology platform company that provides innovative and disruptive solutions with the goal of improving patient experience and outcomes. Our proprietary enzyme rHUPH20 is used to facilitate the delivery of injected drugs and fluids. We license our technology to biopharmaceutical companies to collaboratively develop products that combine our ENHANZE® drug delivery technology with the collaborators' proprietary compounds.

Our approved product and our collaborators' approved products and product candidates are based on rHuPH20, our patented recombinant human hyaluronidase enzyme. rHuPH20 is the active ingredient in our first commercially approved product, Hylenex® recombinant, and it works by breaking down hyaluronan (or HA), a naturally occurring carbohydrate that is a major component of the extracellular matrix in tissues throughout the body such as skin and cartilage. This temporarily increases dispersion and absorption allowing for improved subcutaneous delivery of injectable biologics, such as monoclonal antibodies and other large therapeutic molecules, as well as small molecules and fluids. We refer to the application of rHuPH20 to facilitate the delivery of other drugs or fluids as our ENHANZE® Drug Delivery Technology (ENHANZE). We license the ENHANZE technology to form collaborations with biopharmaceutical companies that develop or market drugs requiring or benefiting from injection via the subcutaneous route of administration. In the development of proprietary intravenous (IV) drugs combined with our ENHANZE technology, data have been generated supporting the potential for ENHANZE to reduce treatment burden, as a result of shorter duration of subcutaneous (SC) administration. ENHANZE may enable fixed-dose SC dosing compared to weight-based dosing required for IV administration, and potentially allow for lower rates of infusion related reactions. Lastly, certain proprietary drugs co-formulated with ENHANZE have been granted additional exclusivity, extending the patent life of the product beyond the one of the proprietary IV drug.

We currently have ENHANZE collaborations with F. Hoffmann-La Roche, Ltd. and Hoffmann-La Roche, Inc. (Roche), Baxalta US Inc. and Baxalta GmbH (now members of the Takeda group of companies, following the acquisition of Shire plc by Takeda Pharmaceutical Company Limited in January 2019) (Baxalta), Pfizer Inc. (Pfizer), Janssen Biotech, Inc. (Janssen), AbbVie, Inc. (AbbVie), Eli Lilly and Company (Lilly), Bristol-Myers Squibb Company (BMS), Alexion Pharma Holding (Alexion) and ARGENX BVBA (argenx). We receive royalties from two of these collaborations, including royalties from sales of one product from the Baxalta collaboration and two products from the Roche collaboration. Future potential revenues from the sales and/or royalties of our approved products, product candidates, and ENHANZE collaborations will depend on the ability of Halozyme and our collaborators to develop, manufacture, secure and maintain regulatory approvals for approved products and product candidates and commercialize product candidates.

On November 4, 2019, we announced that our HALO-301 Phase 3 clinical study evaluating PEGPH20 in combination with ABRAXANE and gemcitabine as a first-line therapy for treatment of patients with metastatic pancreatic cancer failed to reach the primary endpoint of overall survival. The study failed to demonstrate an improvement in overall survival compared to gemcitabine and nab-paclitaxel alone (11.2 months median overall survival compared to 11.5 months, HR=1.00, p=0.9692). Due to the results of the study, we halted development activities for PEGPH20, closed our oncology operations and implemented an organizational restructuring to focus our operations on ENHANZE.

We closed all ongoing oncology clinical studies including the Phase 3 clinical testing for PEGPH20 with ABRAXANE and gemcitabine in stage IV pancreatic ductal adenocarcinoma ("PDA") (HALO-301) and the Phase 1b/2 clinical testing for PEGPH20 with Tecentriq in patients with cholangiocarcinoma and gall bladder cancer (HALO 110-101/MATRIX). The Roche -Genentech sponsored MORPHEUS PDA and gastric cancer studies closed the arms containing PEGPH20 to enrollment. All patients who were treated in PEGPH20 arms are off PEGPH20 treatment and are in follow up, per study protocol.

Our 2019 and recent key events are as follows:

- In November 2019, we entered into an Accelerated Share Repurchase (ASR) agreement with Bank of America to repurchase $50.0 million of common stock. At inception we took an initial delivery of 2.1 million shares. In February 2020, we finalized the transaction and received an additional 0.5 million shares.
- In November 2019, we completed the sale of $460.0 million aggregate principal amount of Convertible Senior Notes due 2024.
- In November 2019, we announced the initiation of a capital return program, to repurchase up to $550.0 million of our outstanding common stock over a three-year period.
- In November 2019, following the results of our HALO-301 study, we announced strategic actions to reposition the Company with a focus solely on ENHANZE. Headcount will be reduced by approximately 55% or approximately 160 positions. Upon completion of the restructuring and after recording all related one-time charges, we anticipate becoming a sustainably profitable company, beginning in the second quarter of 2020.
- In November 2019, we announced that our HALO-301 study, a Phase 3 clinical study evaluating PEGylated recombinant human hyaluronidase (PEGPH20) in combination with ABRAXANE® (nab-paclitaxel) and gemcitabine as a first-line therapy for treatment of patients with metastatic pancreatic cancer failed to reach the primary endpoint of overall survival. The study failed to demonstrate an improvement in overall survival compared to gemcitabine and nab-paclitaxel alone (11.2 months median overall survival compared to 11.5 months, HR=1.00, p=0.9692).
- In October 2019, Roche nominated a new undisclosed target to be studied using ENHANZE technology, triggering a $10 million milestone payment.
- In October 2019, BMS initiated a Phase 1 study for Relatlimab in combination with nivolumab and ENHANZE Technology.
- In September 2019, Roche announced that the global Phase 3 FeDeriCa study met its primary endpoint. The FeDeriCa study investigated a fixed-dose combination of pertuzumab (Perjeta®) and trastuzumab (Herceptin®) for subcutaneous administration using Halozyme's ENHANZE drug delivery technology in combination with intravenous chemotherapy. The study results demonstrated non-inferior levels of Perjeta in the blood (pharmacokinetics) compared to standard intravenous (IV) infusion of Perjeta plus Herceptin and chemotherapy in patients with HER2-positive early breast cancer. The study also demonstrated that the safety profile of the fixed dose subcutaneous combination of Perjeta and Herceptin was consistent with the safety profile of Perjeta and Herceptin administered intravenously.
- In August 2019, Roche initiated a Phase 1 study evaluating OCREVUS® (ocrelizumab) with ENHANZE Technology in subjects with multiple sclerosis.
- In July 2019, Janssen announced that it submitted a Biological License Application (BLA) to the U.S. Food and Drug Administration (FDA) and an extension application to the European Medicines Agency (EMA) for the subcutaneous delivery of DARZALEX (daratumumab) for patients with multiple myeloma. Janssen's regulatory submissions follow the announcement of positive results from its phase 3 COLUMBA study, which investigated subcutaneously administered DARZALEX in comparison to intravenous DARZALEX in patients with relapsed or refractory multiple myeloma.
- In July 2019, argenx dosed the first subject in a phase 1 clinical trial evaluating the safety, pharmacokinetics and pharmacodynamics of efgartigimod (ARGX-113), using ENHANZE technology, triggering a $5.0 million milestone payment.
- In June 2019, we announced a Cooperative Research and Development Agreement (CRADA) with the National Institute of Allergy and Infectious Diseases' Vaccine Research Center (VRC), part of National Institute of Health, enabling the VRC's use of ENHANZE technology to develop subcutaneous formulations of broadly neutralizing antibodies (bnAbs) against HIV for HIV treatment.
- In May 2019, argenx nominated a second target to be studied using ENHANZE technology, a human complement factor C2 associated with the product candidate ARGX-117, which is being developed to treat severe autoimmune diseases, triggering a $10.0 million payment.

- In February 2019, we announced that Genentech, a member of the Roche Group, received approval from the FDA for Herceptin Hylecta™ (trastuzumab and hyaluronidase-oysk), a co-formulation of trastuzumab and rHuPH20 marketed as Herceptin SC outside of the U.S. Herceptin Hylecta is approved for the treatment of certain people with HER2-positive early breast cancer and is a ready-to-use formulation that can be administered in two to five minutes, compared to 30 to 90 minutes for intravenous trastuzumab. In April 2019, Roche made Herceptin Hylecta available in the U.S.
- In February 2019, Janssen's development partner, Genmab, announced positive Phase 3 trial results from the COLUMBA study evaluating subcutaneous DARZALEX® in comparison to DARZALEX IV in patients with relapsed and refractory multiple myeloma. DARZALEX SC (utilizing ENHANZE technology) was found to be non-inferior to DARZALEX IV with regard the co-primary endpoints of Overall Response Rate and Maximum Trough concentration.
- In February 2019, we entered into an agreement with argenx for the right to develop and commercialize one exclusive target, the human neonatal Fc receptor FcRn, which includes argenx's lead asset efgartigimod (ARGX-113), and an option to select two additional targets using our ENHANZE technology for an upfront payment of $30.0 million. We will receive payments of $10.0 million per target for future target nominations and potential milestone payments of up to $160.0 million per target, subject to the achievement of specific development, regulatory and sales-based milestones. We will receive mid-single digit royalties on sales of commercialized products.

Results of Operations

Comparison of Years Ended December 31, 2019 and 2018

Royalties – Royalty revenue was $69.9 million in 2019 compared to $79.0 million in 2018 . The decrease was mainly driven by lower sales of Herceptin SC by Roche, partially offset by higher sales of RITUXAN HYCELA in the U.S. by Roche and higher sales of HyQvia by Baxalta. In general, we expect royalty revenue to decline in the near term prior to our next ENHANZE partner product launch, primarily attributable to the ongoing impact from biosimilars in Europe.

Product Sales, Net – Product sales, net were as follows (in thousands):

	Year Ended December 31,			
	2019	2018	Dollar Change	Percentage Change
Sales of bulk rHuPH20:				
Janssen	$ 31,956	$ 2,510	29,446	1,173%
Roche	6,963	6,767	196	3%
Baxalta	5,657	1,820	3,837	211%
Other	3,709	1,632	2,077	127%
Sales of ENHANZE drug product	768	460	308	67%
Sales of Hylenex	16,995	15,045	1,950	13%
Total product sales, net	$ 66,048	$ 28,234	$ 37,814	134%

Product sales, net increased $37.8 million in 2019 compared to 2018, primarily due to an increase in the sale of bulk rHuPH20 to Janssen, in addition to an increase in sales of bulk rHuPH20 to Baxalta and an increase in sales of Hylenex. We expect that product sales of bulk rHuPH20 and ENHANZE drug product will fluctuate in future periods based on the needs of our collaborators. We expect that future product sales of Hylenex to be flat as we experience modest market growth offset by competition for market share.

Revenues Under Collaborative Agreements – Revenues under collaborative agreements were as follows (in thousands):

	Year Ended December 31,			
	2019	2018	Dollar Change	Percentage Change
Upfront license fees, license fees for the election of additional targets, event-based payments, license maintenance fees and amortization of deferred upfront and other license fees:				
argenx	$ 45,000	—	$ 45,000	100 %
Roche	10,000	31,000	(21,000)	(68)%
Other	3,500	11,336	(7,836)	(69)%
Subtotal	58,500	42,336	16,164	38 %
Reimbursements for research and development services:	1,545	2,311	(766)	(33)%
Total revenues under collaborative agreements	$ 60,045	$ 44,647	$ 15,398	34 %

Revenue from license fees increased $16.2 million in 2019, compared to 2018 mainly due to $45.0 million recognized in connection with the argenx Collaboration in 2019, offset by a reduction of milestones earned from other collaboration agreements. Revenue from upfront licenses fees, license fees for the election of additional targets, license maintenance fees and other license fees and event-based payments vary from period to period based on our ENHANZE collaboration activity. We expect these revenues to continue to fluctuate in future periods based on our collaborators' ability to meet various clinical and regulatory milestones set forth in such agreements and our abilities to obtain new collaborative agreements.

Revenue from reimbursements for research and development services decreased in 2019, compared to the same period in 2018 mainly due to a decrease in services provided to Janssen and Roche. Research and development services rendered by us on behalf of our collaborators are at the request of the collaborators; therefore, the amount and timing of future revenues related to reimbursable research and development services is uncertain.

Cost of Product Sales –Cost of product sales were $45.5 million in 2019 compared to $10.1 million in 2018. The increase of $35.4 million in cost of product sales was mainly due to an increase in sales of bulk rHuPH20 to Janssen. There were $1.5 million of costs of bulk rHuPH20 and ENHANZE drug product sales in 2019 that were previously expensed as research and development.

Research and Development – Research and development expenses consist of external costs, salaries and benefits and allocation of facilities and other overhead expenses related to research manufacturing, clinical trials, preclinical and regulatory activities. Research and development expenses incurred were as follows (in thousands):

	Year Ended December 31,			
	2019	2018	Dollar Change	Percentage Change
Programs				
PEGPH20	$ 103,150	131,064	$ (27,914)	(21)%
Restructuring	17,201	—	17,201	100 %
ENHANZE collaborations and rHuPH20 platform	18,896	17,242	1,654	10 %
Other	1,584	1,946	(362)	(19)%
Total research and development expenses	$ 140,831	$ 150,252	$ (9,421)	(6)%

Research and development expenses relating to our PEGPH20 programs for 2019 decreased by 21%, compared to the same period in 2018, primarily due to decreased clinical trial activities resulting from the completion of enrollment of HALO-301 in December 2018 and decreased clinical trial activities related to the close out of the HALO-202 study and the HALO 107-101 study, partially offset by an increase in clinical trial activities in the HALO 110-101/MATRIX study. On November 4, 2019, we announced that the HALO-301 clinical study failed to reach the primary endpoint of overall survival. As a result, we halted development activities for PEGPH20, closed our oncology operations and began the close out process for all our clinical trials. We began to implement an organizational restructuring to focus our operations solely on ENHANZE, which will result in a reduction in research and development expenses in the near term. In the fourth quarter of 2019 we incurred restructuring and other one-time charges of $17.2 million, of which $12.0 million related to personnel costs and $5.2 million related to asset impairments and contract cancellations. Refer to Note 13 to the Financial Statements for further details on the organizational restructuring.

Research and development expenses relating to our ENHANZE collaborations and our rHuPH20 platform for 2019 increased by 10%, compared to 2018, primarily due to increased costs to support new partners and targets related to our ENHANZE collaboration activity, partially offset by a decrease in support for one-time partner research and development projects. We expect research and development expenses relating to our ENHANZE collaborations and our rHuPH20 platform to increase in the near term as the rHuPH20 platform is burdened with a higher allocation of overhead costs. The rHuPH20 platform includes research, development and manufacturing expenses related to our proprietary rHuPH20 enzyme. These expenses were not designated to a specific program at the time the expenses were incurred.

Selling, General and Administrative – Selling, general and administrative (SG&A) expenses were $77.3 million in 2019 compared to $60.8 million in 2018. The increase of $16.5 million, or 27%, was primarily due to an increase in compensation expense, including stock compensation, and an increase in commercial expenses related to market research and educational activities as we prepared for a potential commercial launch of PEGPH20. On November 4, 2019, we announced that the HALO-301 clinical study failed to reach the primary endpoint of overall survival. As a result, we halted development activities for PEGPH20, closed our oncology operations and began to implement an organizational restructuring to focus our operations solely on ENHANZE, which will result in a reduction in commercialization activities and compensation expense in the near term. In the fourth quarter of 2019 we incurred restructuring and other one-time charges of $11.2 million, of which $7.5 million related to personnel costs and $3.7 million related to asset impairments and contract cancellations. Refer to Note 13 to the Financial Statements for further details on the organizational restructuring.

Interest Expense – Interest expense was $11.6 million in 2019 compared to $18.0 million in 2018. The decrease of $6.4 million was primarily due to a decrease in the Royalty-backed Loan principal balance, offset by an increase in $0.7 million of interest expense related to the Convertible Notes.

Income Taxes – Income tax benefit was $11 thousand for 2019, compared to income tax expense of $0.5 million for 2018 due to a decrease in estimated state taxes. The 2018 amount was comprised primarily of state income tax. The U.S. federal AMT was eliminated via the Tax Cuts and Jobs Act that was enacted on December 22, 2017. The AMT credit carryovers will be used to offset regular tax liability for any taxable year beginning after 2017. If not utilized before 2022, any remaining AMT credit carryforward amount is fully refundable. The remaining AMT credit carryforward of $1.7 million was recognized as a deferred tax asset at December 31, 2018 as realization is certain. For the year ended December 31, 2018, we generated taxable income in the U.S., which was offset by utilizing net operating losses carried forward from earlier years.

Comparison of Years Ended December 31, 2018 and 2017

For discussion related to changes in financial condition and the results of operations for fiscal year 2018 compared to fiscal year 2017, refer to Part II - Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations included in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2018, which was filed with the SEC on February 21, 2019.

Liquidity and Capital Resources

Our principal sources of liquidity are our existing cash, cash equivalents and available-for-sale marketable securities. As of December 31, 2019, we had cash, cash equivalents and marketable securities of $421.3 million. On November 4, 2019, we announced a significant workforce reduction and our intention to solely focus on ENHANZE. Upon completion of the restructuring and after recording all related one-time charges, we anticipate becoming a sustainably profitable company, beginning in the second quarter of 2020.

We believe that our current cash, cash equivalents and marketable securities will be sufficient to fund our operations for at least the next twelve months. We expect to fund our operations going forward with existing cash resources, anticipated revenues from our existing collaborations and cash that we may raise through future transactions. We may raise cash through any one of the following financing vehicles: (i) new collaborative agreements; (ii) expansions or revisions to existing collaborative relationships; (iii) private financings; (iv) other equity or debt financings; (v) monetizing assets; and/or (vi) the public offering of securities.

In May 2017, we completed an underwritten public offering pursuant to which we sold 11.5 million shares of common stock, generating $134.9 million in net proceeds, after deducting underwriting discounts and commissions and other offering expenses. We may, in the future, offer and sell additional equity, debt securities and warrants to purchase any of such securities, either individually or in units to raise capital to raise funds for additional working capital, capital expenditures, share repurchases, acquisitions or for other general corporate purposes.

Cash Flows

Operating Activities

Net cash used in operations was $85.4 million in 2019 compared to $49.5 million in 2018. The $35.9 million increase in utilization of cash in operations was mainly due to an increase in working capital spend in 2019 compared to the corresponding period in the prior year, offset by an increase in cash received related to the argenx license fees of $40.0 million.

Investing Activities

Net cash used in investing activities was $5.5 million in 2019 compared to $2.5 million net cash provided by investing activities in 2018. The increase in net cash used in investing activities was primarily due to an increase in purchase of marketable securities in 2019, offset by a decrease in purchase of property and equipment.

Financing Activities

Net cash provided by financing activities was $153.2 million in 2019, compared to net cash used in financing activities of $63.8 million in 2018, mainly due to the net proceeds from issuance of the Convertible Notes of $447.4 million and a $0.5 million increase in net proceeds from the issuance of common stock under equity incentive plans, offset by an increase in the amount long-term debt repayment of $30.6 million due to the settlement of our loan with Oxford Finance and SVB and the repurchase of shares of $200.0 million in 2019.

Share Repurchases

The Board of Directors approved a share repurchase program, pursuant to which we may repurchase our issued and outstanding shares of common stock from time to time. The Company retired the repurchased shares. See *Note 8. Stockholders' Equity*, within the notes to the consolidated financial statements for additional information regarding our share repurchases.

Long-Term Debt

Convertible Notes

In November 2019, we completed the sale of $460.0 million in aggregate principal amount of 1.25% Convertible Senior Notes due in 2024 (Convertible Notes) in a private placement to qualified institutional buyers. We received net proceeds from the offering of approximately $447.4 million. We used $200.0 million of the net proceeds from the offering to repurchase shares of our common stock, including approximately $143.1 million to repurchase approximately 8.1 million shares of common stock concurrently with the offering in privately negotiated transactions, $6.9 million in open market purchases and $50.0 million to repurchase approximately 2.6 million shares of common stock through an accelerated share repurchase agreement.

We used approximately $26.1 million of the net proceeds from the offering to repay all outstanding amounts under our loan agreement with Oxford Finance and Silicon Valley Bank and intend to use the remainder of the net proceeds for general corporate purposes, including additional share repurchases subsequent to the offering, and working capital.

The Convertible Notes will pay interest semi-annually in arrears on June 1st and December 1st of each year, beginning on June 1, 2020, at an annual rate of 1.25% and will be convertible into cash, shares of common stock or a combination of cash and shares of common stock, at our election, based on the applicable conversion rate at such time. The Convertible Notes are general unsecured obligations and will rank senior in right of payment to all indebtedness that is expressly subordinated in right of payment to the Convertible Notes, will rank equally in right of payment with all existing and future liabilities that are not so subordinated, will be effectively junior to any secured indebtedness to the extent of the value of the assets securing such indebtedness and will be structurally subordinated to all indebtedness and other liabilities (including trade payables) of our current or future subsidiaries.

Holders may convert their Convertible Notes at their option only in the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on March 31, 2020, if the last reported sale price per share of common stock exceeds 130% of the conversion price for each of at least 20 trading days during the 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter; (2) during the five consecutive business days immediately after any five consecutive trading day period (such five consecutive trading day period, the "measurement period") in which the trading price per $1,000 principal amount of notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price per share of Company's common stock on such trading day and the conversion rate on such trading day; (3) upon the occurrence of certain corporate events or distributions on Company's common stock, as described in the offering memorandum; (4) if we call such notes for redemption; and (5) at any time from, and including, June 1, 2024 until the close of business on the scheduled trading day immediately before the maturity date of December 1, 2024. The Convertible Notes will be convertible, regardless of the foregoing circumstances, at any time from, and including, June 1, 2024 until the close of business on the scheduled trading day immediately preceding the maturity date.

Upon conversion, we will pay or deliver, as applicable, cash, shares of common stock or a combination of cash and shares of common stock, at our election. The initial conversion rate for the Convertible Notes will be 41.9208 shares of common stock per $1,000 in principal amount of Convertible Notes, equivalent to a conversion price of approximately $23.85 per share of our common stock. The conversion rate is subject to adjustment as described in the Indenture.

Royalty-backed Loan

In January 2016, through our wholly-owned subsidiary Halozyme Royalty LLC (Halozyme Royalty), we received a $150 million loan (the Royalty-backed Loan) pursuant to a credit agreement (the Credit Agreement) with BioPharma Credit Investments IV Sub, LP and Athyrium Opportunities II Acquisition LP (the Royalty-backed Lenders). Under the terms of the Credit Agreement, Halozyme Therapeutics, Inc. transferred to Halozyme Royalty the right to receive royalty payments from the commercial sales of ENHANZE products owed under the Roche Collaboration and Baxalta Collaboration (Collaboration Agreements). The royalty payments from the Collaboration Agreements will be used to repay the principal and interest on the loan (the Royalty Payments). The Royalty-backed Loan bears interest at a per annum rate of 8.75% plus the three-month LIBOR rate. The three-month LIBOR rate is subject to a floor of 0.7% and a cap of 1.5%. The interest rate as of December 31, 2019 was 10.25%. The outstanding balance of the Royalty-backed Loan net of unamortized discount as of December 31, 2019 was $19.5 million.

The Credit Agreement provides that none of the Royalty Payments were required to be applied to the Royalty-backed Loan prior to January 1, 2017, 50% of the Royalty Payments were required to be applied to the Royalty-backed Loan between January 1, 2017 and January 1, 2018 and thereafter all Royalty Payments must be applied to the Royalty-backed Loan. However, the amounts available to repay the Royalty-backed Loan are subject to caps of $13.75 million per quarter in 2017, $18.75 million per quarter in 2018, $21.25 million per quarter in 2019 and $22.5 million per quarter in 2020 and thereafter. Amounts available to repay the Royalty-backed Loan will be applied first, to pay interest and second, to repay principal on the Royalty-backed Loan. Any accrued interest that is not paid on any applicable quarterly payment date, as defined, will be capitalized and added to the principal balance of the Royalty-backed Loan on such date. Halozyme Royalty will be entitled to receive and distribute to Halozyme any Royalty Payments that are not required to be applied to the Royalty-backed Loan or which are in excess of the foregoing caps.

The final maturity date of the Royalty-backed Loan will be the earlier of (i) the date when principal and interest is paid in full, (ii) the termination of Halozyme Royalty's right to receive royalties under the Collaboration Agreements, and (iii) December 31, 2050. Currently, we estimate that the loan will be repaid in the second quarter of 2020. This estimate could be adversely affected and the repayment period could be extended if future royalty amounts are less than currently expected. Under the terms of the Credit Agreement, at any time after January 1, 2019, Halozyme Royalty may, subject to certain limitations, prepay the outstanding principal of the Royalty-backed Loan in whole or in part, at a price equal to 105% of the outstanding principal on the Royalty-backed Loan, plus accrued but unpaid interest. The Royalty-backed Loan constitutes an obligation of Halozyme Royalty, and is non-recourse to Halozyme. Halozyme Royalty retains its right to the Royalty Payments following repayment of the loan.

Oxford and SVB Loan and Security Agreement

In June 2016, we entered into a Loan and Security Agreement (the Loan Agreement) with Oxford Finance LLC (Oxford) and Silicon Valley Bank (SVB) (collectively, the Lenders), providing a senior secured loan facility of up to an aggregate principal amount of $70.0 million, comprising a $55.0 million draw in June 2016 and an additional $15.0 million tranche, which we had the option to draw during the second quarter of 2017 and did not exercise. The proceeds were partially used to pay the outstanding principal and final payment owed on a previous loan agreement with the Lenders. The remaining proceeds were used for working capital and general business requirements. The Loan Agreement repayment schedule provided for interest only payments for the first 18 months, followed by consecutive equal monthly payments of principal and interest in arrears through the maturity date of January 1, 2021. The Loan Agreement provided for a final payment equal to 5.50% of the initial $55 million principal amount. The final payment was due when the Loan Agreement becomes due or upon the prepayment of the facility. We had the option to prepay the outstanding balance of the Loan Agreement in full and exercised this option in November 2019, at which point we paid the full remaining balance and final payment of $26.1 million satisfying and discharging all obligations under, and terminating, the Loan Agreement.

Off-Balance Sheet Arrangements

As of December 31, 2019, we did not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. In addition, we did not engage in

trading activities involving non-exchange traded contracts. As such, we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in such relationships.

Contractual Obligations

As of December 31, 2019, future minimum payments due under our contractual obligations are as follows (in thousands):

	Payments Due by Period				
Contractual Obligations	**Total**	**Less than 1 Year**	**1-3 Years**	**4-5 Years**	**More than 5 Years**
Long-term debt, including current portion[1]	$ 479,560	$ 19,560	$ —	$460,000	$ —
Interest on long-term debt[2]	29,540	6,540	11,500	11,500	—
Operating leases[3]	7,244	3,355	3,819	70	—
Third-party manufacturing obligations[4]	36,333	36,333	—	—	—
Purchase obligations	622	377	245	—	—
Total	$ 553,299	$ 66,165	$ 15,564	$471,570	$ —

(1). Long-term debt consists of the Royalty-backed Loan and the Convertible Notes. Obligations include future quarterly principal payments for the Royalty-backed Loan based on an estimate of future royalty amounts. This estimate could be adversely affected and the repayment period could be extended if future royalty amounts are less than currently expected.

(2). Interest on long-term debt includes quarterly interest payments on the Royalty-backed Loan and semi-annual interest payments on the Convertible Note. The Royalty-backed Loan bears interest at a per annum rate of 8.75% plus the three-month LIBOR rate. The three-month LIBOR rate is subject to a floor of 0.7% and a cap of 1.5%. Future interest obligations for the Royalty-backed Loan were estimated using rates in effect as of December 31, 2019. The Convertible Note bears interest at an annual rate of 1.25%.

(3). Includes minimum lease payments related to leases of our office and research facilities and certain autos under non-cancelable operating leases.

(4). We have contracted with third-party manufacturers for the supply of bulk rHuPH20 and fill/finish of Hylenex recombinant. Under these agreements, we are required to purchase certain quantities each year during the terms of the agreements. The amounts presented represent our estimates of the minimum required payments under these agreements.

Contractual obligations for purchases of goods or services include agreements that are enforceable and legally binding to us and that specify all significant terms, including fixed or minimum quantities to be purchased; fixed, minimum or variable price provisions; and the approximate timing of the transaction. For obligations with cancellation provisions, the amounts included in the preceding table were limited to the non-cancelable portion of the agreement terms or the minimum cancellation fee.

For certain restricted stock units and performance stock units granted, the number of shares issued on the date the restricted stock units vest is net of the minimum statutory withholding requirements that we pay in cash to the appropriate taxing authorities on behalf of our employees. The obligation to pay the relevant taxing authority is not included in the preceding table, as the amount is contingent upon continued employment. In addition, the amount of the obligation is unknown, as it is based in part on the market price of our common stock when the awards vest.

The expected timing of payments of the obligations above is estimated based on current information. Timing of payments and actual amounts paid may be different, depending on the time of receipt of goods or services, or changes to agreed-upon amounts for some obligations.

Our future capital uses and requirements depend on numerous forward-looking factors. These factors may include, but are not limited to, the following:

- the rate of progress and cost of research and development activities;
- the number and scope of our research and development activities;
- the costs of filing, prosecuting, defending and enforcing any patent claims and other intellectual property rights;
- our ability to establish and maintain product discovery and development collaborations, including scale-up manufacturing costs for our collaborators' product candidates;
- the amount of royalties and milestones from our collaborators;
- the amount of product sales for Hylenex recombinant;
- the costs of obtaining and validating additional manufacturers of rHuPH20;
- the effect of competing technological and market developments;
- the terms and timing of any collaborative, licensing and other arrangements that we may establish; and
- the extent to which we acquire or in-license new products, technologies or businesses.

Critical Accounting Estimates

The discussion and analysis of our financial condition and results of operations are based on our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles, or U.S. GAAP. The preparation of our consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities. We review our estimates on an ongoing basis. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities. Actual results may differ from these estimates under different assumptions or conditions. Our significant accounting policies are outlined in Note 2 to the Consolidated Financial Statements included in the Form 10-K. We believe the following accounting policies to be critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Revenue Recognition

Methodology	*Judgment and Uncertainties*	*Effect if Actual Results Differ From Assumptions*
For collaborative agreements, we are entitled to receive event-based payments subject to the collaboration partner's achievement of specified development and regulatory milestones. We recognize revenue when it is deemed probable that these milestones will be achieved, which could be in a period prior to its actual occurrence. At the end of each reporting period, we re-evaluate the probability of achievement of such milestones, and if necessary, adjust our estimate of the overall transaction price.	Revenue is recognized when we determine it is probable a milestone will be achieved. This assessment is based on our past experience with our collaboration partners, market insight and partner communication.	A revenue reversal will be required in the event it is determined that achievement of a milestone, previously deemed probable, will not occur. This reversal may be material.

Revenue Recognition

Methodology	*Judgment and Uncertainties*	*Effect if Actual Results Differ From Assumptions*
For collaborative agreements, royalty revenue is recognized in the period the underlying sales occur, but we do not receive final royalty reports from our collaboration partners until after we complete our financial statements for a prior quarter. Therefore, we recognize revenue based on estimates of the royalty earned, which are based on preliminary reports provided by our collaboration partners.	The amount of royalty revenue recognized for the quarter is estimated using our knowledge of past royalty payments, market insight and an estimate made by our collaboration partners provided in a preliminary report.	A final royalty report and associated royalty payment is received approximately 60 days after quarter-end. If necessary, a true-up is recorded at that time if there is a difference from the initial estimated royalty revenue recorded. To date, the true-up entries have not been material.
For collaborative arrangements, when necessary, we perform an allocation of the upfront amount based on relative stand-alone selling prices (SSP) of licenses for individual targets. We determine license SSP using an income-based valuation approach utilizing risk-adjusted discounted cash flow projections.	The inputs used in the valuation model to determine SSP are based on estimates utilizing market data and information provided by our collaboration partners.	Differences in the allocation of the transaction price between delivered and undelivered performance obligations can impact the timing of revenue recognition but do not change the total revenue recognized under any agreement.

Debt Classification

Methodology	*Judgment and Uncertainties*	*Effect if Actual Results Differ From Assumptions*
The short-term and long-term classification of outstanding debt represents our best estimate of the timing of the amounts to be repaid. These estimates are based on contractual obligations, anticipated timing of royalty payments received and changes in LIBOR interest rates.	Royalty payments are estimated using partner insight to the marketplace, historical trends and our knowledge of the therapeutic space.	The short-term and long-term portion of the debts may change and the repayment term may be shortened or extended depending on the actual level of royalty payments received. The actual repayment period could vary materially from our estimate to the extent that royalty payments from our partners are lower than our current estimates, which could arise due to factors beyond our control, such as competitive factors, decreased market acceptance or a failure by our partners to successfully commercialize in territories where regulatory approval has been received. Currently, we do not believe that we have significant amount of risk relative to the repayment of the debt. A 10% reduction in the amount of anticipated royalties would not change our expected repayment period at maximum contractual interest rates.

Share-Based Payments

Methodology	*Judgment and Uncertainties*	*Effect if Actual Results Differ From Assumptions*
We maintain a Stock Incentive Plan, which provides for share-based payment awards, including stock options, restricted stock and performance awards. We determine the fair value of our stock option awards and performance awards at the date of grant using a Black-Scholes model. We determine the fair value of our restricted stock awards at the date of grant using the closing market value of our common stock on the date of grant.	Option-pricing models and generally accepted valuation techniques require management to make assumptions and to apply judgment to determine the fair value of our awards. These assumptions and judgments include estimating the future volatility of our stock price, expected dividend yield and future employee stock option exercise behaviors. Changes in these assumptions can materially affect the fair value estimate. Our performance awards require management to make assumptions regarding the likelihood of achieving long-term Company goals.	We do not currently believe there is a reasonable likelihood that there will be a material change in estimates or assumptions we use to determine stock-based compensation expense. However, if actual results are not consistent with our estimates or assumptions, we may be exposed to changes in share-based compensation expense that could be material. If actual results are not consistent with the assumptions used, the share-based compensation expense reported in our financial statements may not be representative of the actual economic cost of the share-based compensation. A 10% change in our share-based compensation expense for the year ended December 31, 2019 would have affected pre-tax earnings by approximately $3.5 million in 2019.

Recent Accounting Pronouncements

Refer to Note 2, *Summary of Significant Accounting Policies*, of our consolidated financial statements for a discussion of recent accounting pronouncements and their effect, if any, on us.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

As of December 31, 2019, our cash equivalents and marketable securities consisted of investments in money market funds, asset-backed securities, U.S. Treasury securities, corporate debt obligations and commercial paper. These investments were made in accordance with our investment policy which specifies the categories, allocations, and ratings of securities we may consider for investment. The primary objective of our investment activities is to preserve principal while at the same time maximizing the income we receive without significantly increasing risk. Some of the financial instruments that we invest in could be subject to market risk. This means that a change in prevailing interest rates may cause the value of the instruments to fluctuate. For example, if we purchase a security that was issued with a fixed interest rate and the prevailing interest rate later rises, the value of that security will probably decline. Based on our current investment portfolio as of December 31, 2019, we do not believe that our results of operations would be materially impacted by an immediate change of 10% in interest rates.

We do not hold or issue derivatives, derivative commodity instruments or other financial instruments for speculative trading purposes. Further, we do not believe our cash, cash equivalents and marketable securities have significant risk of default or illiquidity. We made this determination based on discussions with our investment advisors and a review of our holdings. While we believe our cash, cash equivalents and marketable securities do not contain excessive risk, we cannot provide absolute assurance that in the future our investments will not be subject to adverse changes in market value. All of our cash equivalents and marketable securities are recorded at fair market value.

Item 8. Financial Statements and Supplementary Data

Our financial statements are annexed to this report beginning on page F-1.

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

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the timelines specified in the Securities and Exchange Commission's rules and forms, and that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decision regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognized that any controls and procedures, no matter how well designed and operated, can only provide reasonable assurance of achieving the desired control objectives, and in reaching a reasonable level of assurance, management necessarily was required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of our disclosure controls and procedures, as such term is defined under Rule 13a-15(e) promulgated under the Securities Exchange Act of 1934, as amended. Based on this evaluation, our principal executive officer and our principal financial officer concluded that our disclosure controls and procedures were effective as of the end of the period covered by this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There have been no significant changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2019 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and Rule 15d-15(f) promulgated under the Exchange Act as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our board of directors, management and other personnel, 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 and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;
- 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 are being made only in accordance with authorizations of our management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our financial statements.

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.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013 framework) (the COSO criteria). Based on our assessment, management concluded that, as of December 31, 2019, our internal control over financial reporting is effective based on the COSO criteria. The independent registered public accounting firm that audited the consolidated financial statements that are included in this Annual Report on Form 10-K has issued an audit report on the effectiveness of our internal control over financial reporting as of December 31, 2019. The report appears below.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Halozyme Therapeutics, Inc.

Opinion on Internal Control over Financial Reporting

We have audited Halozyme Therapeutics, 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, Halozyme Therapeutics, 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 the Company as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive (loss) income, cash flows, and stockholders' equity (deficit) for each of the three years in the period ended December 31, 2019, and the related notes and the financial statement schedule listed in the Index at Item 15(a) and our report dated February 24, 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 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 and 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

San Diego, California
February 24, 2020

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item regarding directors is incorporated by reference to our definitive Proxy Statement (the Proxy Statement) to be filed with the Securities and Exchange Commission in connection with our 2020 Annual Meeting of Stockholders under the heading "Election of Directors." The information required by this item regarding compliance with Section 16(a) of the Securities Exchange Act of 1934, as amended, is incorporated by reference to the information under the caption "Compliance with Section 16(a) of the Exchange Act" to be contained in the Proxy Statement. The information required by this item regarding our code of ethics is incorporated by reference to the information under the caption "Code of Conduct and Ethics and Corporate Governance Guidelines" to be contained in the Proxy Statement. The information required by this item regarding our audit committee is incorporated by reference to the information under the caption "Board Meetings and Committees—Audit Committee" to be contained in the Proxy Statement. The information required by this item regarding material changes, if any, to the process by which stockholders may recommend nominees to our board of directors is incorporated by reference to the information under the caption "Board Meetings and Committees—Nominating and Governance Committee" to be contained in the Proxy Statement.

Executive Officers

Helen I. Torley, M.B. Ch. B., M.R.C.P. (57), President, Chief Executive Officer and Director. Dr. Torley joined Halozyme in January 2014 as President and Chief Executive Officer and as a member of Halozyme's Board of Directors. Throughout her career, Dr. Torley has led several successful product launches, including Kyprolis®, Prolia®, Sensipar®, and Miacalcin®. Prior to joining Halozyme, Dr. Torley served as Executive Vice President and Chief Commercial Officer for Onyx Pharmaceuticals (Onyx) from August 2011 to December 2013 overseeing the collaboration with Bayer on Nexavar® and Stivarga® and the U.S. launch of Kyprolis. She was responsible for the development of Onyx's commercial capabilities in ex-US markets and in particular, in Europe. Prior to Onyx, Dr. Torley spent 10 years in management positions at Amgen Inc., most recently serving as Vice President and General Manager of the US Nephrology Business Unit from 2003 to 2009 and the U.S. Bone Health Business Unit from 2009 to 2011. From 1997 to 2002, she held various senior management positions at Bristol-Myers Squibb, including Regional Vice President of Cardiovascular and Metabolic Sales and Head of Cardiovascular Global Marketing. She began her career at Sandoz/ Novartis, where she ultimately served as Vice President of Medical Affairs, developing and conducting post-marketing clinical studies across all therapeutic areas, including oncology. Dr. Torley serves on the board of directors of Quest Diagnostics Incorporated, a diagnostic information services company. Within the past five years, Dr. Torley served on the board of directors of Relypsa, Inc., a biopharmaceutical company. Before joining the industry, Dr. Torley was in medical practice as a senior registrar in rheumatology at the Royal Infirmary in Glasgow, Scotland. Dr. Torley received her Bachelor of Medicine and Bachelor of Surgery degrees (M.B. Ch.B.) from the University of Glasgow and is a Member of the Royal College of Physicians (M.R.C.P).

Laurie D. Stelzer (52), Senior Vice President, Chief Financial Officer. Ms. Stelzer joined Halozyme in June 2015 as Senior Vice President, Chief Financial Officer. Prior to joining Halozyme, Ms. Stelzer served from April 2014 to January 2015 as the Senior Vice President of Finance supporting R&D, Technical Operations and M&A at Shire, Inc., a biopharmaceutical company. Prior to that she was the Division CFO for the Regenerative Medicine Division and the Head of Investor Relations at Shire from March 2012 to April 2014. Prior to Shire, Ms. Stelzer held positions of increasing responsibility for 15 years at Amgen, Inc., a biopharmaceutical company, including Interim Treasurer, Head of Emerging Markets Expansion, Executive Director of Global Commercial Finance and Head of Global Accounting. Early in her career, she held various finance and accounting positions in the real estate and banking industries. Ms. Stelzer serves on the board of directors of Surface Oncology, Inc., an immuno-oncology company. Ms. Stelzer received her MBA from the Anderson School at the University of California, Los Angeles, and a Bachelor of Science in Accounting from Arizona State University.

Masaru Matsuda (49), Senior Vice President, General Counsel, Chief Compliance Officer & Secretary. Mr. Matsuda joined Halozyme in August 2018 as Vice President, Associate General Counsel and Chief Compliance Officer and has served as Senior Vice President, General Counsel, Chief Compliance Officer and Secretary since January 2020. Prior to joining Halozyme, Mr. Matsuda held positions of increasing responsibility in the Law Department at Amgen Inc., a biopharmaceutical company, from May 2000 to August 2018, most recently as Vice President, Law, Global Commercial Operations. Prior to joining Amgen, Mr. Matsuda was an associate attorney at Orrick, Herrington & Sutcliffe LLP from June 1998 to April 2000, and at Pillsbury Winthrop Shaw Pittman LLP from June 1996 to June 1998. Mr. Matsuda received his Juris Doctor from the University of California, Hastings College of the Law and his Bachelor of Science Degree in Business Administration from the University of Southern California.

Michael J. LaBarre (56), Senior Vice President, Chief Technical Officer. Dr. LaBarre joined Halozyme in June 2008 as Vice President, Product Development and has served in various officer positions most recently as Senior Vice President, Chief Technical Officer since January 2020. Prior to joining Halozyme, Dr. LaBarre served as Vice President, Product Development at Paramount BioSciences, a pharmaceutical company, from April 2006 to June 2008. Prior to that he served as Director, Analytical and Protein Biochemistry, Discovery Research at Biogen Idec, a pharmaceutical company, from December 2003 to April 2006. He also served in various research and development roles at IDEC Pharmaceuticals Corporation, a pharmaceutical company, from November 1995 to December 2003 most recently as Director, Analytical and Formulation Sciences, R&D. Prior to joining IDEC, Dr. LaBarre held research and development positions at various pharmaceutical companies from July 1992 to November 1995. Dr. LaBarre received his Ph.D. in Chemistry from the University of Arizona and his B.S. in Chemistry from Southampton College of Long Island University.

Item 11. Executive Compensation

The information required by this item is incorporated by reference to the information under the caption "*Executive Compensation*" to be contained in the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Other than as set forth below, the information required by this item is incorporated by reference to the information under the caption "*Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters*" to be contained in the Proxy Statement.

Equity Compensation Plan Information

The following table summarizes our compensation plans under which our equity securities are authorized for issuance as of December 31, 2019:

Plan Category	Number of Shares to be Issued upon Exercise of Outstanding Options and Restricted Stock Units (a)	Weighted Average Exercise Price of Outstanding Options[2] (b)	Number of Shares Remaining Available for Future Issuance under Equity Compensation Plans (Excluding Shares Reflected in Column (a)) (c)
Equity compensation plans approved by stockholders[1]	13,640,668	$14.72	9,352,360
Equity compensation plans not approved by stockholders . . .	—	—	—
	13,640,668	$14.72	9,352,360

(1) Represents stock options, restricted stock units, and performance restricted stock units under the Amended and Restated 2011 Stock Plan, and 2008 Stock Plan.

(2) This amount does not include restricted stock units and performance restricted stock units as there is no exercise price for such units.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item is incorporated by reference to the information under the caption "*Certain Relationships and Related Transactions*" and *"Corporate Governance - Director Independence"* to be contained in the Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information required by this item is incorporated by reference to the information under the caption "*Principal Accounting Fees and Services*" to be contained in the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Documents filed as part of this report.

1. Financial Statements

2. List of all Financial Statement schedules.

The following financial statement schedule of Halozyme Therapeutics, Inc. is filed as part of this Annual Report on Form 10-K and should be read in conjunction with the consolidated financial statements of Halozyme Therapeutics, Inc.

All other schedules are omitted because they are not applicable or the required information is shown in the Financial Statements or notes thereto.

3. List of Exhibits required by Item 601 of Regulation S-K. See part (b) below.

(b) Exhibits.

Exhibit Number	Exhibit Title	Filed Herewith	Incorporated by Reference	
			Form	Date Filed
3.1	Amended and Restated Certification of Incorporation		8-K	5/3/2019
3.2	Bylaws, as amended		8-K	12/19/2016
4.1	Indenture, dated November 18, 2019, between The Bank of New York Mellon Trust Company, N.A., as trustee, and the Registrant		8-K	11/18/2019
4.2	Form of Note, dated November 18, 2019, between the Bank of New York Mellon Trust Company, N.A., as trustee, and the Registrant		8-K	11/18/2019
4.3	Description of Securities	X		
10.1	License Agreement between University of Connecticut and Registrant, dated November 15, 2002		SB-2	4/23/2004
10.2	First Amendment to the License Agreement between University of Connecticut and Registrant, dated January 9, 2006		8-K	1/12/2006
10.3#	Halozyme Therapeutics, Inc. 2008 Stock Plan		8-K	3/19/2008
10.4#	Form of Stock Option Agreement (2008 Stock Plan)		10-Q	8/7/2009
10.5#	Form of Restricted Stock Agreement (2008 Stock Plan)		10-Q	8/7/2009
10.6#	Halozyme Therapeutics, Inc. 2011 Stock Plan (as amended through May 2, 2018)		8-K	4/6/2018
10.7#	Form of Stock Option Agreement (2011 Stock Plan)		8-K	5/6/2011
10.8#	Form of Stock Option Agreement for Executive Officers (2011 Stock Plan)		8-K	5/6/2011
10.9#	Form of Restricted Stock Units Agreement for Officers (2011 Stock Plan)		10-Q	8/10/2015
10.10#	Form of Restricted Stock Award Agreement for Officers (2011 Stock Plan)		10-Q	8/10/2015
10.11#	Form of Restricted Stock Units Agreement (2011 Stock Plan)		8-K	5/6/2011
10.12#	Form of Restricted Stock Award Agreement (2011 Stock Plan)		8-K	5/6/2011
10.13#	Form of Stock Option Agreement (2011 Stock Plan -grants made on or after 11/4/2015)		10-Q	11/9/2015
10.14#	Form of Restricted Stock Units Agreement (2011 Stock Plan - grants made on or after 11/4/2015)		10-Q	11/9/2015
10.15#	Form of Restricted Stock Award Agreement (2011 Stock Plan - grants made on or after 11/4/2015)		10-Q	11/9/2015
10.16#	Form of Restricted Stock Units Agreement (2011 Plan - grants made on or after 2/22/2017)		10-K	2/28/2017
10.17#	Form of Indemnity Agreement for Directors and Executive Officers		8-K	12/20/2007

Exhibit Number	Exhibit Title	Filed Herewith	Incorporated by Reference	
			Form	Date Filed
10.18#	Severance Policy		8-K	12/13/2018
10.19#	Form of Amended and Restated Change In Control Agreement with Officer		10-Q	11/9/2015
10.20	Lease (11404 and 11408 Sorrento Valley Road), effective as of June 10, 2011		8-K	6/16/2011
10.21	First Amendment to Lease (11404 and 11408 Sorrento Valley Road), dated June 30, 2017		8-K	7/5/2017
10.22	Second Amendment to Lease (11404 and 11408 Sorrento Valley Road), dated March 23, 2018		10-Q	5/10/2018
10.23	Amended and Restated Lease (11388 Sorrento Valley Road), effective as of June 10, 2011		8-K	6/16/2011
10.24	First Amendment to Amended and Restated Lease (11388 Sorrento Valley Road), dated June 30, 2017		8-K	7/5/2017
10.25	Second Amendment to Amended and Restated Lease (11388 Sorrento Valley Road), dated March 23, 2018		10-Q	5/10/2018
10.26	Lease (11436 Sorrento Valley Road), effective as of April 2013		10-K	3/1/2013
10.27	First Modification to Lease (11436 Sorrento Valley Road)		10-Q	5/8/2013
10.28	Second Modification to Lease (11436 Sorrento Valley Road), dated June 30, 2017		8-K	7/5/2017
10.29#	Halozyme Therapeutics, Inc. Executive Incentive Plan		DEF-14 A	3/23/2016
21.1	Subsidiaries of Registrant	X		
23.1	Consent of Independent Registered Public Accounting Firm	X		
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended	X		
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and 15d-14(a) of the Securities Exchange Act of 1934, as amended	X		

Exhibit Number	Exhibit Title	Filed Herewith	Incorporated by Reference	
			Form	Date Filed
32	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002	X		
101.INS	XBRL Instance Document - the instance document does not appear in the interactive Data File because its XBRL tags are embedded within the Inline XBRL document.	X		
101.SCH	XBRL Taxonomy Extension Schema	X		
101.CAL	XBRL Taxonomy Extension Calculation Linkbase	X		
101.DEF	XBRL Taxonomy Extension Definition Linkbase	X		
101.LAB	XBRL Taxonomy Extension Label Linkbase	X		
101.PRE	XBRL Taxonomy Presentation Linkbase	X		
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)	X		

# Indicates management contract or compensatory plan or arrangement.

(c) Financial Statement Schedules. See Item 15(a) 2 above.

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.

Halozyme Therapeutics, Inc.,
a Delaware corporation

Date: February 24, 2020

By: /s/ Helen I. Torley, M.B. Ch.B., M.R.C.P.
Helen I. Torley, M.B. Ch.B., M.R.C.P.
President and Chief Executive Officer

POWER OF ATTORNEY

Know all persons by these presents, that each person whose signature appears below constitutes and appoints Helen I. Torley and Laurie D. Stelzer, and each of them, as his/her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him/her and in his/her name, place, and stead, in any and all capacities, to sign any and all amendments to this Annual Report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he/she might or could do in person, hereby ratifying and confirming that all said attorneys-in-fact and agents, or any of them or their or his/her substitute or substituted, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual 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/ Helen I. Torley, M.B. Ch.B., M.R.C.P. Helen I. Torley, M.B. Ch.B., M.R.C.P.	President and Chief Executive Officer (Principal Executive Officer), Director	February 24, 2020
/s/ Laurie D. Stelzer Laurie D. Stelzer	Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 24, 2020
/s/ Connie L. Matsui Connie L. Matsui	Chair of the Board of Directors	February 24, 2020
/s/ Jean-Pierre Bizzari Jean-Pierre Bizzari	Director	February 24, 2020
/s/ Bernadette Connaughton Bernadette Connaughton	Director	February 24, 2020
/s/ James M. Daly James M. Daly	Director	February 24, 2020
/s/ Jeffrey W. Henderson Jeffrey W. Henderson	Director	February 24, 2020
/s/ Kenneth J. Kelley Kenneth J. Kelley	Director	February 24, 2020
/s/ Matthew L. Posard Matthew L. Posard	Director	February 24, 2020

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders
Halozyme Therapeutics, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Halozyme Therapeutics, Inc. (the Company) as of December 31, 2019 and 2018, and the related consolidated statements of operations, comprehensive (loss) income, stockholders' equity (deficit) and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the financial statement schedule listed in the Index at Item 15(a) (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements referred to above, 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 24, 2020 expressed an unqualified opinion thereon.

Adoption of ASU No. 2014-09

As discussed in Note 2 to the consolidated financial statements, the Company changed its method for recognizing revenue as a result of the adoption of Accounting Standards Update (ASU) No. 2014-09, *Revenue from Contracts with Customers* (Topic 606), and the amendments in ASUs 2015-14, 2016-08, 2016-10 and 2016-12 effective January 1, 2018.

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.

Estimation of Overall Transaction Price for Collaboration Agreements	
Description of the Matter	At December 31, 2019 the Company has nine collaboration agreements. As discussed in Notes 2 and 4 of the financial statements, amounts are included in the transaction price when management determines that it is probable that the amount will not result in a significant reversal of revenue in the future. During 2019, the Company recognized $5.5 million of variable consideration in the transaction price under their collaboration arrangements. Auditing management's conclusions related to determining the probability of achievement of milestones is complex and highly judgmental as a result of the uncertainties and limited visibility by the Company into the progression of developing and commercializing the combined targets as completed by the collaboration partners
How We Addressed the Matter in Our Audit	We obtained an understanding and evaluated the design and tested the operating effectiveness of controls over the Company's process to routinely evaluate the probability of achievement of milestones and any related constraint for each collaboration, in addition to the controls over the completeness and accuracy of determining the population of agreements and potential milestone payments. To test the milestone amounts included, or excluded, from the transaction price, we performed audit procedures that included, among others, observing the quarterly meetings with accounting and Alliance Managers discussing the status of each collaboration. For each milestone, we examined available evidence including correspondence with the collaboration partner and evaluated management's conclusions on the probabilities of achievement. We reviewed supporting documentation to corroborate that milestones were included in the transaction price when determined to be probable of achievement. We reviewed the collaboration agreements and related amendments to validate the completeness of the list of targets and potential milestone payments that management considered in their analysis. We performed a lookback analysis to validate the company's accuracy of determining the probability of achieving these milestones.

Accounting for Convertible Senior Notes	
Description of the Matter	On November 18, 2019 the Company issued $460 million of Convertible Senior Notes due 2024. As discussed in Note 6 of the financial statements, the Convertible Notes include conversion terms that require the Company to account for the debt and equity components of the Convertible Notes separately including allocating value to the debt component with the remaining value allocated to the equity component reflected as a debt discount to be amortized to interest expense over the terms of the notes. Auditing management's conclusions related to the value allocated to the debt portion of the Convertible Note is complex and involves estimation to determine the effective yield that the Company would have received on the debt issuance had it not included in the conversion feature.

How We Addressed the Matter in Our Audit	We obtained an understanding and evaluated the design and tested the operating effectiveness of controls over the Company's process to determine the valuation allocation between debt and equity components, including the valuation model and assumptions. To test the value assigned to each component, we performed audit procedures that included, among others, evaluating the Company's use of independent valuation specialist, and the valuation methodology. In addition, we involved our valuation specialists to assist in testing the concluded effective yield used to determine the value allocated to the debt component by performing an independent credit analysis including comparison to market rates for similarly rated instruments. We also tested the completeness and accuracy of the calculation used to estimate the fair value of the debt component.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2006.

San Diego, California
February 24, 2020

HALOZYME THERAPEUTICS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except per share amounts)

	December 31, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 120,179	$ 57,936
Marketable securities, available-for-sale	301,083	296,590
Accounts receivable, net	59,442	30,005
Inventories	29,359	22,625
Prepaid expenses and other assets	33,373	20,693
Total current assets	543,436	427,849
Property and equipment, net	10,855	7,465
Prepaid expenses and other assets	11,083	4,434
Restricted cash	500	500
Total assets	$ 565,874	$ 440,248
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,434	$ 4,079
Accrued expenses	55,649	49,529
Deferred revenue, current portion	4,012	4,247
Current portion of long-term debt, net	19,542	91,506
Total current liabilities	85,637	149,361
Deferred revenue, net of current portion	1,247	5,008
Long-term debt, net	383,045	34,874
Other long-term liabilities	4,180	2,118
Commitments and contingencies (Note 9)		
Stockholders' equity:		
Preferred stock - $0.001 par value; 20,000 shares authorized; no shares issued and outstanding	—	—
Common stock - $0.001 par value; 300,000 shares authorized; 136,713 and 144,725 shares issued and outstanding at December 31, 2019 and 2018, respectively	137	145
Additional paid-in capital	695,066	780,457
Accumulated other comprehensive loss	240	(277)
Accumulated deficit	(603,678)	(531,438)
Total stockholders' equity	91,765	248,887
Total liabilities and stockholders' equity	$ 565,874	$ 440,248

See accompanying notes to consolidated financial statements.

HALOZYME THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Year Ended December 31,		
	2019	**2018**	**2017**
Revenues:			
Royalties	$ 69,899	$ 78,981	$ 63,507
Product sales, net	66,048	28,234	50,396
Revenues under collaborative agreements	60,045	44,647	202,710
Total revenues	195,992	151,862	316,613
Operating expenses:			
Cost of product sales	45,546	10,136	31,152
Research and development	140,804	150,252	150,643
Selling, general and administrative	77,252	60,804	53,816
Total operating expenses	263,602	221,192	235,611
Operating (loss) income	(67,610)	(69,330)	81,002
Other income (expense):			
Investment and other income, net	6,986	7,578	2,592
Interest expense	(11,627)	(18,041)	(21,984)
(Loss) income before income taxes	(72,251)	(79,793)	61,610
Income tax expense (benefit)	(11)	537	(1,361)
Net (loss) income	$ (72,240)	$ (80,330)	$ 62,971
Net (loss) income per share:			
Basic	$ (0.50)	$ (0.56)	$ 0.46
Diluted	$ (0.50)	$ (0.56)	$ 0.45
Shares used in computing net (loss) income per share:			
Basic	144,329	143,599	136,419
Diluted	144,329	143,599	139,068

See accompanying notes to consolidated financial statements.

HALOZYME THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME
(In thousands)

	Year Ended December 31,		
	2019	2018	2017
Net (loss) income	$ (72,240)	$ (80,330)	$ 62,971
Other comprehensive (loss) income:			
Unrealized gain (loss) on marketable securities	508	182	(430)
Foreign currency translation adjustment	9	(8)	(14)
Unrealized loss on foreign currency	—	(1)	—
Total comprehensive (loss) income	$ (71,723)	$ (80,157)	$ 62,527

See accompanying notes to consolidated financial statements.

HALOZYME THERAPEUTICS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2019	**2018**	**2017**
Operating activities:			
Net (loss) income	$ (72,240)	$ (80,330)	$ 62,971
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:			
Share-based compensation	34,776	35,696	30,670
Depreciation and amortization	4,068	2,388	2,161
Amortization of debt discount	2,484	1,545	1,761
(Accretion of discounts) amortization of premiums on marketable securities, net	(2,469)	(3,090)	(303)
Loss on disposal of equipment	1,431	5	46
Deferral of unearned revenue	—	3,000	22,759
Recognition of deferred revenue	(3,996)	(2,832)	(6,512)
Lease payments (deferred) recognized	(459)	(7)	13
Loss on impairment of right-of-use asset	1,127	—	—
Recognition of deferred rent	—	—	(185)
Loss on extinguishment of debt	401	—	—
Other	(7)	(9)	(16)
Changes in operating assets and liabilities:			
Accounts receivable, net	(29,437)	11,613	(6,453)
Inventories	(6,734)	(17,480)	9,477
Prepaid expenses and other assets	(19,006)	(5,695)	2,035
Accounts payable and accrued expenses	4,638	5,696	15,629
Net cash (used in) provided by operating activities	(85,423)	(49,500)	134,053
Investing activities:			
Purchases of marketable securities	(389,759)	(311,112)	(398,187)
Proceeds from maturities of marketable securities	388,250	318,268	235,805
Purchases of property and equipment	(4,040)	(4,663)	(1,350)
Net cash provided by (used in) investing activities	(5,549)	2,493	(163,732)
Financing activities:			
Proceeds from issuance of common stock, net	—	—	134,874
Proceeds from issuance of long-term debt, net	447,350	—	—
Repayment of long-term debt	(108,082)	(77,516)	(15,995)
Payment of debt issuance cost	(279)	—	—
Repurchase of common stock	(199,998)	—	—
Proceeds from issuance of common stock under equity incentive plans, net of taxes paid related to net share settlement	14,224	13,719	12,776
Net cash provided by (used in) financing activities	153,215	(63,797)	$ 131,655
Net increase (decrease) in cash, cash equivalents and restricted cash	62,243	(110,804)	101,976
Cash, cash equivalents and restricted cash at beginning of period	58,436	169,240	67,264
Cash, cash equivalents and restricted cash at end of period	$ 120,679	$ 58,436	$ 169,240

	Year Ended December 31,		
	2019	2018	2017
Supplemental disclosure of cash flow information:			
Interest paid	$ 9,029	$ 16,891	$ 20,295
Income taxes paid	$ 188	$ 220	$ 3,015
Supplemental disclosure of non-cash investing and financing activities:			
Amounts accrued for purchases of property and equipment	$ 61	$ 542	$ 189
Debt issuance cost included in accounts payable	$ 68	$ —	$ —
Right-of-use assets obtained in exchange for lease obligation	$ 897	$ —	$ —
Leasehold improvements paid by lessor	$ —	$ 1,322	$ 13

See accompanying notes to consolidated financial statements.

HALOZYME THERAPEUTICS, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands)

	Common Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Stockholders' Equity (Deficit)
	Shares	Amount				
BALANCE AT JANUARY 1, 2017	129,502	$ 130	$ 552,737	$ (6)	$ (585,342)	$ (32,481)
Share-based compensation expense	—	—	30,670	—	—	30,670
Issuance of common stock for cash, net	11,500	11	134,863	—	—	134,874
Issuance of common stock pursuant to exercise of stock options and vesting of restricted stock units, net	1,796	2	12,774	—	—	12,776
Cancellation of restricted stock awards, net	(9)	—	—	—	—	—
Other comprehensive income	—	—	—	(444)	—	(444)
Net income	—	—	—	—	62,971	62,971
BALANCE AT DECEMBER 31, 2017	142,789	143	731,044	(450)	(522,371)	208,366
Adjustment to beginning retained earnings	—	—	—	—	71,263	71,263
Share-based compensation expense	—	—	35,696	—	—	35,696
Issuance of common stock pursuant to exercise of stock options and vesting of restricted stock units and performance restricted stock units, net	1,932	2	13,717	—	—	13,719
Issuance of restricted stock awards, net	4	—	—	—	—	—
Other comprehensive loss	—	—	—	173	—	173
Net loss	—	—	—	—	(80,330)	(80,330)
BALANCE AT DECEMBER 31, 2018	144,725	145	780,457	(277)	(531,438)	248,887
Share-based compensation expense	—	—	34,776	—	—	34,776
Issuance of common stock pursuant to exercise of stock options and vesting of restricted stock units and performance restricted stock units, net	2,493	2	14,222	—	—	14,224
Issuance of restricted stock awards, net	74	—	—	—	—	—
Repurchase of common stock	(10,579)	(10)	(199,988)			(199,998)
Equity component of convertible notes			65,599			65,599
Other comprehensive income	—	—	—	517		517
Net loss	—	—	—	—	(72,240)	(72,240)
BALANCE AT DECEMBER 31, 2019	136,713	137	695,066	240	(603,678)	91,765

See accompanying notes to consolidated financial statements.

1. Organization and Business

Halozyme Therapeutics Inc. is a biopharma technology platform company that provides innovative and disruptive solutions with the goal of improving patient experience and outcomes. Our proprietary enzyme rHUPH20 is used to facilitate the delivery of injected drugs and fluids. We license our technology to biopharmaceutical companies to collaboratively develop products that combine our ENHANZE® drug delivery technology with the collaborators' proprietary compounds.

Our approved product and our collaborators' approved products and product candidates are based on rHuPH20, our patented recombinant human hyaluronidase enzyme. rHuPH20 is the active ingredient in our first commercially approved product, Hylenex® recombinant ("Hylenex"), and it works by breaking down hyaluronan (or "HA"), a naturally occurring carbohydrate that is a major component of the extracellular matrix in tissues throughout the body such as skin and cartilage. This temporarily increases dispersion and absorption allowing for improved subcutaneous delivery of injectable biologics, such as monoclonal antibodies and other large therapeutic molecules, as well as small molecules and fluids. We refer to the application of rHuPH20 to facilitate the delivery of other drugs or fluids as our ENHANZE® Drug Delivery Technology ("ENHANZE"). We license the ENHANZE technology to form collaborations with biopharmaceutical companies that develop or market drugs requiring or benefiting from injection via the subcutaneous route of administration. In the development of proprietary intravenous (IV) drugs combined with our ENHANZE technology, data have been generated supporting the potential for ENHANZE to reduce treatment burden, as a result of shorter duration of subcutaneous (SC) administration. ENHANZE may enable fixed-dose SC dosing compared to weight-based dosing required for IV administration, and potentially allow for lower rates of infusion related reactions. Lastly, certain proprietary drugs co-formulated with ENHANZE have been granted additional exclusivity, extending the patent life of the product beyond the one of the proprietary IV drug.

We currently have ENHANZE collaborations with F. Hoffmann-La Roche, Ltd. and Hoffmann-La Roche, Inc. ("Roche"), Baxalta US Inc. and Baxalta GmbH (now members of the Takeda group of companies, following the acquisition of Shire plc by Takeda Pharmaceutical Company Limited in January 2019) ("Baxalta"), Pfizer Inc. ("Pfizer"), Janssen Biotech, Inc. ("Janssen"), AbbVie, Inc. ("AbbVie"), Eli Lilly and Company ("Lilly"), Bristol-Myers Squibb Company ("BMS"), Alexion Pharma Holding ("Alexion") and ARGENX BVBA ("argenx"). We receive royalties from two of these collaborations, including royalties from sales of one product from the Baxalta collaboration and two products from the Roche collaboration. Future potential revenues from the sales and/or royalties of our approved products, product candidates, and ENHANZE collaborations will depend on the ability of Halozyme and our collaborators to develop, manufacture, secure and maintain regulatory approvals for approved products and product candidates and commercialize product candidates.

On November 4, 2019, we announced that our HALO-301 Phase 3 clinical study evaluating PEGPH20 in combination with ABRAXANE and gemcitabine as a first-line therapy for treatment of patients with metastatic pancreatic cancer failed to reach the primary endpoint of overall survival. The study failed to demonstrate an improvement in overall survival compared to gemcitabine and nab-paclitaxel alone (11.2 months median overall survival compared to 11.5 months, HR=1.00, p=0.9692). Due to the results of the study, we halted development activities for PEGPH20, closed our oncology operations and implemented an organizational restructuring to focus our operations on ENHANZE.

We closed all ongoing oncology clinical studies including the Phase 3 clinical testing for PEGPH20 with ABRAXANE and gemcitabine in stage IV pancreatic ductal adenocarcinoma ("PDA") (HALO-301) and the Phase 1b/2 clinical testing for PEGPH20 with Tecentriq in patients with cholangiocarcinoma and gall bladder cancer (HALO 110-101/MATRIX). The Roche -Genentech sponsored MORPHEUS PDA and gastric cancer studies closed the arms containing PEGPH20 to enrollment. All patients who were treated in PEGPH20 arms are off PEGPH20 treatment and are in follow up, per study protocol.

Except where specifically noted or the context otherwise requires, references to "Halozyme," "the Company," "we," "our," and "us" in these notes to consolidated financial statements refer to Halozyme Therapeutics, Inc. and its wholly owned subsidiary, Halozyme, Inc., and Halozyme, Inc.'s wholly owned subsidiaries, Halozyme Holdings Ltd., Halozyme Royalty LLC, Halozyme Switzerland GmbH and Halozyme Switzerland Holdings GmbH.

2. Summary of Significant Accounting Policies

Basis of Presentation

The consolidated financial statements include the accounts of Halozyme Therapeutics, Inc. and our wholly owned subsidiary, Halozyme, Inc., and Halozyme, Inc.'s wholly owned subsidiaries, Halozyme Holdings Ltd., Halozyme Royalty LLC, Halozyme Switzerland GmbH and Halozyme Switzerland Holdings GmbH. All intercompany accounts and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles ("U.S. GAAP") requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. On an ongoing basis, we evaluate our estimates and judgments, which are based on historical and anticipated results and trends and on various other assumptions that management believes to be reasonable under the circumstances. By their nature, estimates are subject to an inherent degree of uncertainty and, as such, actual results may differ from management's estimates.

Cash Equivalents and Marketable Securities

Cash equivalents consist of highly liquid investments, readily convertible to cash, that mature within ninety days or less from the date of purchase. As of December 31, 2019, our cash equivalents consisted of money market funds.

Marketable securities are investments with original maturities of more than ninety days from the date of purchase that are specifically identified to fund current operations. Marketable securities are considered available-for-sale. These investments are classified as current assets, even though the stated maturity date may be one year or more beyond the current balance sheet date which reflects management's intention to use the proceeds from the sale of these investments to fund our operations, as necessary. Such available-for-sale investments are carried at fair value with unrealized gains and losses recorded in other comprehensive income (loss) and included as a separate component of stockholders' equity (deficit). The cost of marketable securities is adjusted for amortization of premiums or accretion of discounts to maturity, and such amortization or accretion is included in investment and other income, net in the consolidated statements of operations. We use the specific identification method for calculating realized gains and losses on marketable securities sold. Realized gains and losses and declines in value judged to be other-than-temporary on marketable securities, if any, are included in investment and other income, net in the consolidated statements of operations.

Restricted Cash

Under the terms of the leases of our facilities, we are required to maintain letters of credit as security deposits during the terms of such leases. At December 31, 2019 and 2018, restricted cash of $0.5 million was pledged as collateral for the letters of credit.

Fair Value of Financial Instruments

The authoritative guidance for fair value measurements establishes a three tier fair value hierarchy, which prioritizes the inputs used in measuring fair value. These tiers include: Level 1, defined as observable inputs such as quoted prices in active markets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions.

Our financial instruments include cash equivalents, available-for-sale marketable securities, accounts receivable, prepaid expenses and other assets, accounts payable, accrued expenses and long-term debt. Fair value estimates of these instruments are made at a specific point in time, based on relevant market information. These estimates may be subjective in nature and involve uncertainties and matters of significant judgment and therefore cannot be determined with precision. The carrying amount of cash equivalents, accounts receivable, prepaid expenses and other assets, accounts payable and accrued expenses are generally considered to be representative of their respective fair values because of the short-term nature of those instruments. Based on Level 3 inputs and the borrowing rates currently available for loans with similar terms, we believe the fair value of long-term debt approximates its carrying value.

Available-for-sale marketable securities consist of asset-backed securities, corporate debt securities, U.S. Treasury securities and commercial paper, and are measured at fair value using Level 1 and Level 2 inputs. Level 2 financial instruments are valued using market prices on less active markets and proprietary pricing valuation models with observable inputs, including interest rates, yield curves, maturity dates, issue dates, settlement dates, reported trades, broker-dealer quotes, issue spreads, benchmark securities or other market related data. We obtain the fair value of Level 2 investments from our investment manager, who obtains these fair values from a third-party pricing source. We validate the fair values of Level 2 financial instruments provided by our investment manager by comparing these fair values to a third-party pricing source.

Concentrations of Credit Risk, Sources of Supply and Significant Customers

We are subject to credit risk from our portfolio of cash equivalents and marketable securities. These investments were made in accordance with our investment policy which specifies the categories, allocations, and ratings of securities we may consider for investment. The primary objective of our investment activities is to preserve principal while at the same time maximizing the income we receive without significantly increasing risk. We maintain our cash and cash equivalent balances with one major commercial bank and marketable securities with another financial institution. Deposits held with the financial institutions exceed the amount of insurance provided on such deposits. We are exposed to credit risk in the event of a default by the financial institutions holding our cash, cash equivalents and marketable securities to the extent recorded on the consolidated balance sheets.

We are also subject to credit risk from our accounts receivable related to our product sales and revenues under our license and collaborative agreements. We have license and collaborative agreements with pharmaceutical companies under which we receive payments for royalties, license fees, milestone payments for specific achievements designated in the collaborative agreements, reimbursements of research and development services and supply of bulk formulation of rHuPH20. In addition, we sell Hylenex® recombinant in the United States to a limited number of established wholesale distributors in the pharmaceutical industry. Credit is extended based on an evaluation of the customer's financial condition, and collateral is not required. Management monitors our exposure to accounts receivable by periodically evaluating the collectibility of the accounts receivable based on a variety of factors including the length of time the receivables are past due, the financial health of the customer and historical experience. Based upon the review of these factors, we recorded no allowance for doubtful accounts at December 31, 2019 and 2018. Approximately 93% of the accounts receivable balance at December 31, 2019 represents amounts due from Janssen, Roche and Baxalta. Approximately 81% of the accounts receivable balance at December 31, 2018 represents amounts due from Roche and Baxalta.

The following table indicates the percentage of total revenues in excess of 10% with any single customer:

	Year Ended December 31,		
	2019	2018	2017
Roche	40%	72%	38%
argenx	23%	—%	—%
Janssen	18%	2%	6%
BMS	1%	4%	32%
Alexion	1%	3%	13%

We attribute revenues under collaborative agreements, including royalties, to the individual countries where the customer is headquartered. We attribute revenues from product sales to the individual countries to which the product is shipped. Worldwide revenues from external customers are summarized by geographic location in the following table (in thousands):

	Year Ended December 31,		
	2019	2018	2017
United States	$ 116,083	$ 40,475	$ 196,274
Switzerland	78,413	109,890	119,136
All other foreign	1,496	1,497	1,203
Total revenues	$ 195,992	$ 151,862	$ 316,613

We rely on two third-party manufacturers for the supply of bulk rHuPH20 for use in the manufacture of Hylenex recombinant and our other collaboration products and product candidates. Payments due to these suppliers represented 47% and 2% of the accounts payable balance at December 31, 2019 and 2018, respectively. We also rely on a third-party manufacturer for the fill and finish of Hylenex recombinant product under a contract. Payments due to this supplier represented 8% and 0% of the accounts payable balance at December 31, 2019 and 2018, respectively.

Accounts Receivable, Net

Accounts receivable is recorded at the invoiced amount and is non-interest bearing. Accounts receivable is recorded net of allowances for doubtful accounts, cash discounts for prompt payment, distribution fees and chargebacks. We recorded no allowance for doubtful accounts at December 31, 2019 and 2018 as the collectibility of accounts receivable was reasonably assured.

Inventories

Inventories are stated at lower of cost or net realizable value. Cost is determined on a first-in, first-out basis. Net realizable value is the estimated selling price in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. Inventories are reviewed periodically for potential excess, dated or obsolete status. We evaluate the carrying value of inventories on a regular basis, taking into account such factors as historical and anticipated future sales compared to quantities on hand, the price we expect to obtain for products in their respective markets compared with historical cost and the remaining shelf life of goods on hand.

Bulk rHuPH20 formulations manufactured for partner use prior to our partner receiving marketing approval from the U.S. Food and Drug Administration ("FDA") or comparable regulatory agencies in foreign countries and with no alternative future use are recorded as research and development expense. All direct manufacturing costs incurred after the partner receives marketing approval are capitalized as inventory. Bulk rHuPH20 formulations manufactured for general partner and internal use, which can potentially be used by any collaboration partner or by us in Hylenex, and ENHANZE drug product used by our partners in clinical trials, is considered to have alternative future use and all manufacturing costs are capitalized as inventory. Inventories used in our clinical trials are expensed at the time the inventories are packaged for the clinical trials.

As of December 31, 2019 and 2018, inventories consisted of $1.4 million and $2.2 million, respectively, of Hylenex recombinant inventory, net, and $28.0 million and $20.4 million, respectively, of bulk rHuPH20.

Leases

The Company has entered into operating leases primarily for real estate and automobiles. These leases have terms which range from 3 years to 6 years. We determine if an arrangement contains a lease at inception. Right of use ("ROU") assets and liabilities resulting from operating leases are included in property and equipment, accrued expenses and other long-term liabilities on our consolidated balance sheets. Operating lease ROU assets and liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date in determining the discount rate to calculate the present value of future payments. The operating lease ROU asset also includes any lease payments made and

excludes lease incentives and initial direct costs incurred. Our leases often include options to extend or terminate the lease. These options are included in the lease term when it is reasonably certain that we will exercise that option. Short-term leases with an initial term of 12 months or less are not recorded on the balance sheet. Lease expense for minimum lease payments is recognized on a straight-line basis over the lease term.

We have lease agreements with lease and non-lease components, which are generally accounted for separately. For certain equipment leases, such as automobiles, we account for the lease and non-lease components as a single lease component.

Property and Equipment, Net

Property and equipment are recorded at cost, less accumulated depreciation and amortization. Equipment is depreciated using the straight-line method over its estimated useful life ranging from three years to ten years and leasehold improvements are amortized using the straight-line method over the estimated useful life of the asset or the lease term, whichever is shorter.

Impairment of Long-Lived Assets

We account for long-lived assets in accordance with authoritative guidance for impairment or disposal of long-lived assets. Long-lived assets are reviewed for events or changes in circumstances, which indicate that their carrying value may not be recoverable.

Comprehensive Income (Loss)

Comprehensive income (loss) is defined as the change in equity during the period from transactions and other events and circumstances from non-owner sources.

Revenue Recognition

We generate revenues from payments received under collaborative agreements and product sales. As of January 1, 2018, we adopted ASC 606, *Revenue from Contracts with Customers* (ASC 606) which affects how we recognize revenues in these arrangements. We applied the provisions of ASC 606 using the modified retrospective approach, with the cumulative effect of the adoption recognized as of January 1, 2018, to all contracts that had not been completed as of that date. Under ASC 606, we recognize revenue when we transfer promised goods or services to customers in an amount that reflects the consideration to which we expect to be entitled in exchange for those goods or services. To determine revenue recognition for contracts with customers we perform the following five steps: (i) identify the promised goods or services in the contract; (ii) identify the performance obligations in the contract, including whether they are distinct in the context of the contract; (iii) determine the transaction price, including the constraint on variable consideration; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) we satisfy the performance obligations. Amounts reported in prior periods have not been adjusted to reflect the adoption of ASC 606. Accordingly, the reported revenue amounts for the year ended December 31, 2019 and 2018 and the year ended December 31, 2017 are based on different accounting policies.

Prior to the ASC 606 adoption, revenue was recognized when all of the following criteria were met: (1) persuasive evidence of an arrangement exists; (2) delivery has occurred or services have been rendered; (3) the seller's price to the buyer is fixed or determinable; and (4) collectibility is reasonably assured. Differences between the revenue recognition policies applicable prior to the adoption and ASC 606 are described in the following sections and in Note 4.

Revenues under Collaborative Agreements - as reported under ASC 606 beginning January 1, 2018

Under these agreements, we grant the collaboration partner a worldwide license to develop and commercialize products using our ENHANZE technology to combine our patented rHuPH20 enzyme with their proprietary biologics directed at up to a specified number of targets. Targets are usually licensed on an exclusive, global basis. Targets selected subsequent to inception of the arrangement require payment of an additional license fee. The collaboration partner is responsible for all development, manufacturing, clinical, regulatory, sales and marketing costs for any products developed under the agreement. We are responsible for supply of bulk rHuPH20 based on the collaboration partner's purchase orders, and may also be separately engaged to perform research and development services. While these collaboration agreements are similar in that they originate from the same framework, each one is the result of an arms-length negotiation and thus may vary from one to the other.

We collect an upfront license payment from the collaboration partner, and are also entitled to receive event-based payments subject to the collaboration partner's achievement of specified development, regulatory and sales-based milestones. In several agreements, collaboration partners pay us annual fees to maintain their exclusive license rights if they are unable to advance product development to specified stages. We earn separate fees for bulk rHuPH20 supplies and research and development services. In addition, the collaboration partner will pay us royalties at an on average mid-single digit percent rate of their sales if products under the collaboration are commercialized. All amounts owed to us are noncancelable after the underlying triggering event occurs, and nonrefundable once paid. Unless terminated earlier in accordance with its terms, the collaboration generally continues in effect until the later of: (i) expiration of the last to expire of the valid claims of our patents covering rHuPH20 or other specified patents developed under the collaboration which valid claim covers a product developed under the collaboration, and (ii) expiration of the last to expire royalty term for a product developed under the collaboration, which is determined separately for each country. In the event such valid claims expire prior to the last to expire royalty term, the royalty rate is reduced for the remaining royalty term following such expiration. The collaboration partner may terminate the agreement prior to expiration for any reason in its entirety or on a target-by-target basis generally upon 90 days prior written notice to us. Upon any such termination, the license granted to the collaboration partner (in total or with respect to the terminated target, as applicable) will terminate provided, however, that in the event of expiration of the agreement, the on-going licenses granted will become perpetual, non-exclusive and fully paid.

Although these agreements are in form structured as collaborative agreements, we concluded for accounting purposes they represent contracts with customers, and are not subject to accounting literature on collaborative arrangements. This is because we grant to collaboration partners licenses to our intellectual property, and provide supply of bulk rHuPH20 and research and development services which are all outputs of our ongoing activities, in exchange for consideration. We do not develop assets jointly with collaboration partners, and do not share in significant risks of their development or commercialization activities. Accordingly, we concluded our collaborative agreements must be accounted for pursuant to ASC Topic 606, Revenue from Contracts with Customers.

Under all of our collaborative agreements, we have identified licenses to use functional intellectual property as the only performance obligation. The intellectual property underlying the license is our proprietary ENHANZE® technology which represents application of rHuPH20 to facilitate delivery of drugs or fluids. The license grants the collaboration partners right to use our intellectual property as it exists on the effective date of the license, because there is no ongoing development of the ENHANZE technology required. Therefore, we recognize revenue from licenses at the point when the license becomes effective and the collaboration partner has received access to our intellectual property, usually at the inception of the agreement.

When collaboration partners can select additional targets to add to the licenses granted, we consider these rights to be options. We evaluate whether such options contain material rights, i.e. have exercise prices that are discounted compared to what we would charge for a similar license to a new collaboration partner. The exercise price of these options includes a combination of the target selection fees, event-based milestone payments and royalties. When these amounts in aggregate are not offered at a discount that exceeds discounts available to other customers, we conclude the option does not contain a material right, and we consider grants of additional licensing rights upon option exercises to be separate contracts (target selection contracts).

We provide standard indemnification and protection of licensed intellectual property for our customers. These provisions are part of assurance that the licenses meet the agreements' representations and are not obligations to provide goods or services.

We also fulfill purchase orders for supply of bulk rHuPH20 and perform research and development services pursuant to projects authorization forms for our collaboration partners, which represent separate contracts. Additionally, we price our supply of bulk rHuPH20 and research and development services at our regular selling prices, called standalone selling price or SSP. Therefore, our collaboration partners do not have material rights to order these items at prices not reflective of SSP. Refer to the discussion below regarding recognition of revenue for these separate contracts.

Transaction price for a contract represents the amount to which we are entitled in exchange for providing goods and services to the customer. Transaction price does not include amounts subject to uncertainties unless it is probable that there will be no significant reversal of revenue when the uncertainty is resolved. Apart from the upfront license payment (or target selection fees in the target selection contracts), all other fees we may earn under our collaborative agreements are subject to significant uncertainties of product development. Achievement of many of the event-based development and regulatory milestones may not be probable until such milestones are actually achieved. This generally relates to milestones such as obtaining marketing authorization approvals.

With respect to other development milestones, e.g. dosing of a first patient in a clinical trial, achievement could be considered probable prior to its actual occurrence, based on the progress towards commencement of the trial. We do not include any amounts subject to uncertainties into the transaction price until it is probable that the amount will not result in a significant reversal of revenue in the future. At the end of each reporting period, we re-evaluate the probability of achievement of such milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price.

When target exchange rights are held by collaboration partners, and the amounts attributed to these rights are not refundable, they are included in the transaction price. However, they are recorded as deferred revenues because we have a potential performance obligation to provide a new target upon an exchange right being exercised. These amounts are recognized in revenue when the right of exchange expires or is exercised.

Because our agreements have one type of performance obligation (licenses) which are typically all transferred at the same time at agreement inception, allocation of transaction price often is not required. However, allocation is required when licenses for some of the individual targets are subject to rights of exchange, because revenue associated with these targets cannot be recognized. We perform an allocation of the upfront amount based on relative SSP of licenses for individual targets. We determine license SSP using income-based valuation approach utilizing risk-adjusted discounted cash flow projections of the estimated return a licensor would receive. When amounts subject to uncertainties, such as milestones and royalties, are included in the transaction price, we attribute them to the specific individual target licenses which generate such milestone or royalty amounts.

We also estimate SSP of bulk rHuPH20 and research and development services, to determine that our collaboration partners do not have material rights to order them at discounted prices. For supplies of bulk rHuPH20, because we effectively act as a contract manufacturer to our collaboration partners, we estimate and charge SSP based on the typical contract manufacturer margins consistently with all of our collaborative partners. We determine SSP of research and development services based on a fully-burdened labor rate. Our rates are comparable to those we observe in other collaborative agreements. We also have a history of charging similar rates to all of our collaboration partners.

Upfront amounts allocated to licenses to individual targets are recognized as revenue when the license is transferred to the collaboration partner, as discussed above, if the license is not subject to exchange rights, or when the exchange right expires or is exercised. Development milestones and other fees are recognized in revenue when they are included in the transaction price, because by that time we have already transferred the related license to the collaboration partner.

Sales-based milestones and royalties cannot be recognized until the underlying sales occur. We do not receive final royalty reports from our collaboration partners until after we complete our financial statements for a prior quarter. Therefore, we recognize revenue based on estimates of the royalty earned, which are based on preliminary reports provided by our collaboration partners. We will record a true-up in the following quarter if necessary, when final royalty reports are received. To date, we have not recorded any material true-ups.

In contracts to provide research and development services, such services represent the only performance obligation. The fees are charged based on hours worked by our employees and the fixed contractual rate per hour, plus third-party pass-through costs, on a monthly basis. We recognize revenues as the related services are performed based on the amounts billed, as the collaboration partner consumes the benefit of research and development work simultaneously as we perform these services, and the amounts billed reflect the value of these services to the customer.

Refer to Note 4 Revenue, for further discussion on our collaborative arrangements.

Prior to the adoption of ASC 606 on January 1, 2018, we recognized upfront amounts received under two of our collaborative agreements straight-line over the contract term in accordance with the accounting standards that were in effect in 2006-2007, when these collaborative agreements were entered into. In addition, we recognized royalty revenue in the period when we received final royalty reports from the collaboration partners, in the quarter following the quarter in which the corresponding sales occurred. There were no other adoption differences in revenue recognized due to the transition from the previously existing authoritative accounting literature to ASC 606.

Product Sales, Net - as reported under ASC 606 beginning January 1, 2018

***Hylenex* Recombinant**

We sell Hylenex recombinant in the U.S. to wholesale pharmaceutical distributors, who sell the product to hospitals and other end-user customers. Sales to wholesalers are made pursuant to purchase orders subject to the terms of a master agreement, and delivery of individual packages of Hylenex recombinant represent performance obligations under each purchase order. We use a contract manufacturer to produce Hylenex recombinant and a third-party logistics (3PL) vendor to process and fulfill orders. We concluded we are the principal in the sales to wholesalers because we control access to services rendered by both vendors and direct their activities. We have no significant obligations to wholesalers to generate pull-through sales.

Selling prices initially billed to wholesalers are subject to discounts for prompt payment and subsequent chargebacks when wholesalers sell Hylenex recombinant at negotiated discounted prices to members of certain group purchasing organizations ("GPOs") and government programs. We also pay quarterly distribution fees to certain wholesalers for inventory reporting and chargeback processing, and to GPOs as administrative fees for services and for access to GPO members. We concluded the benefits received in exchange for these fees are not distinct from our sales of Hylenex recombinant, and accordingly we apply these amounts to reduce revenues. Wholesalers also have rights to return unsold product nearing or past the expiration date. Because of the shelf life of Hylenex recombinant and our lengthy return period, there may be a significant period of time between when the product is shipped and when we issue credits on returned product.

We estimate the transaction price when we receive each purchase order taking into account the expected reductions of the selling price initially billed to the wholesaler arising from all of the above factors. We have compiled historical experience and data to estimate future returns and chargebacks of Hylenex recombinant and the impact of the other discounts and fees we pay. When estimating these adjustments to the transaction price, we reduce it sufficiently to be able to assert that it is probable that there will be no significant reversal of revenue when the ultimate adjustment amounts are known.

Each purchase order contains only one type of product, and is usually shipped to the wholesaler in a single shipment. Therefore, allocation of the transaction price to individual packages is not required.

We recognize revenue from Hylenex recombinant product sales and related cost of sales upon product delivery to the wholesaler location. At that time, the wholesalers take control of the product as they take title, bear the risk of loss of ownership, and have an enforceable obligation to pay us. They also have the ability to direct sales of product to their customers on terms and at prices they negotiate. Although wholesalers have product return rights, we do not believe they have a significant incentive to return the product to us.

Upon recognition of revenue from product sales of Hylenex recombinant, the estimated amounts of credit for product returns, chargebacks, distribution fees, prompt payment discounts, and GPO fees are included in sales reserves, accrued liabilities and net of accounts receivable. We monitor actual product returns, chargebacks, discounts and fees subsequent to the sale. If these amounts differ from our estimates, we make adjustments to these allowances, which are applied to increase or reduce product sales revenue and earnings in the period of adjustment.

In connection with the orders placed by wholesalers, we incur costs such as commissions to our sales representatives. However, as revenue from product sales is recognized upon delivery to the wholesaler, which occurs shortly after we receive a purchase order, we do not capitalize these commissions and other costs, based on application of the practical expedient allowed within the applicable guidance.

Bulk rHuPH20

We sell bulk rHuPH20 to collaboration partners for use in research and development; subsequent to receiving marketing approval, we sell it for use in collaboration commercial products. Sales are made pursuant to purchase orders subject to the terms of the collaborative agreement, and delivery of units of bulk rHuPH20 represent performance obligations under each purchase order. We provide a standard warranty that the product conforms to specifications. We use contract manufacturers to produce bulk rHuPH20 and have concluded we are the principal in the sales to collaboration partners. The transaction price for each purchase order of bulk rHuPH20 is fixed based on the cost of production plus a contractual markup, and is not subject to adjustments.

Allocation of the transaction price to individual quantities of the product is usually not required because each order contains only one type of product.

We recognize revenue from the sale of bulk rHuPH20 as product sales and related cost of sales upon transfer of title to our partners. At that time, the partners take control of the product, bear the risk of loss of ownership, and have an enforceable obligation to pay us.

ENHANZE Drug Product

We sell ENHANZE drug product to collaboration partners for use in research and development in early phase clinical studies. Sales are made pursuant to purchase orders subject to the terms of the collaborative agreement, and delivery of units of ENHANZE drug product represent performance obligations under each purchase order. We provide a standard warranty that the product conforms to specifications. We use contract manufacturers to produce ENHANZE drug product and we concluded we are the principal in the sales to collaboration partners. The transaction price for each purchase order of ENHANZE drug product is fixed based on the cost of production plus a contractual markup, and is not subject to adjustments. Allocation of the transaction price to individual quantities of the product is usually not required because each order contains only one type of product.

We recognize revenue from the sale of ENHANZE drug product as product sales and related cost of sales upon transfer of title to our partners. At that time, the partners take control of the product, bear the risk of loss of ownership, and have an enforceable obligation to pay us.

Revenue Presentation

In our statements of operations, we report as revenues under collaborative agreements the upfront payments, event-based development and regulatory milestones and sales milestones. We also include in this category revenues from separate research and development contracts pursuant to project authorization forms. We report royalties received from collaboration partners as a separate line in our statements of operations.

Revenues from sales of Hylenex recombinant, bulk rHuPH20 that has alternative future use and ENHANZE drug product are included in product sales, net.

In the footnotes to our financial statements, we provide disaggregated revenue information by type of arrangement (product sales, net, collaborative agreements and research and development services), and additionally, by type of payment stream received under collaborative agreements (upfront license fees, event-based development and regulatory milestones and other fees, sales milestones and royalties).

Cost of Product Sales

Cost of product sales consists primarily of raw materials, third-party manufacturing costs, fill and finish costs, freight costs, internal costs and manufacturing overhead associated with the production of Hylenex recombinant and bulk rHuPH20 and ENHANZE drug product that has alternative future use. Cost of product sales also consists of the write-down of excess, dated and obsolete inventories and the write-off of inventories that do not meet certain product specifications, if any. Prior to bulk rHuPH20 and ENHANZE drug product having alternative future use, all costs related to the manufacturing of those products were charged to research and development expenses in the periods such costs were incurred. During the year ended December 31, 2019, sales of bulk rHuPH20 and ENHANZE drug product included $1.5 million of cost of sales that were previously expensed as research and development. Of the bulk rHuPH20 and ENHANZE drug product that has alternative future use on hand as of December 31, 2019, approximately $0.1 million in manufacturing costs were previously recorded as research and development expenses. We expect to sell this inventory by the end of 2020.

Research and Development Expenses

Research and development expenses include salaries and benefits, facilities and other overhead expenses, external clinical trial expenses, research related manufacturing services, contract services and other outside expenses. Research and development expenses are charged to operating expenses as incurred when these expenditures relate to our research and development efforts and have no alternative future uses. When bulk rHuPH20 is manufactured for use in research and development by us or our partners and the product cannot be redirected for alternative use due to formulation and manufacturing specifications, the manufacturing costs are recorded as research and development expense. Bulk rHuPH20 that is manufactured for partner use prior to our partner receiving marketing approval from the FDA or comparable regulatory agencies in foreign countries and meet these specifications is recorded as research and development expenses. Bulk rHuPH20 formulations manufactured for general partner and internal use, which can potentially be used by any collaboration partner or by us in Hylenex, is considered to have alternative future use and all manufacturing costs are capitalized as inventory. Inventories used in our clinical trials were expensed at the time the inventories were packaged for the clinical trials.

We are obligated to make upfront payments upon execution of certain research and development agreements. Advance payments, including nonrefundable amounts, for goods or services that will be used or rendered for future research and development activities are deferred. Such amounts are recognized as expense as the related goods are delivered or the related services are performed or such time when we do not expect the goods to be delivered or services to be performed.

Milestone payments that we make in connection with in-licensed technology for a particular research and development project that have no alternative future uses (in other research and development projects or otherwise) and therefore no separate economic value are expensed as research and development costs at the time the costs are incurred. We currently have no in-licensed technologies that have alternative future uses in research and development projects or otherwise.

Clinical Trial Expenses

We make payments in connection with our clinical trials under contracts with contract research organizations that support conducting and managing clinical trials. The financial terms of these agreements are subject to negotiation and vary from contract to contract and may result in uneven payment flows. Generally, these agreements set forth the scope of work to be performed at a fixed fee, unit price or on a time and materials basis. A portion of our obligation to make payments under these contracts depends on factors such as the successful enrollment or treatment of patients or the completion of other clinical trial milestones.

Expenses related to clinical trials are accrued based on our estimates and/or representations from service providers regarding work performed, including actual level of patient enrollment, completion of patient studies and progress of the clinical trials. Other incidental costs related to patient enrollment or treatment are accrued when reasonably certain. If the amounts we are obligated to pay under our clinical trial agreements are modified (for instance, as a result of changes in the clinical trial protocol or scope of work to be performed), we adjust our accruals accordingly on a prospective basis. Revisions to our contractual payment obligations are charged to expense in the period in which the facts that give rise to the revision become reasonably certain.

Share-Based Compensation

We record compensation expense associated with stock options, restricted stock awards ("RSAs"), and restricted stock units ("RSUs") in accordance with the authoritative guidance for stock-based compensation. The cost of employee services received in exchange for an award of an equity instrument is measured at the grant date, based on the estimated fair value of the award, and is recognized as expense on a straight-line basis over the requisite service period of the award. Share-based compensation expense for an award with a performance condition is recognized when the achievement of such performance condition is determined to be probable. If the outcome of such performance condition is not determined to be probable or is not met, no compensation expense is recognized and any previously recognized compensation expense is reversed. Forfeitures are recognized as a reduction of share-based compensation expense as they occur.

Income Taxes

We provide for income taxes using the liability method. Under this method, deferred income tax assets and liabilities are determined based on the differences between the financial statement carrying amounts of existing assets and liabilities at each year end and their respective tax bases and are measured using enacted tax rates in effect for the year in which the differences are expected to affect taxable income. Significant judgment is required by management to determine our provision for income taxes, our deferred tax assets and liabilities, and the valuation allowance to record against our net deferred tax assets, which are based on complex and evolving tax regulations throughout the world. Deferred tax assets and other tax benefits are recorded when it is more likely than not that the position will be sustained upon audit. While we have begun to utilize certain of our net operating losses, we have not yet established a track record of profitability. Accordingly, valuation allowances have been recorded to reduce our net deferred tax assets to zero, with the exception of the alternative minimum tax ("AMT") credit carryover of $1.7 million. Under the Tax Cuts and Jobs Act (the "Act") enacted in December 2017, the AMT credit carryover will either be utilized, or if unutilized fully refunded in 2022. For all other deferred tax assets, the valuation allowance will reduce the net value to zero until such time as we can demonstrate an ability to realize them.

The 2015 and 2016 federal returns were selected for audit by the IRS. The audit was completed in September 2019 with no material adjustments.

Net (Loss) Income Per Share

Basic net (loss) income per common share is computed by dividing net (loss) income for the period by the weighted average number of common shares outstanding during the period, without consideration for common stock equivalents. Outstanding stock options, unvested RSAs, unvested RSUs and the Convertible Notes are considered common stock equivalents and are only included in the calculation of diluted earnings per common share when net income is reported and their effect is dilutive. For the years ended December 31, 2019, 2018 and 2017, approximately 33.1 million, 13.8 million, and 7.1 million shares, respectively, of outstanding stock options, unvested RSAs, unvested RSUs and Convertible Notes were excluded from the calculation of diluted net (loss) income per common share because their effect was anti-dilutive.

The 19.3 million shares underlying the conversion option of the Convertible Notes will not have an impact on our diluted earnings per share when net income is reported until the average market price of our common stock exceeds the conversion price of $23.85 per share, as we intend and have the ability to settle the principal amount of the Convertible Notes in cash upon conversion. We compute the potentially dilutive impact of the shares of common stock related to the Convertible Notes using the treasury stock method.

A reconciliation of the numerators and the denominators of the basic and diluted net (loss) income per common share computations is as follows (in thousands, except per share amounts):

	Year Ended December 31,		
	2019	2018	2017
Numerator:			
Net (loss) income	$ (72,240)	$ (80,330)	$ 62,971
Denominator:			
Weighted average common shares outstanding for basic net (loss) income per share	144,329	143,599	136,419
Net effect of dilutive common stock equivalents	—	—	2,649
Weighted average common shares outstanding for diluted net (loss) income per share	144,329	143,599	139,068
Net (loss) income per share:			
Basic	$ (0.50)	$ (0.56)	$ 0.46
Diluted	$ (0.50)	$ (0.56)	$ 0.45

Segment Information

We operate our business in one segment, which includes all activities related to the research, development and commercialization of our proprietary enzymes. This segment also includes revenues and expenses related to (i) research and development and bulk rHuPH20 manufacturing activities conducted under our collaborative agreements with third parties and (ii) product sales of Hylenex recombinant. The chief operating decision-maker reviews the operating results on an aggregate basis and manages the operations as a single operating segment. Our long-lived assets located in foreign countries had no book value as of December 31, 2019, 2018 and 2017.

Adoption and Pending Adoption of Recent Accounting Pronouncements

The following table provides a brief description of recently issued accounting standards, those adopted in the current period and those not yet adopted:

Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). In July 2018, the FASB issued additional guidance related to Topic 842.	The new guidance requires lessees to recognize assets and liabilities for most leases and provides enhanced disclosures.	January 1, 2019	We implemented the guidance on January 1, 2019 using a modified retrospective transition basis for leases existing as of the period of adoption. In order to adopt the new standard, we used the available practical expedients and newly implemented processes and internal controls for lease accounting. The practical expedients allowed us to carry forward our historical assessment of whether existing agreements are or contain a lease and the classification of our existing lease arrangements. All of our real-estate and automobile operating lease commitments are recognized as lease liabilities with corresponding right-of-use assets, which resulted in an increase in the assets and liabilities of the consolidated balance sheet of $7.2 million, using an assumed weighted average discount rate of 10.0%. The adoption did not have an impact on our consolidated statements of operations and did not require recognition of a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. We elected to continue applying the guidance under ASC 840 for comparative periods, as allowed through ASC 2018-11.

Standard	Description	Effective Date	Effect on the Financial Statements or Other Significant Matters
In December 2019, the FASB issued ASU 2019-12, Simplifying the Accounting for Income Taxes	The new guidance removes certain exceptions to the general principles of ASC 740 in order to simplify the complexities of its application. These changes include eliminations to the exceptions for intraperiod tax allocation, recognizing deferred tax liabilities related to outside basis differences, and year-to-date losses in interim periods among others.	January 1, 2019	We early adopted the new guidance on January 1, 2019. With the adoption we no longer apply the exception to the general rule for intraperiod tax allocations under the incremental method. During the period, we would have recorded a $14.7 million tax expense to APIC fully offset by a $14.7 million tax benefit in continuing operations.
In August 2018, the FASB issued ASU 2018-15, Intangibles-Goodwill and other Internal-Use Software (Subtopic 350-40)	The new guidance aligns the requirement for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirement for capitalizing implementation costs incurred to develop or obtain internal-use software (and hosting arrangements that include an internal-use software license).	January 1, 2020	We plan to adopt the new guidance on January 1, 2020. We do not anticipate the adoption will have a material impact on our condensed consolidated financial position or results of operations.
In August 2018, the FASB issued ASU 2018-13, Fair Value Measurement (Topic 820).	The new guidance removes, modifies and adds to certain disclosure requirements on fair value measurements in Topic 820, Fair Value Measurement.	January 1, 2020	We plan to adopt the new guidance on January 1, 2020. We do not anticipate the adoption will have a material impact on our consolidated financial position or results of operations.
In June 2016, the FASB issued ASU 2016-13, Financial Instruments - Credit Losses (Topic 326), Measurement of Credit Losses on Financial Instruments	The standard amends the impairment model by requiring entities to use a forward-looking approach based on expected losses to estimate credit losses for most financial assets and certain other instruments that aren't measured at fair value through net income. For available-for-sale debt securities, entities will be required to recognize an allowance for credit losses rather than a reduction in carrying value of the asset. Entities will no longer be permitted to consider the length of time that fair value has been less than amortized cost when evaluating when credit losses should be recognized.	January 1, 2020	We plan to adopt the new guidance on January 1, 2020. We do not anticipate the adoption will have a material impact on our consolidated financial position or results of operations.

3. Fair Value Measurement

Available-for-sale marketable securities consisted of the following (in thousands):

	December 31, 2019			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Asset-backed securities	$ 30,484	$ 55	$ —	$ 30,539
Corporate debt securities	161,308	178	(14)	161,472
U.S. Treasury securities	75,192	40	(5)	75,227
Commercial paper	33,845	—	—	33,845
	$ 300,829	$ 273	$ (19)	$ 301,083

	December 31, 2018			
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Asset-backed securities	$ 39,787	$ —	$ (40)	$ 39,747
Corporate debt securities	57,860	—	(127)	57,733
U.S. Treasury securities	84,924	—	(87)	84,837
Commercial paper	114,273	—	—	114,273
	$ 296,844	$ —	$ (254)	$ 296,590

As of December 31, 2019, 11 available-for-sale marketable securities with a fair market value of $82.9 million were in a gross unrealized loss position of $19 thousand, all of which had been in such position for less than 12 months. Based on our review of these marketable securities, we believe we had no other-than-temporary impairments on these securities as of December 31, 2019, because we do not intend to sell these securities and it is not more-likely-than-not that we will be required to sell these securities before the recovery of their amortized cost basis.

Contractual maturities of available-for-sale debt securities are as follows (in thousands):

	December 31, 2019	December 31, 2018
	Estimated Fair Value	
Due within one year	$ 274,805	$ 296,590
After one but within five years	26,278	—
	$ 301,083	$ 296,590

The following table summarizes, by major security type, our cash equivalents and available-for-sale marketable securities that are measured at fair value on a recurring basis and are categorized using the fair value hierarchy (in thousands):

	December 31, 2019			December 31, 2018		
	Level 1	Level 2	Total estimated fair value	Level 1	Level 2	Total estimated fair value
Cash equivalents:						
Money market funds	$ 119,949	$ —	$ 119,949	$ 57,987	$ —	$ 57,987
Available-for-sale marketable securities:						
Asset-backed securities	—	30,539	30,539	—	39,747	39,747
Corporate debt securities	—	161,472	161,472	—	57,733	57,733
U.S. Treasury securities	75,228	—	75,228	84,837	—	84,837
Commercial paper	—	33,845	33,845	—	114,273	114,273
	$ 195,177	$ 225,856	$ 421,033	$ 142,824	$ 211,753	$ 354,577

There were no transfers between Level 1 and Level 2 of the fair value hierarchy during the year ended December 31, 2019. We had no instruments that were classified within Level 3 as of December 31, 2019 and 2018.

4. Revenue

Our disaggregated revenues were as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Royalties	$ 69,899	$ 78,981	$ 63,507
Product sales, net			
Sales of bulk rHuPH20	$ 48,285	$ 12,729	$ 35,246
Sales of ENHANZE drug product	768	460	—
Sales of Hylenex	16,995	15,045	15,150
Total product sales, net	66,048	28,234	50,396
Revenues under collaborative agreements:			
Upfront license and target nomination fees	53,000	26,336	172,806
Event-based development milestones and regulatory milestone and other fees	5,500	16,000	16,317
Sales-based milestones	—	—	1,417
Research and development services	1,545	2,311	12,170
Total revenues under collaborative agreements	60,045	44,647	202,710
Total revenue	$195,992	$151,862	$316,613

During the year ended December 31, 2019 we recognized revenue related to licenses granted to collaboration partners in prior periods in the amount of $74.9 million. This amount represents royalties earned in the current period, in addition to $5.0 million of variable consideration in the contracts where uncertainties have been resolved and the development milestones were expected to be achieved or were achieved. We also recognized revenue of $4.0 million during the year ended December 31, 2019

that had been included in deferred revenues at December 31, 2018. We did not recognize any adjustments to reduce sales reserves and allowances liability related to Hylenex recombinant sales in prior periods.

Revenue recognized during the year ended December 31, 2017 was determined in accordance with the accounting rules applicable prior to the adoption of ASC 606 on January 1, 2018.

Upon the adoption of ASC 606, we recognized an adjustment to increase our accounts receivable by $19.4 million, decrease deferred revenues by $51.8 million, and decrease accumulated deficit by $71.2 million. The impact of applying the provisions of ASC 606 in the year ended December 31, 2018 was to decrease revenues by $4.7 million. Under the previously existing authoritative accounting literature, at December 31, 2018 our accounts receivable, net would have been $19.3 million lower, and our deferred revenue $47.4 million higher, than the amounts reported in our consolidated balance sheet. ASC 606 did not have an aggregate impact on our net cash used in operating activities, but resulted in offsetting changes in net loss and certain assets and liabilities within net cash used in operating activities in the consolidated statement of cash flows.

Accounts receivable, net and deferred revenues (contract liabilities) from contracts with customers, including collaboration partners, consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Accounts receivable, net	$ 59,442	$ 30,005
Deferred revenues	5,259	9,255

As of December 31, 2019, the amounts included in the transaction price of our contracts with customers, including collaboration partners, and allocated to goods and services not yet provided were $12.3 million of which $7.0 million relates to unfulfilled product purchase orders and $5.3 million has been collected and reported as deferred revenues. The unfulfilled product purchase orders are estimated to be delivered in 2020. Of the total deferred revenues of $5.3 million, $4.0 million is expected to be used by our customers within the next 12 months.

There were no contract assets related to collaborative agreements at December 31, 2019. While we may become entitled to receive additional event-based development and regulatory milestones and other fees under our collaborative agreements, which relate to intellectual property licenses granted to collaboration partners in prior periods, no amounts were probable. The following table presents amounts under our collaborative agreements included in the transaction price (i.e. cumulative amounts triggered or probable) as of December 31, 2019 (in thousands):

	Upfront (1)	Development (2)	Sales (3)	Total
Collaboration partner and agreement date:				
Roche (December 2006, September 2017 and October 2018)	$ 105,000	$ 30,000	$ 22,000	$ 157,000
Baxalta (September 2007)	10,000	3,000	9,000	22,000
Pfizer (December 2012)	14,500	2,000	—	16,500
Janssen (December 2014)	18,250	15,000	—	33,250
AbbVie (June 2015)	23,000	6,000	—	29,000
Lilly (December 2015)	33,000	—	—	33,000
BMS (September 2017)	105,000	5,000	—	110,000
Alexion (December 2017)	40,000	6,000	—	46,000
argenx (February 2019)	40,000	5,000		45,000
Royalties				323,285
Total amounts under our collaborative agreements included in the transaction price				815,035

(1) Upfront and additional target selection fees

(2) Event-based development and regulatory milestone amounts and other fees

(3) Sales-based milestone amounts

Through December 31, 2019, our collaboration partners have completed development, obtained marketing authorization approvals for certain indications and commenced commercialization of the following products:

- Roche, for Herceptin SC in the European Union ("EU") in August 2013; and MabThera SC in the EU in March 2014 and its equivalent RITUXAN HYCELA™ in the US in June 2017; Herceptin SC in Canada in September 2018; and Herceptin Hylecta in the US in February 2019.
- Baxalta, for HYQVIA in the EU and in the US in May 2013.

The remaining targets and products are currently in the process of development by the collaboration partners.

5. Certain Balance Sheet Items

Accounts receivable, net consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Accounts receivable from product sales to collaborators	$ 35,649	$ 3,717
Accounts receivable from revenues under collaborative agreements	3,850	5,499
Accounts receivable from royalty payments	17,149	19,199
Accounts receivable from other product sales	3,591	2,182
Subtotal	60,239	30,597
Allowance for distribution fees and discounts	(797)	(592)
Total accounts receivable, net	$ 59,442	$ 30,005

Inventories consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Raw materials	$ 2,769	$ 735
Work-in-process	15,710	11,430
Finished goods	10,880	10,460
Total inventories	$ 29,359	$ 22,625

Prepaid expenses and other assets consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Prepaid manufacturing expenses	$ 30,156	$ 8,230
Prepaid research and development expenses	4,964	7,922
Other prepaid expenses	3,655	2,513
Other assets	5,681	6,462
Total prepaid expenses and other assets	44,456	25,127
Less long-term portion	11,083	4,434
Total prepaid expenses and other assets, current	$ 33,373	$ 20,693

Prepaid manufacturing expenses include raw materials, slot reservation fees and other amounts paid to contract manufacturing organizations. Such amounts are reclassified to work-in-process inventory as materials are used or the CMO services are complete.

Property and equipment, net consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Research equipment	$ 7,403	$ 9,945
Manufacturing equipment	3,858	3,979
Computer and office equipment	4,859	5,211
Leasehold improvements	1,628	4,569
Subtotal	17,748	23,704
Accumulated depreciation and amortization	(10,742)	(16,239)
Subtotal	$ 7,006	$ 7,465
Right of use of assets	$ 3,849	$ —
Property and equipment, net	$ 10,855	$ 7,465

Depreciation and amortization expense was approximately $4.1 million , $2.4 million, and $2.2 million for the years ended December 31, 2019, 2018 and 2017, respectively. The depreciation and amortization expense for the year ended December 31, 2019 is inclusive of $1.8 million ROU asset amortization. As discussed in Note 9, we have recorded a ROU impairment charge of $1.1 million as a result of the organizational restructuring. We also recorded an impairment charge of $1.4 million related to property and equipment as a result of the organizational restructuring (Refer to Note 13 for further details on the organizational restructuring).

Accrued expenses consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Accrued outsourced research and development expenses	$ 8,423	$ 21,921
Accrued compensation and payroll taxes	27,888	16,604
Accrued outsourced manufacturing expenses	9,173	3,975
Other accrued expenses	7,876	7,623
Lease liability	6,469	—
Total accrued expenses	59,829	50,123
Less long-term portion	4,180	594
Total accrued expenses, current	$ 55,649	$ 49,529

Expense associated with the accretion of the lease liabilities was approximately $0.8 million and zero for the twelve months ended December 31, 2019 and 2018, respectively. Total lease expense for the twelve months ended December 31, 2019 and 2018 $2.6 million and $2.4 million respectively.

Cash paid for amounts related to leases for the twelve months ended December 31, 2019 and 2018 was $3.1 million and $2.4 million respectively.

Deferred revenue consisted of the following (in thousands):

	December 31, 2019	December 31, 2018
Collaborative agreements		
License fees and event-based payments:	2,764	2,264
Product sales	2,495	6,991
Total deferred revenue	5,259	9,255
Less current portion	4,012	4,247
Deferred revenue, net of current portion	$ 1,247	$ 5,008

6. Long-Term Debt, Net

Convertible Notes

In November 2019, we completed the sale of $460.0 million in aggregate principal amount of 1.25% Convertible Senior Notes due 2024 ("Convertible Notes") in a private placement to qualified institutional buyers pursuant to Rule 144A under the Securities Act of 1933, as amended ("Securities Act"). The Convertible Notes were issued under an indenture, dated as of November 18, 2019, ("Indenture") with The Bank of New York Mellon Trust Company, N.A., as trustee. The offer and sale of the Convertible Notes and the shares of common stock issuable upon conversion of the Convertible Notes have not been registered under the Securities Act, or the securities laws of any other jurisdiction, and the Convertible Notes and such shares may not be offered or sold absent registration or an applicable exemption from registration requirements, or in a transaction not subject to, such registration requirements.

We received net proceeds from the offering of approximately $447.4 million. We used $200.0 million of the net proceeds from the offering to repurchase shares of common stock, including approximately $143.1 million to repurchase approximately 8.1 million shares of common stock concurrently with the offering in privately negotiated transactions, $6.9 million in open market purchases and $50.0 million to repurchase a total of approximately 2.6 million shares of common stock through an accelerated share repurchase agreement.

We used approximately $26.1 million of the net proceeds from the offering to repay all outstanding amounts under its loan agreement with Oxford Finance and Silicon Valley Bank and intend to use the remainder of the net proceeds for general corporate purposes, including additional share repurchases subsequent to the offering and working capital.

The Convertible Notes will pay interest semi-annually in arrears on June 1st and December 1st of each year, beginning on June 1, 2020, at an annual rate of 1.25% and will be convertible into cash, shares of common stock or a combination of cash and shares of common stock, at our election, based on the applicable conversion rate at such time. The Convertible Notes are general unsecured obligations and will rank senior in right of payment to all indebtedness that is expressly subordinated in right of payment to the Convertible Notes, will rank equally in right of payment with all existing and future liabilities that are not so subordinated, will be effectively junior to any secured indebtedness to the extent of the value of the assets securing such indebtedness and will be structurally subordinated to all indebtedness and other liabilities (including trade payables) of the our current or future subsidiaries. The Convertible Notes have a maturity date of December 1, 2024.

Holders may convert their Convertible Notes at their option only in the following circumstances: (1) during any calendar quarter commencing after the calendar quarter ending on March 31, 2020, if the last reported sale price per share of common stock exceeds 130% of the conversion price for each of at least 20 trading days during the 30 consecutive trading days ending on, and including, the last trading day of the immediately preceding calendar quarter; (2) during the five consecutive business days immediately after any five consecutive trading day period (such five consecutive trading day period, the "measurement period") in which the trading price per $1,000 principal amount of notes for each trading day of the measurement period was less than 98% of the product of the last reported sale price per share of Company's common stock on such trading day and the conversion rate on such trading day; (3) upon the occurrence of certain corporate events or distributions on Company's common stock, as described in the offering memorandum; (4) if we call such notes for redemption;

and (5) at any time from, and including, June 1, 2024 until the close of business on the scheduled trading day immediately before the maturity date.

Upon conversion, we will pay or deliver, as applicable, cash, shares of common stock or a combination of cash and shares of common stock, at our election. The initial conversion rate for the Convertible Notes will be 41.9208 shares of common stock per $1,000 in principal amount of Convertible Notes, equivalent to a conversion price of approximately $23.85 per share of our common stock. The conversion rate is subject to adjustment as described in the Indenture.

In accordance with accounting guidance for debt with conversion and other options, we accounted for the debt and equity components of the Convertible Notes separately. The estimated fair value of the debt component at the date of issuance was $381.8 million, which was computed based on our non-convertible borrowing rate for similar debt of 5.19%, derived from independent valuation analysis. The equity component was allocated a value of $65.6 million and represents the difference between the $447.4 million of net proceeds from the issuance of the Convertible Notes and the $381.8 million estimated fair value of the debt component at the date of issuance.

In connection with the Convertible Notes, we paid the initial purchasers of the Convertible Notes a fee of $12.7 million and incurred additional debt issuance costs totaling $0.3 million, which includes expenses that we paid on behalf of the initial purchasers and expenses incurred directly by us. Debt issuance costs, the initial purchasers' fee and the equity component is presented as a debt discount as of December 31, 2019 in the amount of $76.9 million, and will be amortized over the remaining estimated term of 5 years using the effective interest method, utilizing an effective interest rate of 5.10%. The net carrying amount of the debt as of December 31, 2019 is $383.1 million. For the year ended December 31, 2019, we recognized interest expense of $2.3 million, including contractual coupon interest of $0.7 million and amortization of the debt discount of $1.6 million.

As of December 31, 2019, we were in compliance with all covenants under the Indenture and there was no material adverse change in our business, operations or financial condition.

Royalty-backed Loan

In January 2016, through our wholly-owned subsidiary Halozyme Royalty LLC ("Halozyme Royalty"), we received a $150 million loan (the "Royalty-backed Loan") pursuant to a credit agreement (the "Credit Agreement") with BioPharma Credit Investments IV Sub, LP and Athyrium Opportunities II Acquisition LP (the "Royalty-backed Lenders"). Under the terms of the Credit Agreement, Halozyme Therapeutics, Inc. transferred to Halozyme Royalty the right to receive royalty payments from the commercial sales of ENHANZE products owed under the Roche Collaboration and Baxalta Collaboration ("Collaboration Agreements"). The royalty payments from the Collaboration Agreements will be used to repay the principal and interest on the loan (the "Royalty Payments"). The Royalty-backed Loan bears interest at a per annum rate of 8.75% plus the three-month LIBOR rate. The three-month LIBOR rate is subject to a floor of 0.7% and a cap of 1.5%. The interest rate as of December 31, 2019 and 2018 was 10.25%.

The Credit Agreement provides that none of the Royalty Payments were required to be applied to the Royalty-backed Loan prior to January 1, 2017, 50% of the Royalty Payments are required to be applied to the Royalty-backed Loan between January 1, 2017 and January 1, 2018 and thereafter all Royalty Payments must be applied to the Royalty-backed Loan. However, the amounts available to repay the Royalty-backed Loan are subject to caps of $13.75 million per quarter in 2017, $18.75 million per quarter in 2018, $21.25 million per quarter in 2019 and $22.5 million per quarter in 2020 and thereafter. Amounts available to repay the Royalty-backed Loan will be applied first to pay interest and second to repay principal on the Royalty-backed Loan. Any accrued interest that is not paid on any applicable quarterly payment date, as defined, will be capitalized and added to the principal balance of the Royalty-backed Loan on such date. Halozyme Royalty will be entitled to receive and distribute to Halozyme any Royalty Payments that are not required to be applied to the Royalty-backed Loan or which are in excess of the foregoing caps.

Because the repayment of the term loan is contingent upon the level of Royalty Payments received, the repayment term may be shortened or extended depending on the actual level of Royalty Payments. The final maturity date of the Royalty-backed Loan will be the earlier of (i) the date when principal and interest is paid in full, (ii) the termination of Halozyme Royalty's right to receive royalties under the Collaboration Agreements, and (iii) December 31, 2050. Currently, we estimate that the loan will be repaid in the second quarter of 2020. This estimate could be adversely affected and the repayment period could be extended if future royalty amounts are less than currently expected. Under the terms of the Credit Agreement, at any time after January 1,

2019, Halozyme Royalty may, subject to certain limitations, prepay the outstanding principal of the Royalty-backed Loan in whole or in part, at a price equal to 105% of the outstanding principal on the Royalty-backed Loan, plus accrued but unpaid interest. The Royalty-backed Loan constitutes an obligation of Halozyme Royalty, and is non-recourse to Halozyme. Halozyme Royalty retains its right to the Royalty Payments following repayment of the loan.

As of December 31, 2019, we were in compliance with all covenants under the Royalty-backed Loan and there was no material adverse change in our business, operations or financial condition.

We began making principal and interest payments against the Royalty-backed Loan in the first quarter of 2017 and therefore had zero capitalized interest for the twelve months ended December 31, 2019. In addition, we recorded accrued interest, which is included in accrued expenses, of $0.1 million and $0.4 million as of December 31, 2019 and 2018, respectively.

In connection with the Royalty-backed Loan, we paid the Royalty-backed Lenders a fee of $1.5 million and incurred additional debt issuance costs totaling $0.4 million, which includes expenses that we paid on behalf of the Royalty-backed Lenders and expenses incurred directly by us. Debt issuance costs and the lender fee have been netted against the debt as of December 31, 2019, and are being amortized over the estimated term of the debt using the effective interest method. For the years ended December 31, 2019, 2018 and 2017, we recognized interest expense, including amortization of the debt discount, related to the Royalty-backed Loan of $6.2 million, $13.1 million and $16.4 million, respectively. The assumptions used in determining the expected repayment term of the debt and amortization period of the issuance costs requires that we make estimates that could impact the short- and long-term classification of these costs, as well as the period over which these costs will be amortized. The outstanding balance of the Royalty-backed Loan as of December 31, 2019 was $19.5 million.

Oxford and SVB Loan and Security Agreement

In June 2016, we entered into a Loan and Security Agreement (the "Loan Agreement") with Oxford Finance LLC ("Oxford") and Silicon Valley Bank ("SVB") (collectively, the "Lenders"), providing a senior secured loan facility of up to an aggregate principal amount of $70.0 million, comprising a $55.0 million draw in June 2016 and an additional $15.0 million tranche, which we had the option to draw during the second quarter of 2017 and did not exercise. The initial proceeds were partially used to pay the outstanding principal and final payment of $4.25 million owed on a previous loan agreement with the Lenders. The remaining proceeds were used for working capital and general business requirements. The senior secured loan facility carried a fixed interest rate of 8.25%. The repayment schedule provided for interest only payments for the first 18 months, followed by consecutive equal monthly payments of principal and interest in arrears through the maturity date of January 1, 2021. The Loan Agreement provided for a final payment equal to 5.50% of the initial $55.0 million principal amount, which was due when the Loan Agreement becomes due or upon the prepayment of the facility. We had the option to prepay the outstanding balance of the Loan Agreement in full and exercised this option in November 2019, at which point we paid the full remaining balance and final payment of $26.1 million.

Interest expense, including amortization of the debt discount, related to the Loan Agreement totaled $3.0 million, $4.9 million and $5.5 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Future maturities and interest payments of long-term debt as of December 31, 2019, are as follows (in thousands):

2020	$ 26,100
2021	5,750
2022	5,750
2023	5,750
2024	465,750
Total minimum payments	509,100
Less amount representing interest	(29,540)
Gross balance of long-term debt	479,560
Less unamortized debt discount	(76,973)
Present value of long-term debt	402,587
Less current portion of long-term debt	(19,542)
Long-term debt, less current portion and unamortized debt discount	$ 383,045

7. Share-based Compensation

We currently grant stock options, restricted stock awards and restricted stock units under the Amended and Restated 2011 Stock Plan ("2011 Stock Plan"), which was approved by the stockholders on May 6, 2016 and provides for the grant of up to 44.2 million shares of common stock to selected employees, consultants and non-employee members of our Board of Directors as stock options, stock appreciation rights, restricted stock awards, restricted stock unit awards and performance awards. Awards are subject to terms and conditions established by the Compensation Committee of our Board of Directors. During the year ended December 31, 2019, we granted share-based awards under the 2011 Stock Plan. At December 31, 2019, 13,640,668 shares were subject to outstanding awards and 9,352,360 shares were available for future grants of share-based awards.

Total share-based compensation expense related to share-based awards was comprised of the following (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Research and development	$ 15,107	$ 17,220	$ 13,080
Selling, general and administrative	19,669	18,476	17,590
Share-based compensation expense	$ 34,776	$ 35,696	$ 30,670

Share-based compensation expense by type of share-based award (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Stock options	$ 17,624	$ 18,742	$ 19,583
RSAs and RSUs	17,152	16,954	11,087
	$ 34,776	$ 35,696	$ 30,670

Total unrecognized estimated compensation cost by type of award and the weighted-average remaining requisite service period over which such expense is expected to be recognized (in thousands, unless otherwise noted):

	December 31, 2019	
	Unrecognized Expense	Remaining Weighted-Average Recognition Period (years)
Stock options	$ 16,524	2.59
RSAs	$ 570	0.16
RSUs	$ 11,600	2.32

Stock Options. Options granted under the Plans must have an exercise price equal to at least 100% of the fair market value of our common stock on the date of grant. The options generally have a maximum contractual term of ten years and vest at the rate of one-fourth of the shares on the first anniversary of the date of grant and 1/48 of the shares monthly thereafter. Certain option awards provide for accelerated vesting if there is a change in control (as defined in the Plans).

A summary of our stock option award activity as of and for the year ended December 31, 2019 is as follows:

	Shares Underlying Stock Options	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
Outstanding at December 31, 2018	11,012,381	$13.81		
Granted	3,056,191	$16.46		
Exercised	(1,540,690)	$10.73		
Canceled/forfeited	(979,653)	$16.19		
Outstanding at December 31, 2019	11,548,229	$14.72	3.98	$39.8 million
Vested and expected to vest at December 31, 2019	11,548,229	$14.72	3.98	$39.8 million
Exercisable at December 31, 2019	6,962,972	$13.64	3.59	$32.7 million

The weighted average grant date fair values of options granted during the years ended December 31, 2019, 2018 and 2017 were $16.46 per share, $10.33 per share and $7.86 per share, respectively. The total intrinsic value of options exercised during the years ended December 31, 2019, 2018 and 2017 was approximately $10.6 million, $11.5 million and $10.0 million, respectively. Cash received from stock option exercises for the years ended December 31, 2019, 2018 and 2017 was approximately $16.5 million, $16.3 million and $14.0 million, respectively.

The exercise price of stock options granted is equal to the closing price of the common stock on the date of grant. The fair value of each option award is estimated on the date of grant using the Black-Scholes-Merton option pricing model ("Black-Scholes model"). Expected volatility is based on historical volatility of our common stock. The expected term of options granted is based on analyses of historical employee termination rates and option exercises. The risk-free interest rate is based on the U.S. Treasury yield for a period consistent with the expected term of the option in effect at the time of the grant. The dividend yield assumption is based on the expectation of no future dividend payments. The assumptions used in the Black-Scholes model were as follows:

	Year Ended December 31,		
	2019	2018	2017
Expected volatility	51.56-56.94%	57.18-70.06%	69.81-71.73%
Average expected term (in years)	5.5	5.5	5.6
Risk-free interest rate	1.35-2.56%	2.25-2.96%	1.73-2.13%
Expected dividend yield	—	—	—

*Restricted Stock Awards***.** RSAs are grants that entitle the holder to acquire shares of our common stock at zero cost. The shares covered by a RSA cannot be sold, pledged, or otherwise disposed of until the award vests and any unvested shares may be reacquired by us for the original purchase price following the awardee's termination of service. The RSAs will generally vest at the rate of one-fourth of the shares on each anniversary of the date of grant. Annual grants of RSAs to the Board of Directors typically vest in approximately one year.

The following table summarizes our RSA activity during the year ended December 31, 2019:

	Number of Shares	Weighted Average Grant Date Fair Value
Unvested at December 31, 2018	397,389	$11.03
Granted	85,211	$16.43
Vested	(260,086)	$12.57
Forfeited	(11,391)	$8.11
Unvested at December 31, 2019	211,123	$11.47

The estimated fair value of the RSAs was based on the closing market value of our common stock on the date of grant. The total grant date fair value of RSAs vested during the years ended December 31, 2019, 2018 and 2017 was approximately $3.3 million, $4.5 million and $5.3 million, respectively. The fair value of RSAs vested during the years ended December 31, 2019, 2018 and 2017, was approximately $4.2 million, $7.2 million and $6.6 million, respectively.

*Restricted Stock Units***.** A RSU is a promise by us to issue a share of our common stock upon vesting of the unit. The RSUs will generally vest at the rate of one-fourth of the shares on each anniversary of the date of grant.

The following table summarizes our RSU activity during the year ended December 31, 2019:

	Number of Shares	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Term (yrs)	Aggregate Intrinsic Value
Outstanding at December 31, 2018	2,388,342	$15.12		
Granted	1,151,464	$16.55		
Vested	(1,092,648)	$15.35		
Forfeited	(354,719)	$16.22		
Outstanding at December 31, 2019	2,092,439	$15.60	1.23	$37.1 million

The estimated fair value of the RSUs was based on the closing market value of our common stock on the date of grant. The total grant date fair value of RSUs vested during the years ended December 31, 2019, 2018 and 2017 was approximately $19.1 million, $6.7 million and $4.0 million, respectively. The fair value of RSUs vested during the years ended December 31, 2019, 2018 and 2017 was approximately $18.5 million, $11.0 million and $4.7 million, respectively.

8. Stockholders' Equity (Deficit)

In May 2017, we completed an underwritten public offering pursuant to which we sold 11.5 million shares of common stock, including 1.5 million shares sold pursuant to the full exercise of an option to purchase additional shares granted to the underwriters. All of the shares were offered at a public offering price of $12.50 per share, generating $134.9 million in net proceeds, after deducting underwriting discounts and commissions and other offering expenses.

During the years ended December 31, 2019, 2018 and 2017, we issued an aggregate of 1,540,690, 1,489,138 and 1,514,826 shares of common stock, respectively, in connection with the exercises of stock options, for net proceeds of approximately $16.5 million, $16.3 million and $14.0 million, respectively. For the years ended December 31, 2019, 2018 and 2017, we issued 952,182, 442,599 and 281,398 shares of common stock, respectively, upon vesting of certain RSUs for which the RSU holders surrendered 140,466, 139,850 and 97,008 RSUs, respectively, to pay for minimum withholding taxes totaling approximately $7.0 million, $4.2 million and $1.9 million, respectively. Stock options and unvested restricted units totaling approximately 13.6 million, 13.4 million and 13.0 million shares of our common stock were outstanding as of December 31, 2019, 2018 and 2017, respectively.

Share Repurchases

The Board of Directors approved a share repurchase program, pursuant to which we may repurchase issued and outstanding shares of common stock from time to time. We may utilize a variety of methods including open market purchases, privately negotiated transactions, accelerated share repurchase programs or any combination of such methods.

In November 2019, we announced that the Board of Directors has authorized the initiation of a capital return program to repurchase up to $550.0 million of outstanding common stock over a three-year period. The Board will regularly review this capital return program in connection with a balanced capital allocation strategy. In November 2019, we repurchased approximately 8.1 million shares of common stock concurrently with the Convertible Notes issuance in privately negotiated transactions for $143.1 million and 0.4 million shares of common stock in open market purchases for $6.9 million. Also in November 2019, we entered into an Accelerated Share Repurchase (ASR) agreement with Bank of America to repurchase $50.0 million of common stock. At inception, pursuant to the agreement, we paid $50.0 million to Bank of America and took an initial delivery of 2.1 million shares. In February 2020 we finalized the transaction and received an additional 0.5 million shares. We retired the repurchased shares and they resumed the status of authorized and unissued shares.

9. Commitments and Contingencies

Operating Leases

Our administrative offices and research facilities are located in San Diego, California. We lease an aggregate of approximately 80,000 square feet of office and research space in five buildings. The leases commenced in June 2011, November 2013 and June 2018 and continue through January 2023. The leases are subject to approximately 3.0% annual increases throughout the terms of the leases. We also pay a pro rata share of operating costs, insurance costs, utilities and real property taxes.

We lease approximately 10,000 square feet of office space for a satellite office located in South San Francisco, California. The lease commenced in November 2015 and continues through January 2021. The lease is subject to approximately 3.0% annual increases throughout the term of the lease. We also pay a pro rata share of operating costs, insurance costs, utilities and real property taxes.

As a result of the restructuring we announced on November 4, 2019, we abandoned two of our buildings in San Diego and our satellite office located in San Francisco. As a result, we have reassessed the likelihood of exercising contractual options impacting the term of these leases. These considerations have been reflected in the recognition of impairment charges of $1.1 million in accordance with ASC 360 during the year ended December 31, 2019.

Additionally, we lease certain office equipment under operating leases. Total rent expense was approximately $2.7 million, $2.5 million and $2.3 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Approximate annual future minimum operating lease payments as of December 31, 2019 are as follows (in thousands):

Year:	Operating Leases
2020	$ 3,355
2021	2,260
2022	1,559
2023	70
2024	—
Total minimum lease payments	$ 7,244
Less imputed interest	(775)
Total	$ 6,469

The weighted-average remaining lease term of our operating leases is approximately 2.36 years.

Other Commitments

We have existing supply agreements with contract manufacturing organizations Avid Bioservices, Inc. ("Avid") and Catalent Indiana LLC (formerly Cook Pharmica LLC) ("Catalent") to produce supplies of bulk rHuPH20. Under the terms of the agreements, we are committed to certain minimum annual purchases of bulk rHuPH20. At December 31, 2019, we had a $35.7 million minimum purchase obligation in connection with these agreements.

In June 2011, we entered into a services agreement with Patheon for the technology transfer and manufacture of Hylenex recombinant. At December 31, 2019, we had a $0.6 million minimum purchase obligation in connection with this agreement.

Legal Contingencies

From time to time, we may be involved in disputes, including litigation, relating to claims arising out of operations in the normal course of our business. Any of these claims could subject us to costly legal expenses and, while we generally believe that we have adequate insurance to cover many different types of liabilities, our insurance carriers may deny coverage or our policy limits may be inadequate to fully satisfy any damage awards or settlements. If this were to happen, the payment of any such awards could have a material adverse effect on our consolidated results of operations and financial position. Additionally, any such claims, whether or not successful, could damage our reputation and business. We currently are not a party to any legal proceedings, the adverse outcome of which, in management's opinion, individually or in the aggregate, would have a material adverse effect on our consolidated results of operations or financial position.

10. Income Taxes

The Tax Cuts and Jobs Act (the "Act") was enacted in December 2017. The Act reduces the U.S. federal corporate tax rate from 35% to 21%. As of December 31, 2017, the Company remeasured its existing deferred tax balance by recording a provisional benefit of $17.1 million, which was fully offset by a change in the valuation allowance. As of December 31, 2018, upon completing its analysis of the Act, the Company believes that the disclosures in its financial statements as of December 31, 2017 are accurate.

Total (loss) income before income taxes summarized by region were as follows (in thousands):

	Year Ended December 31,		
	2019	2018	2017
United States	$ (70,737)	$ (45,819)	$ 160,938
Foreign	(1,514)	(33,974)	(99,328)
Net (loss) income before income taxes	$ (72,251)	$ (79,793)	$ 61,610

Significant components of our net deferred tax assets/(liabilities) were as follows (in thousands).

	December 31,	
	2019	2018
Deferred tax assets:		
Net operating loss carryforwards	$ 39,401	$ 26,267
Deferred revenue	1,069	1,395
Research and development and orphan drug credits	114,357	106,406
Share-based compensation	9,972	9,541
Alternative minimum tax credit	1,683	2,959
ASC 842 lease liability	1,454	—
Interest expense limitation	2,163	1,750
Other, net	3,037	2,452
	173,136	150,770
Valuation allowance for deferred tax assets	(155,100)	(146,953)
Deferred tax assets, net of valuation	18,036	3,817
Deferred tax liabilities:		
Depreciation	(865)	(858)
Convertible note	(14,450)	—
ASC 842 right of use asset	(865)	—
Other, net	(173)	—
Total deferred tax liabilities	(16,353)	(858)
Net deferred tax asset	$ 1,683	$ 2,959

A valuation allowance of $155.1 million and $147.0 million has been established to offset the net deferred tax assets as of December 31, 2019 and 2018, respectively, as realization of such assets is uncertain. Under the Act, taxpayers are able to claim a refund of the AMT credit carryover by December 31, 2021. Accordingly, the recognized net deferred tax asset as of December 31, 2019 is the AMT credit carryover that will either be utilized or refunded by December 31, 2021.

Income tax expense was comprised of the following components (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Current - federal	$ 114	$ 82	$ 4,051
Current - state	(40)	519	120
Deferred - federal	(85)	(64)	(5,532)
Deferred - state	—	—	—
	$ (11)	$ 537	$ (1,361)

The provision for income taxes on earnings subject to income taxes differs from the statutory federal income tax rate due to the following (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Federal income tax expense (benefit) at 21% for 2019 and 2018 and 34% for 2017	$ (15,173)	$ (16,754)	$ 20,947
State income tax benefit, net of federal income tax impact	(1,509)	(4,297)	930
(Decrease) increase in valuation allowance	8,147	35,731	(77,181)
Enactment of the Tax Cuts and Jobs Act	—	—	17,132
Foreign income subject to tax at other than federal statutory rate	318	7,106	33,674
Shared-based compensation	315	425	525
Non-deductible expenses and other	924	1,599	5,779
Research and development credits, net	(1,091)	(5,210)	4,162
Orphan drug credits, net of federal add back	(5,718)	(18,063)	(7,329)
Convertible note discount in APIC	$ 13,776	$ —	$ —
	$ (11)	$ 537	$ (1,361)

At December 31, 2019, our unrecognized tax benefit and uncertain tax positions were $21.5 million. Of this, $0.2 million of this amount would affect the effective tax rate and $21.5 million would affect the effective tax rate only in the event the valuation allowance was removed. Of the unrecognized tax benefits, we do not expect any significant changes to occur in the next 12 months. Interest and/or penalties related to uncertain income tax positions are recognized by us as a component of income tax expense. For the years ended December 31, 2019, 2018 and 2017, we recognized an immaterial amount of interest and penalties.

The following table summarizes the activity related to our unrecognized tax benefits (in thousands):

	Year Ended December 31,		
	2019	2018	2017
Gross unrecognized tax benefits at beginning of period	$ 20,028	$ 14,428	$ 12,799
Increases in tax positions for prior years	69	3,083	—
Decreases in tax positions for prior years	(23)	—	(2,518)
Increases in tax positions for current year	1,409	2,517	4,147
Gross unrecognized tax benefits at end of period	$ 21,483	$ 20,028	$ 14,428

At December 31, 2019, we had federal, California and other state tax net operating loss carryforwards of approximately $118.5 million, $244.3 million and $26.7 million, respectively.

The following table shows key expiration dates of the federal and California net operating loss carryforwards (in thousands):

	Net Operating Loss	Expires in: 2020	2021 and beyond	2028 and beyond
Federal	$ 118,480	$ —	$ 118,480	—
California	$ 244,337	$ —	—	$ 244,337

At December 31, 2019, we had federal and California research and development tax credit carryforwards of approximately $27.9 million and $19.1 million, respectively. The federal research and development tax credits will begin to expire in 2024 unless previously utilized. The California research and development tax credits will carryforward indefinitely until utilized. Additionally, we had Orphan Drug Credit carryforwards of $88.0 million which will begin to expire in 2034.

Pursuant to Internal Revenue Code Section 382, the annual use of the net operating loss carryforwards and research and development tax credits could be limited by any greater than 50% ownership change during any three year testing period. As a result of any such ownership change, portions of our net operating loss carryforwards and research and development tax credits are subject to annual limitations. We completed an updated Section 382 analysis regarding the limitation of the net operating losses and research and development credits as of December 31, 2019. Based upon the analysis, we determined that ownership changes occurred in prior years; however, the annual limitations on net operating loss and research and development tax credit carryforwards will not have a material impact on the future utilization of such carryforwards.

The Company's 2015 and 2016 federal returns were selected for audit by the IRS. The audit was completed in September 2019 with no material adjustments.

We do not provide for U.S. income taxes on the undistributed earnings of our foreign subsidiary as it is our intention to utilize those earnings in the foreign operations for an indefinite period of time. At December 31, 2019 and 2018, there were no undistributed earnings in foreign subsidiaries.

We are subject to taxation in the U.S. and in various state and foreign jurisdictions. Our tax years for 2004 and forward are subject to examination by the U.S. and California tax authorities due to the carryforward of unutilized net operating losses and research and development credits.

A Swiss subsidiary, Halozyme Switzerland GmbH, was formed during the fourth quarter of 2016 and obtained a tax ruling from Canton of Basel Stadt for its operations in Switzerland. The tax ruling is dated December 21, 2016, and will continue for a period of ten years, not to extend beyond December 31, 2026. The combined income tax burden at the federal, cantonal and communal level will not exceed 10% during the period covered by the ruling. As a result of foreign losses and a full valuation allowance, no net tax benefit was derived for the year ended December 31, 2019 as a result of the tax ruling.

11. Employee Savings Plan

We have an employee savings plan pursuant to Section 401(k) of the Internal Revenue Code. All employees are eligible to participate, provided they meet the requirements of the plan. We are not required to make matching contributions under the plan. However, we voluntarily contributed to the plan approximately $2.2 million, $1.3 million and $1.2 million for the years ended December 31, 2019, 2018 and 2017, respectively.

12. Summary of Unaudited Quarterly Financial Information

The following is a summary of our unaudited quarterly results for the years ended December 31, 2019 and 2018 (in thousands):

	Quarter Ended			
2019 (Unaudited):	**March 31,**	**June 30,**	**September 30,**	**December 31,**
Total revenues [1]	$ 56,949	$ 39,148	$ 46,230	$ 53,665
Gross profit on product sales	$ 3,741	$ 3,883	$ 6,872	$ 6,006
Total operating expenses[3]	$ 53,983	$ 53,125	$ 70,767	$ 85,727
Net Income (loss)	$ 1,796	$ (14,624)	$ (25,015)	$ (34,397)
Net Income (loss) per share:				
Basic	$ 0.01	$ (0.10)	$ (0.17)	$ (0.24)
Diluted	$ 0.01	$ (0.10)	$ (0.17)	$ (0.24)
Shares used in computing net income (loss) per share:				
Basic	144,743	145,411	146,136	141,046
Diluted	147,474	145,411	146,136	141,046

	Quarter Ended			
2018 (Unaudited):	**March 31,**	**June 30,**	**September 30,**	**December 31,**
Total revenues [2]	$ 30,872	$ 35,202	$ 25,556	$ 60,232
Gross profit on product sales	$ 3,749	$ 3,647	$ 5,643	$ 5,059
Total operating expenses	$ 54,584	$ 55,275	$ 51,030	$ 60,303
Net loss	$ (27,461)	$ (22,893)	$ (27,850)	$ (2,126)
Net loss per share:				
Basic	$ (0.19)	$ (0.16)	$ (0.19)	$ (0.01)
Diluted	$ (0.19)	$ (0.16)	$ (0.19)	$ (0.01)
Shares used in computing net loss per share:				
Basic	142,656	143,568	143,949	144,203
Diluted	142,656	143,568	143,949	144,203

(1) Revenue for the quarter ended March 31, 2019 included $30.0 million in revenue under a collaborative arrangement from argenx.

(2) Revenues for the quarter ended December 31, 2018 included $30.0 million in revenue under a collaborative arrangement from Roche.

(3) Total operating expenses for the quarter ended December 31, 2019 included $28.4 million restructuring charges.

13. Restructuring Charges

On November 4, 2019, we announced that our HALO-301 Phase 3 clinical study evaluating investigational new drug PEGPH20 in combination with ABRAXANE and gemcitabine as a first-line therapy for treatment of patients with metastatic pancreatic cancer failed to reach the primary endpoint of overall survival. Due to the results of the study, we halted development activities for PEGPH20, closed our oncology operations and implemented an organizational restructuring to focus our operations solely on marketing Hylenex and our ENHANZE business. In connection with the restructuring, we reduced our headcount by approximately 55% or approximately 160 positions.

We incurred restructuring charges consisting of one-time severance payments and other employee related costs, including non-cash costs related to the acceleration of equity awards for employees affected by the restructuring, of $19.5 million in the fourth quarter of 2019. The majority of the cash payments for employee related restructuring charges will be paid during the first quarter of 2020. Additionally, we incurred one-time charges related to lease and other contract cancellations and asset impairments of $8.9 million in the fourth quarter of 2019. We may also incur additional costs not currently contemplated due to events that may occur as a result of, or that are associated with, the workforce reduction and the cancellation of our PEGPH20 programs.

Halozyme Therapeutics, Inc.

Schedule II

Valuation and Qualifying Accounts
(in thousands)

	Balance at Beginning of Period	Additions	Deductions	Balance at End of Period
For the year ended December 31, 2019				
Accounts receivable allowances [(1)]	$ 592	$ 7,327	$ (7,122)	$ 797
For the year ended December 31, 2018				
Accounts receivable allowances [(1)]	$ 559	$ 5,988	$ (5,955)	$ 592
For the year ended December 31, 2017				
Accounts receivable allowances [(1)]	$ 559	$ 4,645	$ (4,645)	$ 559

(1) Allowances are for chargebacks, prompt payment discounts and distribution fees related to Hylenex recombinant product sales.

Halozyme

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