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, 2020

or

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Commission File Number 001-35280

VERICEL CORPORATION

(Exact name of registrant as specified in its charter)

Michigan	**94-3096597**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

64 Sidney Street
Cambridge, MA 02139
(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code: **(617) 588-5555**

Securities registered pursuant to Section 12(b) of the Act:

Title of Class	**Trading Symbol(s)**	**Name of Each Exchange on Which Registered**
Common Stock (No par value)	VCEL	NASDAQ

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

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

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

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 x No o

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 x No o

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, smaller reporting company, or an 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. o

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S. 7262(b)) by the registered public accounting firm that prepared or issued its audit report ☒

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

The aggregate market value of the registrant's Common Stock, no par value per share ("Common Stock"), held by non-affiliates of the registrant (based on the closing sales price of the Common Stock as reported on the NASDAQ Capital Market) on June 30, 2020 was approximately $617,742,709. This computation excludes shares of Common Stock held by directors, officers and each person who holds 5% or more of the outstanding shares of Common Stock, since 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.

As of February 15, 2021, 45,954,992 shares of Common Stock, no par value per share, were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Document	**Form 10-K Reference**
Proxy Statement for the Annual Meeting of Shareholders scheduled for April 28, 2021	Items 10, 11, 12, 13 and 14 of Part III

VERICEL CORPORATION

ANNUAL REPORT ON FORM 10-K

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Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K, including the documents incorporated by reference herein, contains certain statements that describe our management's beliefs concerning future business conditions, plans and prospects, growth opportunities and the outlook for our business based upon information currently available. Such statements are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995, Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (Exchange Act). Wherever possible, we have identified these forward-looking statements by words such as "will," "may," "anticipates," "believes," "intends," "estimates," "expects," "plans," "projects," "trends," "opportunity," "current," "intention," "position," "assume," "potential," "outlook," "remain," "continue," "maintain," "sustain," "seek," "target," "achieve," "continuing," "ongoing," and similar words or phrases, or future or conditional verbs such as "would," "should," "could," "may," or similar expressions. These forward-looking statements are based upon assumptions our management believes are reasonable. Such forward-looking statements are subject to risks and uncertainties which could cause our actual results, performance and achievements to differ materially from those expressed in, or implied by, these statements, including, among others, the risks and uncertainties listed in this Annual Report on Form 10-K under "Part I, Item 1A Risk Factors."

Because our forward-looking statements are based on estimates and assumptions that are subject to significant business, economic and competitive uncertainties, many of which are beyond our control or are subject to change, actual results could be materially different and any or all of our forward-looking statements may turn out to be wrong. Forward-looking statements speak only as of the date made and can be affected by assumptions we might make or by known or unknown risks and uncertainties. Many factors mentioned in our discussion in this Annual Report on Form 10-K will be important in determining future results. New factors emerge from time to time, and it is not possible for us to predict which factors will arise. Consequently, we cannot assure you that our expectations or forecasts expressed in such forward-looking statements will be achieved. Except as required by law, we undertake no obligation to publicly update any of our forward-looking or other statements, whether as a result of new information, future events, or otherwise.

Except for the historical information presented, the matters discussed in this Report, including our product development and commercialization goals and expectations, our plans and anticipated timing and results of clinical development activities, potential market opportunities, revenue expectations and the potential advantages and applications of our products and product candidates under development, include forward-looking statements that involve risks and uncertainties. Our actual results may differ significantly from the results discussed in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed under the caption "Risk Factors." Unless the context requires otherwise, references to "we," "us," "our" and "Vericel" refer to Vericel Corporation.

We own various trademark registrations and applications, and unregistered trademarks, including Vericel Corporation, Epicel, MACI and our corporate logo. All other trade names, trademarks and service marks of other companies appearing in this Form 10-K are the property of their respective holders, including NexoBrid, which is a registered trademark of MediWound Ltd. Solely for convenience, the trademarks and trade names in this document may be referred to without the ® and ™ symbols, but such references should not be construed as any indicator that their respective owners will not assert, to the fullest extent under applicable law, their rights thereto. We do not intend to use or display other companies' trademarks and trade names to imply a relationship with, or endorsement or sponsorship of us by, any other companies.

SUMMARY OF THE MATERIALS RISKS ASSOCIATED WITH OUR BUSINESS

- We have incurred losses and may not achieve consistent profitability for some time or at all.
- Future sales of shares of common stock could have an adverse effect on the market price of such shares.
- We may not be able to raise the required capital to develop and commercialize our future product candidates and otherwise grow and expand our business.
- Our operating results will be harmed if we are unable to effectively manage and sustain our future growth or scale our operations.
- Seasonal sales patterns and other variations related to our revenue recognition may cause significant fluctuations in our results of operations and cash flows and may prevent us from achieving our quarterly or annual forecasts, which may cause our stock price to decline.
- Current financial market conditions may exacerbate certain risks affecting our business.
- We are dependent on our key manufacturing, quality and other management personnel and the loss of any of these individuals could harm our business.
- Failure to obtain and/or maintain required regulatory approvals would severely limit our ability to sell our products.
- Any changes in the regulatory requirements that affect our products and/or future product candidates could prevent, limit or delay our ability to market or develop new product candidates.
- The current pandemic of COVID-19 and the future outbreak of other highly infectious or contagious diseases, could seriously harm our research, development and commercialization efforts, increase our costs and expenses and have a material adverse effect on our business, financial condition and results of operations, including delaying regulatory authorities' ability to review and/or inspect required facilities or submissions.
- The Federal Government may commandeer materials or manufacturing facilities for the production of COVID-19 vaccines making it more difficult for us to obtain materials or manufacturing supplies needed for our preclinical studies or clinical trials or for our commercial product, which could lead to delays in studies, trials, or our commercial supply.
- If our manufacturing facility is destroyed or we experience any manufacturing difficulties, disruptions or delays, this could limit supply of our products or adversely affect our ability to conduct clinical trials and our business would be adversely impacted.
- If we do not manage inventory in an effective and efficient manner, it could adversely affect our results of operations.
- Failure of third parties, including for example Matricel GmbH, to manufacture or supply certain components, equipment, disposable devices and other materials used in our MACI® or Epicel® cell manufacturing processes would impair our cell product development and commercialization.
- Because our manufacturing and supply chain are subject to significant regulation, failure by our third-party manufacturers, including Matricel, to comply with the regulatory requirements set forth by the FDA with respect to our products could limit our ability to manufacture commercial products and/or result in the products being subject to restrictions or withdrawn from the market.

- Changes to our products or future product candidates may require regulatory approvals which could result in the delay of the change being made or, if not approved, prevent any changes from being made.
- Failure to obtain adequate reimbursement and reimbursement rates for our products could have a material adverse effect on our financial condition and operating results.
- NexoBrid® may not be approved for treatment of severe burns in the United States and other North American markets, or its approval may be materially delayed, and there is no guarantee that NexoBrid will be accepted in the market even if regulatory approval is received.
- Our licensor MediWound is dependent on a contract with the U.S. Biomedical Advanced Research and Development Authority (BARDA) to fund clinical trials and other development activities of NexoBrid in the United States and these contracts may be terminated by BARDA at any time.
- If any federal or state agency determines that we have promoted the off-label use of our products and/or we have violated anti-kickback laws, we may be subject to various penalties, including civil or criminal penalties, and the off-label use of our products may result in injuries that lead to product liability lawsuits, which could be costly to our business.

PART I

Item 1. *Business*

General Information

Vericel Corporation is a leader in advanced cell therapies and specialty biologics for the sports medicine and severe burn care markets. We currently market two FDA-approved autologous cell therapy products in the United States. MACI® (autologous cultured chondrocytes on porcine collagen membrane) is an autologous cellularized scaffold product indicated for the repair of symptomatic, single or multiple full-thickness cartilage defects of the knee with or without bone involvement in adults. Epicel® (cultured epidermal autografts) is a permanent skin replacement Humanitarian Use Device (HUD) for the treatment of adult and pediatric patients with deep-dermal or full-thickness burns comprising greater than or equal to 30 percent of total body surface area (TBSA). We also hold an exclusive license from MediWound Ltd. (MediWound) for North American rights to NexoBrid® (concentrate of proteolytic enzymes enriched in bromelain), a registration-stage biological orphan product for debridement of severe thermal burns. On June 30, 2020, MediWound submitted to the U.S. Food and Drug Administration (FDA) a Biologics License Application (BLA) seeking the approval of NexoBrid for eschar removal (debridement) in adults with deep partial-thickness and/or full-thickness thermal burns. The FDA subsequently accepted the BLA for filing and has assigned a Prescription Drug User Fee Act (PDUFA) target date of June 29, 2021.

Our Strategy

Our objective is to become the leading developer in advanced therapies for the sports medicine and severe burn care markets. To achieve this objective, we intend to:

- Increase MACI revenue by increasing the number of surgeons implanting MACI and the average number of implants per surgeon;
- Increase Epicel revenue by expanding the number of burn centers consistently using Epicel;
- Lower the marginal manufacturing costs for MACI and Epicel through increased volume;
- Commercialize and market NexoBrid for burn patients requiring debridement, should the FDA approve the NexoBrid BLA; and
- Generate operating income by keeping the growth in commercial expense lower than the growth in revenue.

COVID-19

Throughout 2020, the pandemic caused by the spread of a novel strain of coronavirus (COVID-19) has created significant disruptions to the U.S. and global economy and has contributed to significant volatility in financial markets. The global impact of the outbreak is continually evolving and, as the virus spreads and infection rates surge in various locations, many state, local and national governments – including those in Massachusetts and Michigan, where our operations are located – have responded by issuing, extending and supplementing orders requiring quarantines, restrictions on travel, and the mandatory closure of certain non-essential businesses, among other actions. In the U.S., the status and application of these orders have varied on a

state-by-state basis since the early days of the pandemic. Many of the restrictions have been periodically updated as infections rates in the U.S. have risen and fallen and as world health leaders learn more about the virus, its transmission pathway and who is most at risk. Because Vericel is deemed an essential business, we continue to be exempt from government orders, in their current form, requiring the closure of workplaces and the cessation of business operations.

Notwithstanding being an essential business, Vericel's business and operations have been adversely impacted by the effects of COVID-19. After the COVID-19 pandemic began directly affecting the U.S. in March 2020, the American College of Surgeons and United States Surgeon General recommended that each hospital, health system, and surgeon minimize, postpone, or cancel electively scheduled surgeries. These recommendations were followed by numerous state level executive orders either restricting or partially restricting elective surgeries. Because MACI is an elective surgical procedure, as a result of these restrictions, beginning in mid-March 2020, we began to experience a significant increase in cancellations of scheduled MACI procedures as well as a slowdown in new MACI orders. By early April 2020, 45 states, representing over 95% of total U.S. surgical capacity had issued either mandates or recommendations and guidelines suspending elective surgical procedures. The widespread suspension of elective procedures impacted our business and operations during the first and second quarters of 2020. These restrictions began to ease in May and by the end of September 2020 there were no state orders in place that directly impacted a surgeon's or patient's ability to move forward with a MACI surgery. Consequently, MACI procedure and order volumes recovered throughout the third and fourth quarter of 2020, and the majority of MACI cases that had previously been canceled as a result of COVID-19 factors were rescheduled. The COVID-19 pandemic remains unpredictable, however, and in late September and October 2020, the number of COVID-19 infections began to increase markedly in various geographies and by late December 2020 the rolling seven-day average of new daily coronavirus cases in the United States reached the highest level at any point during the pandemic. As a result, the scheduling of MACI pipeline cases during the last two weeks of December slowed compared to historical trends and there was an increase in case cancellations during that period. Although hospitals are now better prepared for subsequent surges in COVID-19 patients, the risk remains that regional or local restrictions could again be placed on the performance of elective surgical procedures, or that patients may choose to postpone or be unable to appear for a MACI procedure if the number of COVID-19 infections in the United States continues to rise.

Though Epicel is used almost exclusively in an emergent setting by burn centers and surgeons throughout the country, Epicel revenue and procedure volumes have been less affected by the pandemic. Nevertheless, large burns and burn admissions can be affected by restrictions on human activity resulting from more severe government lockdown orders. Epicel procedure volumes did experience a slow-down during the second quarter of 2020, however, the reduction was less pronounced than that observed with MACI. Further reductions could occur in the future, based on the degree of restrictions imposed.

At the outset of the pandemic, Vericel put in place a comprehensive workplace protection plan, which institutes protective measures in response to COVID-19. These measures include mandatory employee training on social distancing and hygiene protocols, conducting daily health screenings of all employees, vendors and visitors entering our facilities, canceling all international business travel, limiting domestic business travel to essential purpose travel only, requesting that employees limit non-essential personal travel, enhancing our facilities' janitorial and sanitary procedures, making certain physical modifications and enhancements to our facilities to enable effective social distancing among employees, providing certain personal protective equipment to employees working in our offices, encouraging employees to work from home to the extent their job function enables them to do so, limiting third-party access to our facilities, encouraging the use of virtual employee meetings, modifying the manner and schedule of on-site production activities, and providing guidance to our field-based commercial teams concerning their communications and contact with customers and healthcare professionals. In addition, we put certain expense reduction measures in place including a reduction of discretionary spending. We are reviewing these measures regularly as the pandemic evolves and may take additional actions to the extent required.

We continue to manufacture MACI and Epicel and are maintaining a significant safety stock of all key raw materials. We do not expect current supply chain interruptions will impact our ongoing manufacturing operations. With respect to customer delivery, MACI final product has an established shelf life of six (6) days and an established shipping shelf life of three (3) days. Currently, MACI is picked up by courier and shipped by commercial air or ground transportation to customer surgical sites. Epicel final product has an established shelf life of 24 hours and is hand carried to customer hospitals by courier. Transportation is primarily by commercial or charter airline. Although we have not experienced material shipping delays or materially increased costs to date, significant disruption of air travel could result in the inability to deliver MACI or Epicel final products to customer sites within appropriate timeframes, which could further adversely impact our business. To date there has been no impact of COVID-19 on our distributors, operations or third-party service providers' ability to manage patient cases.

We believe it is likely that we will continue to experience variable impacts on our business, based on the resurgence of COVID-19 in various areas of the United States. Measures taken to limit the impact of COVID-19 at the international, national

and local levels, including shelter-in-place orders, social distancing measures, travel bans and restrictions, and business and government shutdowns, may continue to create significant negative economic impacts on a global basis. Given that uncertainty, we cannot reliably estimate the extent to which the COVID-19 pandemic may continue to impact utilization and revenues of our products in 2021 and beyond.

For a discussion of additional risks associated with COVID-19, please see Item 1A. Risk Factors.

Product Portfolio

Our marketed products include two FDA-approved autologous cell therapies: MACI a third-generation autologous implant for the repair of symptomatic, full-thickness cartilage defects of the knee in adult patients and Epicel a permanent skin replacement for adult and pediatric patients with deep dermal or full-thickness burns greater than or equal to 30% of TBSA. Both products are currently marketed in the U.S. In addition, we have entered into exclusive license and supply agreements with MediWound to commercialize NexoBrid in North America. MediWound has submitted a BLA to the FDA seeking commercial approval of NexoBrid, a topically-administered biological product that enzymatically removes nonviable burn tissue, or eschar, in patients with deep partial and full-thickness thermal burns. That BLA is currently under review and a PDUFA target date of June 29, 2021 has been established by the agency.

MACI

Background of Cartilage Defects

Damage to cartilage in the knee can occur from acute or repetitive trauma from playing sports, exercising, work related physical demands, or performing everyday activities. When damaged, cartilage in the knee does not usually heal on its own. If left untreated, cartilage defects can progress and lead to degenerative joint disease, osteoarthritis and potentially require total knee replacement – a poor option for younger and more active patients.

For patients diagnosed with cartilage defects, there are several treatment options, including arthroscopic debridement/chondroplasty, marrow stimulation techniques such as microfracture (a minimally invasive procedure that can be performed arthroscopically), osteochondral autografts for smaller cartilage injuries, osteochondral allografts, and autologous chondrocyte implantation (ACI). Allogeneic tissue-derived products are also used to treat cartilage defects. These products, which are subject to human tissue regulation, include DeNovo® NT (marketed by Zimmer Holdings, Inc. (Zimmer Biomet)), Cartiform® (manufactured and distributed by Osiris (recently acquired by Smith & Nephew) and marketed by Arthrex) and Prochondrix® (marketed by Stryker). Products subject only to FDA human tissue regulations are not required to obtain a Biologics License prior to being marketed. Products, like MACI, which must meet the requirements for a BLA before being marketed, are required to demonstrate clinical efficacy equal or superior to a standard of care.

Carticel was the first FDA-approved autologous cartilage repair product for the repair of symptomatic cartilage defects and was indicated for the repair of symptomatic cartilage defects of the femoral condyle (medial, lateral or trochlea) caused by acute or repetitive trauma, in patients who have had an inadequate response to a prior arthroscopic or other surgical repair procedure such as debridement (the removal of damaged or defective cartilage), microfracture (the creation of tiny fractures in the bone to encourage new cartilage), drilling/abrasion arthroplasty, or osteochondral allograft/autograft. Carticel received a BLA approval in 1997, and was marketed in the U.S. until the second quarter of 2017. The FDA approved MACI on December 13, 2016.

MACI is an autologous cellular scaffold product consisting of autologous cultured chondrocytes seeded onto a resorbable Type I/III porcine-derived collagen membrane. Autologous cultured chondrocytes are human-derived cells which are obtained from a sample of the patient's own cartilage for the manufacture of MACI. An orthopedic surgeon obtains the sample by taking a cartilage biopsy during an initial arthroscopic procedure. We isolate the patient's chondrocytes (the cells that produce cartilage) from the biopsy and expand those cells in a manufacturing process compliant with current Good Manufacturing Practices (cGMP). The expanded cells are then uniformly seeded onto a resorbable collagen membrane using a proprietary process prior to shipment. After receipt by the surgeon, MACI is implanted into the cartilage defect(s). A key driver of ACI's therapeutic advantage relative to other approaches, such as microfracture, is that autologous chondrocytes have the potential to produce the hyaline-like cartilage that is naturally present in the knee, rather than fibrous cartilage, which lacks the durability and wear characteristics of hyaline cartilage. Unlike Carticel, which was a cell suspension and required a membrane to be sutured in place to confine the cell suspension to the defect area, MACI is comprised of cells uniformly seeded on a collagen membrane resulting in a surgery that is simpler than that with Carticel. MACI may be implanted through a smaller incision or mini arthrotomy for focal defects. By using specialized instruments, MACI is simply trimmed by the surgeon to the size of the

defect, allowing for a precise fit, and fixed to the bone with an off-the-shelf surgical fibrin sealant. MACI has expanded the ACI market since MACI shares the efficacy advantages of Carticel while being less invasive, having a shorter procedure time, and eliminating the need for a periosteal harvest and suture fixation of the periosteal patch. In addition, MACI is indicated for a broader range of cartilage defects of the knee, ensures more uniform distribution of the cells in the cartilage defect and is supported by Phase 3 clinical data demonstrating a statistically significant improvement in pain and function scores compared to microfracture.

The pivotal clinical trial supporting MACI registration in Europe and approval in the U.S., the Superiority of MACI Implant versus Microfracture Treatment in patients with symptomatic articular cartilage defects in the knee (SUMMIT) trial, was completed in 2012. Analysis of this 144 patient study demonstrated at Week 104 a statistically significant greater improvement in the co-primary endpoint of pain and function for those patients treated with MACI compared to microfracture.

MACI became commercially available in the EU in 2001 and Australia in 2002, prior to promulgation of regulations requiring marketing authorizations for cell therapies in Europe and Australia. MACI received marketing authorization in Europe in June 2013, by meeting the requirements of the Advanced Therapy and Medicinal Product (ATMP) guidelines based on the results of the SUMMIT trial in which MACI was manufactured at, and supplied from, our Cambridge, Massachusetts site. We suspended the marketing of MACI in Europe in September 2014, primarily due to an unfavorable pricing environment. Lifting of the suspension would have required the registration of a new manufacturing facility in Europe prior to the five year renewal deadline of June 2018, which was not feasible. Consequently, the European manufacturing authorization for MACI expired by its terms at the end of June 2018. Australian operations and the commercialization of MACI in that country was discontinued prior to our acquisition of the product in 2014.

Market Opportunity for MACI

According to a 2018 external market study, approximately 750,000 patients undergo cartilage repair procedures of the knee, annually in the United States. Of these, approximately 315,000 patients are consistent with the current MACI label. Based on defect characteristics, doctors that have implanted MACI consider approximately 125,000 of these patients clinically appropriate for MACI. Approximately 60,000 of these eligible patients have larger lesions and are likely to secure insurance authorization for MACI.

Initially, all patients undergo arthroscopy to confirm a cartilage defect. Approximately 80% of these patients have a chondroplasty only, with the balance also undergoing a microfracture procedure during this initial surgery. Approximately 10% of patients undergo a second surgery and receive either an osteochondral allograft or MACI. Although data shows that patients treated with microfracture do experience pain score improvement, generally only patients with Class 1 defects (i.e., the smallest defects) do not experience subsequent deterioration after 18 months following the procedure. Treatment with MACI provides an opportunity to replace the damaged cartilage in larger defects with a durable cartilage tissue.

In the U.S., the target audience of U.S. physicians that repair cartilage defects consists of approximately 5,000 orthopedic surgeons and is divided into two segments - a group of orthopedic surgeons who self-identify and/or have a formal specialty as sports medicine physicians, and a sub-population of general orthopedic surgeons who perform a high volume of cartilage repair procedures. As of December 31, 2020, we have increased the number of MACI sales representatives to 76 Clinical Account Specialists and expanded their reach to over nine geographical regions to enable the sales force to call on 2,000 of the general orthopedic surgeons. Most private payers have a medical policy that covers treatment with MACI, with the top 30 largest commercial payers having a formal medical policy for MACI or ACI in general. Even for private payers that have not yet approved a medical policy for MACI, for medically appropriate cases, we often obtain approval on a case-by-case basis.

In the year ended December 31, 2020, MACI net revenues totaled $94.4 million. During 2020, the effects of the COVID-19 pandemic disrupted the normal seasonality of our MACI business. These effects included, among others, the temporary limitation of elective surgical procedures throughout the country, the periodical inability of our Clinical Account Specialists from calling on surgeon customers and, we believe, a reduction in the number of patients seeking treatment for cartilage damage. In previous years, the volume of our MACI business has varied significantly by quarter due to several factors including insurance deductible limits and the time of year patients prefer to start rehabilitation. In the four years preceding 2020, ACI (MACI and Carticel prior to its replacement) sales volumes from the first through the fourth quarter have on average represented 19% (16%-24% range), 23% (21%-25% range), 22% (20%-23% range) and 36% (32%-38% range) respectively, of total annual volumes. Due to the COVID-19 pandemic, the seasonality of our business in 2020 did not follow historical patterns.

Seasonal sales patterns and other variations related to our revenue recognition may cause significant fluctuations in our results of operations and cash flows. We expect to continue to experience this seasonality effect in subsequent years.

Epicel

Epicel (cultured epidermal autografts) is a permanent skin replacement for deep-dermal or full-thickness burns greater than or equal to 30% of TBSA. The extent of the skin surface that the burn affects is usually referred to as a percent of TBSA. Epicel is currently the only FDA-approved cultured epidermal autograft product available for large total surface area burns in both adult and pediatric patients.

Epicel is produced by isolating and expanding keratinocytes, which are the predominant cell type in the epidermis or outer layer of the skin, and which are originally obtained by taking of a small biopsy of a patient's healthy skin. Epicel is an important treatment option for patients with severe burns because these patients are generally understood to need a keratinocyte-based epithelium, and because of the severity and extent of their burns, these patients generally have very little healthy skin remaining on their bodies from which to obtain keratinocyte-based epithelium for autografting.

Epicel is a cell-based product that is regulated by the Center for Biologics Evaluation and Research (CBER) under medical device authorities. Epicel was designated as a HUD in 1998 and a Humanitarian Device Exemption (HDE) application for the product was submitted in 1999. HUDs are devices that are intended for diseases or conditions that affect not more than 8,000 individuals annually in the United States. Under an HDE approval, a HUD cannot be sold for an amount that exceeds the cost of research and development, fabrication and distribution unless certain conditions are met. A HUD is eligible to be sold for profit after receiving HDE approval if the device meets certain eligibility criteria, including where the device is intended for the treatment of a disease or condition that occurs in pediatric patients and such device is labeled for use in pediatric patients.

On February 18, 2016, the FDA-approved our HDE supplement to revise the labeled indications of use for Epicel to specifically include pediatric patients. The revised product label also now specifies that the probable benefit of Epicel, mainly related to survival, was demonstrated in two Epicel clinical experience databases and a physician-sponsored study comparing outcomes in patients with massive burns treated with Epicel relative to standard care. Because of the change in the label to specifically include use in pediatric patients, Epicel is no longer subject to the HDE profit restrictions. In conjunction with adding the pediatric labeling and meeting pediatric eligibility criteria, the FDA has determined the Annual Distribution Number, or ADN, for Epicel to be 360,400 which is approximately 45 times larger than the volume of grafts sold in 2019. We currently have an eleven-person sales force comprised of seven (7) account managers and four (4) burn clinical specialists, overseen by a senior sales director.

Currently, over 100 patients are treated with Epicel in the U.S. each year. In the year ended December 31, 2020, Epicel net revenues totaled $27.5 million.

Market Opportunity for Epicel

Each year in the U.S., more than 40,000 people are hospitalized for burns. Approximately 1,500 of these patients are treated for burns covering more than 30% of their TBSA, the labeled indication for Epicel. Currently, the mortality rate for this group is approximately 34%, partially due to the inability to close wounds because of the lack of remaining healthy tissue from which to harvest autografts. Although age can vary, the typical Epicel patient is young and has suffered full-thickness burns due to a wide variety of occupational, household or auto accidents. Many of the most severely burned patients are medivac transported to one of the approximately 140 specialized burn centers across the U.S. While the average acute care hospital has less than 3 admissions for burns annually, these specialized burn centers average over 200 admissions per year.

Relative to clinical need, we believe Epicel has been underutilized due to the lack of a consistent promotional effort prior to 2015. Since the acquisition of Epicel we have expanded our sales force from a single representative to eleven sales and clinical personnel. We expect Epicel's utility to continue to grow as commercial and medical efforts are appropriately dedicated to the product and the burn centers that use it to treat patients.

Due to the low incidence and sporadic nature of severe burns, Epicel revenue has inherent variability from quarter to quarter and does not exhibit significant seasonality. Over the past four years, a single quarter has ranged from as high as 38% to as low as 18% of annual revenue. Seasonal sales patterns and other variations related to our revenue recognition may cause significant fluctuations in our results of operations and cash flows.

NexoBrid

Our preapproval stage portfolio includes NexoBrid, a topically-administered biological product that enzymatically removes nonviable burn tissue, or eschar, in patients with deep partial and full-thickness thermal burns. On June 30, 2020, we announced the submission of a BLA to the FDA seeking the approval of NexoBrid. Subsequently, on September 16, 2020, we announced that the FDA accepted the BLA for review and assigned a PDUFA target date of June 29, 2021. NexoBrid is approved in the European Union and other international markets and has been designated as an orphan biologic in the United States, European Union and other international markets. Pursuant to the terms of our existing license agreement, if the BLA is approved, MediWound will transfer the BLA to Vericel and Vericel will market NexoBrid in the U.S. Both MediWound and Vericel, under the supervision of a Central Steering Committee comprised of members of both companies will continue to guide the development of NexoBrid in North America. Under our license agreement with MediWound, NexoBrid is being manufactured for BARDA prior to approval by the FDA under an emergency use authorization. Vericel recorded revenue of $2.2 million associated with the delivery of NexoBrid to BARDA during the year ended December 31, 2020.

Production

Cell Manufacturing and Cell Production Components

Our cell-manufacturing facility is located in Cambridge, Massachusetts, and is used for U.S. manufacturing and distribution of MACI and Epicel. The Cambridge facility also houses our research and development function, which is responsible for process development, release assay development, and technology transfers between sites and departments.

Research & Development

The bulk of our ongoing research and development activities are focused on exploring methods that improve our ability to efficiently manufacture high quality cell therapy products for patients. We have performed an in-depth analysis of the cell culture processes used in the manufacturing of Epicel and MACI and have identified several areas for potential improvement. Therefore, our research and development program is focused on the many facets of process development for all of our products including, but not limited to, tissue procurement and processing, cell culture surface and media modification, and other process efficiencies.

Patents and Proprietary Rights

Our success depends in part on our ability, and the ability of our future licensors, to obtain patent protection for our products and processes.

As part of the acquisition of the CTRM business from Sanofi, we acquired a multinational intellectual property estate. The intellectual property estate includes patents and patent applications directed to chondrocyte implants and technologies related to the determination of the presence of chondrocytes in the cell cultures used to produce the chondrocyte implants. Although we do not own any patents or patent applications relating to Epicel, many of the processes and techniques are trade secrets and would be difficult to replicate without significant investment and time. We own issued patents directed to methods of determining the presence of chondrocytes in cell cultures used to produce both MACI and Carticel, which are scheduled to expire October 2029 in the U.S. and in April 2028 abroad. We have one issued patent in the U.S. directed to a device related to MACI that is set to expire in November 2033, and one pending application in both the U.S. and the European Union.

As a biologic, MACI is entitled to twelve years of data exclusivity until December 13, 2028, calculated from its date of approval. When these patents and data exclusivity expire, our opportunity to establish or maintain product revenue could be substantially reduced. In the future, we may also rely on certain licenses granted by third parties for certain patent rights, including for future product candidates, such as the license from MediWound for North American commercial rights to NexoBrid. We will need to comply with the terms of such agreements in order to maintain our rights to such patents.

Our efforts to secure our proprietary rights also include our reliance on trade secrets and un-patentable know-how, which we seek to protect, in part, by confidentiality agreements. It is our policy to require our employees, consultants, contractors, manufacturers, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information developed or made known to the individual during the course of the individual’s relationship with us is to be kept confidential and not disclosed to third parties except in specific limited circumstances. We also require signed confidentiality or material transfer agreements from any company that is to receive our confidential information. In the case of employees,

consultants and contractors, the agreements generally provide that all inventions conceived by the individual while rendering services to us shall be assigned to us as the exclusive property of Vericel.

See “Government Regulation - Product Approval” and “Risk Factors - Risks Related to Intellectual Property,” below, for additional information.

We also own a broadly filed trademark portfolio with registrations for MACI, Epicel and Carticel.

Sales and Marketing

Both our marketed and development stage products are specialty products with focused physician and institutional call points. The MACI sales organization is comprised of approximately 76 Clinical Account Specialists in nine geographical regions. Those Clinical Account Specialists are managed by nine area sales directors and ultimately overseen by a National Sales Director. The current target audience is a concentrated (approximately 5,000) set of sports medicine and general orthopedic surgeons and their staffs.

Most private payers have a medical policy that covers treatment with MACI with the top 30 largest commercial payers having a formal medical policy for MACI or ACI in general. Even for private payers that have not yet approved a medical policy for MACI, for medically appropriate cases, we often obtain approval on a case-by-case basis.

We contract with two specialty pharmacies, Orsini Pharmaceutical Services, Inc. (Orsini) and AllCare Plus Pharmacy, Inc. (AllCare) to distribute MACI in a manner in which we retain the credit and collection risk from the end customer. Pursuant to these agreements, both Orsini and All-Care act as non-exclusive specialty pharmacy providers of MACI, and we pay both specialty pharmacies a fee for each patient to whom MACI is dispensed. In addition, we sell MACI directly to DMS Pharmaceutical (DMS) for military patients treated at military treatment facilities, or direct to facilities based on contracted rates.

Epicel customers are supported by a sales team of eleven, which includes a combination of seven (7) account managers, and four (4) burn clinical specialists, as well as a dedicated marketing and sales management staff. There are approximately 140 specialized burn centers in the U.S., and a subset of these institutions regularly treat patients suffering from large TBSA burns. As a result, reaching target centers is feasible with a relatively small sales team. The burn sales team for Epicel was increased to support the anticipated NexoBrid launch, following BLA approval by the FDA.

Government Regulation

Our research and development activities and the manufacturing and marketing of our products are subject to the laws and regulations of governmental authorities in the United States and other countries in which our products may be marketed. Specifically, in the United States, the FDA regulates drugs, biologics and medical devices and requires new product approvals or clearances to assure safety and effectiveness of these products. Governments in other countries have similar requirements for testing and marketing. In the United States, in addition to meeting FDA regulations, we are also subject to other federal laws, such as the Occupational Safety and Health Act and the Environmental Protection Act, as well as certain state laws.

Some human cell or tissue products that are intended for implantation, transplantation, infusion, or transfer into a human recipient are regulated solely as human cell, tissue, and cellular and tissue-based products (HCT/Ps) and do not require the FDA’s premarket review. If these cell or tissue products do not meet the FDA’s requirements for regulation solely as an HCT/P, they require FDA premarket review and marketing authorization. The types of marketing authorizations required for non HCT/P cell therapy products have evolved since cell therapy products were initially introduced. Epicel was approved by the Center for Devices and Radiological Health, as an HDE medical device in 2007, but now is regulated by CBER under the same medical device regulations. MACI, approved in 2016, is regulated by CBER as a combination cell therapy/device product and required an approved BLA to be marketed in the U.S. NexoBrid, a product licensed in North America from MediWound, is currently in clinical development in North America. In the U.S., NexoBrid is regulated as a botanical protein biologic and requires an approved BLA to be marketed in the U.S. Commercial production of these products needs to occur in FDA-registered facilities in compliance with cGMP requirements for biologics.

Regulatory Process

The FDA regulates biologics under the Federal Food, Drug, and Cosmetic Act (FFDCA) and the Public Health Service Act, and their implementing regulations. Obtaining approval of a BLA for a new biological product is a lengthy process leading from development of a new product through preclinical and clinical testing. This process takes a number of years and the expenditure of significant resources. There can be no assurance that our current or future product candidates will ultimately receive approval.

The FFDCA and other federal and state statutes and regulations govern the research, testing, manufacture, safety, labeling, storage, record-keeping, approval, distribution, use, adverse event reporting, advertising and promotion of our products. Noncompliance with applicable requirements can result in civil penalties, recall, injunction or seizure of products, refusal of the government to approve our product approval applications or to allow us to enter into government supply contracts, withdrawal of previously approved applications and criminal prosecution.

Product Approval

In order to obtain an FDA license for, or approval of, a new biological product, sponsors must submit proof of safety, purity and potency, or effectiveness. In most cases, such proof entails extensive nonclinical, also known as preclinical, studies in animal models and well-controlled clinical trials in human subjects. The testing, preparation of necessary applications and processing of those applications by the FDA is expensive, may take several years to complete and could have uncertain outcomes. The FDA regulatory review and approval process is complex and can result in requests for additional data, increased development cost, time to market delays, or preclude us from bringing to market new products. The FDA may also require post-marketing studies and risk evaluation and mitigation strategies (REMS) as conditions to approval. These requirements will add to the cost of regulatory compliance and the cost to sell our products, due to complex distribution and restricted commercial operations. Product approvals may be withdrawn if compliance with applicable regulations is not maintained or if safety issues are identified during routine safety monitoring following commercialization.

Adequate and well-controlled clinical studies are required by the FDA for approval of a BLA. To conduct a clinical trial in the U.S., the study sponsor is required to submit an Investigational New Drug (IND) application, including the study protocol, prior to commencing human clinical trials. The submission must be supported by data, typically including the results of nonclinical, manufacturing and laboratory testing. The conduct of the nonclinical tests must comply with Good Laboratory Practice, and applicable cGMP requirements. Long-term nonclinical testing, such as animal reproductive toxicity and carcinogenicity, is conducted if warranted, and its results are submitted to the IND to support a future BLA. Following the initial submission of the IND, the FDA has 30 days to review the application and raise safety and other clinical trial issues. If questions or objections are not raised within that period, the clinical trial may commence according to the investigational protocol submitted to the FDA and following Institutional Review Board (IRB) approvals for each of the clinical sites where the study will be conducted. Protocol amendments need to be submitted and approved by the FDA prior to implementation. We have submitted an IND for MACI, and we conducted clinical investigations under that IND. Clinical studies can also be conducted outside of the U.S. with or without a U.S. IND. However, a clinical trial application (CTA) or IND is required to be submitted to the local competent regulatory authority to begin conducting human clinical trials. The CTA has similar data requirements to those of an IND.

MACI and Nexobrid are regulated by the FDA as biologics. For products that are regulated as biologics, the FDA requires: (i) nonclinical animal testing to establish a safety profile and/or a starting dose for initiation of clinical trials in humans; (ii) submission to the FDA of an IND application, which must become effective prior to the initiation of human clinical trials; (iii) adequate and well-controlled clinical trials to demonstrate the safety, purity and potency, or effectiveness, of the product for its intended use; (iv) submission to the FDA of a BLA; and (v) review and approval of the BLA as well as pre-approval inspections of the manufacturing facility by the FDA.

For purposes of BLA approval, human clinical trials are typically conducted in three sequential phases that may sometimes overlap:

- Phase 1—The biological product is initially tested for safety and tolerability. In the case of biological products and those for severe or life-threatening diseases, the initial human testing is generally conducted in healthy patients. These trials may also provide early evidence of effectiveness.

- Phase 2—These trials are conducted in a limited number of subjects in the target population to determine a safe and effective dosage to evaluate in Phase 3 and to identify possibly related adverse effects and safety risks. Multiple

Phase 2 clinical trials may be conducted by the sponsor to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.

- Phase 3—Phase 3 trials are undertaken to provide evidence of clinical efficacy and to further evaluate dosage, potency, and safety in an expanded patient population at multiple clinical trial sites. Phase 3 studies are performed after preliminary evidence suggesting effectiveness of the product has been obtained, and are intended to establish the overall benefit-risk relationship of the investigational product, and to provide an adequate basis for product approval and labeling.

Post-approval clinical trials, sometimes referred to as Phase 4 clinical trials, may be conducted after initial marketing approval. These trials may be required by the FDA as a condition of approval and are used to gain additional experience from the treatment of patients in the intended therapeutic indication, particularly for long-term safety follow-up. The FDA has express statutory authority to require post-market clinical trials to address safety issues. All of these trials must be conducted in accordance with good clinical practice (GCP) requirements in order protect the health and safety of human subjects and for the data to be considered reliable for regulatory purposes.

During all phases of clinical development, regulatory agencies require extensive monitoring and auditing of all clinical activities, clinical data, and clinical trial investigators. Annual progress reports detailing the results of the clinical trials must be submitted to the IND. Written IND safety reports must be promptly submitted to the FDA and the investigators for serious and unexpected adverse events; any findings from other studies, tests in laboratory animals or in vitro testing that suggest a significant risk for human subjects; or any clinically important increase in the rate of a serious suspected adverse reaction over that listed in the protocol or investigator brochure. The sponsor must submit an IND safety report within 15 calendar days after the sponsor determines that the information qualifies for reporting. The sponsor also must notify the FDA of any unexpected fatal or life-threatening suspected adverse reaction within seven calendar days after the sponsor's initial receipt of the information.

Phase 1, Phase 2, and Phase 3 clinical trials may not be completed successfully or within any specified period, or at all. Regulatory authorities, a data safety monitoring board or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the participants are being exposed to an unacceptable health risk. Similarly, an IRB can suspend or terminate approval of a clinical trial at its institution if the clinical trial is not being conducted in accordance with the IRB's requirements or if the biological product has been associated with unexpected serious harm to patients.

A drug being studied in clinical trials may be made available to individual patients in certain circumstances. Pursuant to the 21st Century Cures Act, or Cures Act, which was signed into law in December 2016, the manufacturer of an investigational drug for a serious disease or condition is required to make available, such as by posting on its website, its policy on evaluating and responding to requests for individual patient access to such investigational drug. This requirement applies on the later of 60 calendar days after the date of enactment of the Cures Act or the first initiation of a Phase 2 or Phase 3 trial of the investigational drug.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the physical characteristics of the biological product as well as finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. To help reduce the risk of the introduction of adventitious agents with the use of biological products, the Public Health Service Act, (PHS Act) emphasizes the importance of manufacturing control for products whose attributes cannot be precisely defined. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the sponsor must develop methods for testing the identity, strength, quality, potency, and purity of the final biological product. Additionally, appropriate packaging must be selected and tested and stability studies must be conducted to demonstrate that the biological product candidate does not undergo unacceptable deterioration over its shelf life.

After completion of the required clinical testing, a BLA is prepared and submitted to the FDA. FDA review and approval of the BLA is required before marketing of the product may begin in the United States. The BLA must include the results of all nonclinical, clinical, and other testing and a compilation of data relating to the quality and manufacture of the product, including, chemistry, manufacture, and controls, to demonstrate the safety, purity and potency, or efficacy, of the product based on these results. The cost of preparing and submitting a BLA is substantial. Under federal law, the submission of most BLAs is subject to an application user fee, as well as an annual prescription drug product program user fees, which may total several million dollars and are increased annually.

The FDA has 60 days from its receipt of a BLA to determine whether the application will be accepted for filing based on the agency's threshold determination that it is sufficiently complete to permit substantive review. Once the submission is accepted

for filing, the FDA begins an in-depth review. The FDA has agreed to certain performance goals in the review of BLAs, including to review 90 percent of standard BLAs within 10 months from the date the application is accepted for filing. Although the FDA often meets its user fee performance goals, the FDA can extend these timelines as warranted. The FDA usually refers applications for novel biologics, or biologics which present difficult questions of safety or efficacy, to an advisory committee-typically a panel that includes clinicians and other experts-for review, evaluation, and a recommendation as to whether the application should be approved. The FDA is not bound by the recommendation of an advisory committee, but it generally follows such recommendations. Before approving a BLA, the FDA will typically inspect one, or more, clinical sites to assure compliance with GCP. Additionally, the FDA will inspect the facility or the facilities at which the biologic is manufactured as part of a pre-approval inspection. The FDA will not approve the product unless it verifies that compliance with requirements for cGMP is satisfactory and the BLA contains data that provide substantial evidence that the biologic is safe, pure and potent, or effective, for the intended use.

For certain products, the FDA also will not approve the product if the manufacturer is not in compliance with the Good Tissue Practices (GTP). These are FDA regulations that govern the methods used in, and the facilities and controls used for, the manufacture of HCT/Ps, which are human cells or tissue intended for implantation, transplant, infusion, or transfer into a human recipient. The primary intent of the GTP requirements is to ensure that cell and tissue based products are manufactured in a manner designed to prevent the introduction, transmission and spread of communicable disease. FDA regulations also require tissue establishments to register and list their HCT/Ps with the FDA and, when applicable, to evaluate donors through screening and testing. To assure cGMP, GTP and GCP compliance, an applicant must incur significant expenditure of time, money and effort in the areas of training, record keeping, production, and quality control.

After the FDA evaluates the BLA and the manufacturing facilities, it issues either an approval letter or a complete response letter. A complete response letter means that the BLA will not be approved in its present form and generally outlines the deficiencies in the submission. Complete responses may require substantial additional testing, or information, in order for the FDA to reconsider the application. If and when those deficiencies have been addressed to the FDA's satisfaction, the FDA will issue an approval letter. The agency will review such resubmissions in two or six months depending on the type of information included. The FDA approval is never guaranteed, and the FDA may refuse to approve a BLA if the regulatory requirements are not satisfied.

An approval letter authorizes commercial marketing of the biologic with specific prescribing information for specific indications. The approval for a biologic may be significantly more limited than requested in the application, including limitations on the specific diseases and dosages or the indications for use, which could restrict the commercial value of the product. The FDA may also require that certain contraindications, warnings, or precautions be included in the product labeling. In addition, as a condition of BLA approval, the FDA may require a REMS to help ensure that the benefits of the biologic outweigh the potential risks. REMS can include medication guides, communication plans for healthcare professionals, and elements to assure safe use (ETASU). ETASU can include, but are not limited to, special training or certification for prescribing or dispensing, dispensing only under certain circumstances, special monitoring, and the use of patient registries. The requirement for a REMS or use of a companion diagnostic with a biologic can materially affect the potential market and profitability of the biologic. Moreover, product approval may require, as a condition of approval, substantial post-approval testing and surveillance to monitor the biologic's safety or efficacy. Once granted, product approvals may be withdrawn if compliance with regulatory requirements and standards is not maintained or problems are identified following initial marketing.

Under current requirements, facilities manufacturing biological products for commercial distribution must be registered with the FDA. In addition to the preclinical studies and clinical trials, the BLA includes a description of the facilities, equipment and personnel involved in the manufacturing process. A biologics license, which is the product's approval, is granted on the basis of inspections of the applicant's facilities in which the primary focus is on compliance with cGMP and the ability to consistently manufacture the product in the facility in accordance with the BLA. If the FDA finds the results of the inspection unsatisfactory, it may decline to approve the BLA, resulting in a delay in production and commercialization of products.

Regulation of Combination Products in the United States

Certain products may be comprised of components that would normally be regulated under different types of regulatory authorities and frequently by different centers at the FDA. These products are known as combination products. Specifically, under regulations issued by the FDA, a combination product may be:

- A product comprised of two or more regulated components that are physically, chemically, or otherwise combined or mixed and produced as a single entity;
- Two or more separate products packaged together in a single package or as a unit and comprised of drug and device products, device and biological products, or biological and drug products;
- A drug, or device, or biological product packaged separately that according to its investigational plan or proposed labeling is intended for use only with an approved individually specified drug, or device, or biological product where both are required to achieve the intended use, indication, or effect and where upon approval of the proposed product the labeling of the approved product would need to be changed, e.g., to reflect a change in intended use, dosage form, strength, route of administration, or significant change in dose; or
- Any investigational drug, device, or biological product packaged separately that according to its proposed labeling is for use only with another individually specified investigational drug, device, or biological product where both are required to achieve the intended use, indication, or effect.

Under the FFDCA, the FDA is charged with assigning a center with primary jurisdiction, or a lead center, for review of a combination product. That determination is based on the "primary mode of action" of the combination product. Thus, if the primary mode of action of a device-biologic combination product is attributable to the biologic product, the FDA center responsible for premarket review of the biologic product would have primary jurisdiction for the combination product. The FDA has also established an Office of Combination Products to address issues surrounding combination products and provide more certainty to the regulatory review process. That office serves as a focal point for combination product issues for agency reviewers and industry. It is also responsible for developing guidance and regulations to clarify the regulation of combination products, and for assignment of the FDA center that has primary jurisdiction for review of combination products where the jurisdiction is unclear or in dispute.

Accelerated Approval for Regenerative Advanced Therapies

As part of the Cures Act, Congress amended the FFDCA to create an accelerated approval pathway for regenerative advanced therapies, which include cell therapies, therapeutic tissue engineering products, human cell and tissue products, and combination products using any such therapies or products. Regenerative advanced therapies do not include those human cells, tissues, and cellular and tissue-based products regulated solely under section 361 of the Public Health Service Act and 21 CFR Part 1271. The new program is intended to facilitate efficient development and expedite review of regenerative advanced therapies, which are intended to treat, modify, reverse, or cure a serious or life-threatening disease or condition. A sponsor may request that the FDA designate a drug as a regenerative advanced therapy concurrently with or at any time after submission of an IND. The FDA has 60 calendar days to determine whether the drug meets the criteria, including whether there is preliminary clinical evidence indicating that the drug has the potential to address unmet medical needs for a serious or life-threatening disease or condition. A new drug application or BLA for a regenerative advanced therapy may be eligible for priority review or accelerated approval through surrogate or intermediate endpoints reasonably likely to predict long-term clinical benefit, or reliance upon data obtained from a meaningful number of sites. Therapies with a Regenerative Medicine Advanced Therapy (RMAT) designation will be eligible for accelerated approval through, as appropriate:

(i) Surrogate or intermediate endpoints reasonably likely to predict long-term clinical benefit; or

(ii) Reliance upon data obtained from a meaningful number of sites, including through expansion to additional sites, as appropriate.

Another benefit of RMAT designation is that it creates the option to meet post-approval requirements beyond the standard, controlled clinical trial. Post-approval requirements can be met through:

- Clinical evidence, clinical studies, patient registries, or other sources of real-world evidence, such as electronic health records;
- The collection of larger confirmatory data sets; or

- Post-approval monitoring of all patients treated with such therapy prior to approval of the therapy.

Finally, the designation also includes early interactions with the FDA to discuss any potential surrogate or intermediate endpoint to be used to support accelerated approval.

Humanitarian Device Exemption

Unless an exemption applies, each medical device commercially distributed in the United States requires either a substantial equivalence determination under a premarket notification submission pursuant to Section 510(k) of the FFDCA, or an approval of a premarket approval application (PMA). The FDA provides an incentive for the development of certain devices intended to benefit patients by treating or diagnosing a disease or condition that affects or is manifested in not more than 8,000 individuals in the United States per year. These devices receive a HUD designation and may be eligible for marketing approval under an HDE application. An HDE application is a premarket approval application that seeks an exemption from the effectiveness requirement that would otherwise apply to the application. FDA approval of an HDE application authorizes the applicant to market the device.

To obtain approval for a HUD, an HDE application is submitted to the FDA. An HDE application is similar in both form and content to a PMA application in that the applicant must demonstrate a reasonable assurance of safety, but in an HDE application, the applicant seeks an exemption from the PMA requirement of demonstrating a reasonable assurance of effectiveness. An HDE application is not required to contain the results of scientifically valid clinical investigations demonstrating that the device is effective for its intended purpose. The application, however, must contain sufficient information for the FDA to determine that the device does not pose an unreasonable or significant risk of illness or injury, and that the probable benefit to health outweighs the risk of injury or illness from its use, taking into account the probable risks and benefits of currently available devices or alternative forms of treatment. Additionally, the applicant must demonstrate that no comparable devices are available to treat or diagnose the disease or condition, and that they could not otherwise bring the device to market.

Except in certain circumstances, HUDs approved under an HDE cannot be sold for an amount that exceeds the costs of research and development, fabrication, and distribution of the device (i.e., for profit). Under the current HDE provision, as amended by the Food and Drug Administration Safety and Innovation Act, or FDASIA, a device is eligible to be sold for profit after receiving HDE approval if the device is intended for the treatment or diagnosis of a disease or condition that occurs in pediatric patients or in a pediatric subpopulation, and such device is labeled for use in pediatric patients or in a pediatric subpopulation in which the disease or condition occurs; or is intended for the treatment or diagnosis of a disease or condition that does not occur in pediatric patients or that occurs in pediatric patients in such numbers that the development of the device for such patients is impossible, highly impracticable, or unsafe. If the FDA makes a determination that a HUD meets the eligibility criteria, the HUD is permitted to be sold for profit after receiving HDE approval as long as the number of devices distributed in any calendar year does not exceed the ADN for the device. The holder of the HDE must immediately notify the FDA if the number of devices distributed during a calendar year exceeds the ADN. The ADN is determined by the FDA when the agency approves the original HDE application; or when the agency approves an HDE supplement for an HDE approved before the enactment of FDASIA if the HDE holder seeks a determination for the HUD in an HDE supplement based upon the profit-making eligibility criteria, and the FDA determines that the HUD meets the eligibility criteria.

FDA Post-Approval Requirements

Maintaining substantial compliance with applicable federal, state, local, and foreign statutes and regulations requires the expenditure of substantial time and financial resources. Rigorous and extensive FDA regulation of biological products and devices continues after approval, particularly with respect to cGMP. We will rely, and expect to continue to rely, on third parties to manufacture or supply certain components, equipment, disposable devices, testing and other materials used in our manufacturing process for any products that we commercialize or may commercialize. Manufacturers of our products are required to comply with applicable requirements in the cGMP regulations, including quality control and quality assurance and maintenance of records and documentation. We cannot be certain that we or our present or future suppliers will be able to comply with the cGMP and other FDA regulatory requirements. Other post-approval requirements applicable to biological products include reporting of cGMP deviations that may affect the identity, potency, purity and overall safety of a distributed product, record-keeping requirements, monitoring and reporting of adverse effects, reporting updated safety and efficacy information, periodic reporting requirements and complying with electronic record and signature requirements. Similarly, there are a number of post-marketing requirements for devices, including medical device reporting regulations that require manufacturers to report to the FDA if a device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur; and corrections and removal reporting regulations that require manufacturers to report to the FDA field corrections and product recalls or removals if undertaken to

reduce a risk to health posed by the device or to remedy a violation of the FFDCA that may present a risk to health. Additionally, devices must comply with the cGMP requirements that are set forth in the FDA's Quality System Regulation (QSR), including complaint handling and corrective and preventative actions.

After a BLA is approved, the biological product also may be subject to official lot release. As part of the manufacturing process, the manufacturer is required to perform certain tests on each lot of the product before it is released for distribution. If the product is subject to official release by the FDA, the manufacturer submits samples of each lot of product to the FDA together with a release protocol showing a summary of the history of manufacture of the lot and the results of all of the manufacturer's tests performed on the lot. The FDA also may perform certain confirmatory tests on lots of some products, such as viral vaccines, before releasing the lots for distribution by the manufacturer. In addition, the FDA conducts laboratory research related to the regulatory standards on the safety, purity, potency, and effectiveness of biological products. After approval of biologics, manufacturers must address any safety issues that arise, are subject to recalls or a halt in manufacturing, and are subject to periodic inspection after approval.

Discovery of previously unknown problems or the failure to comply with the applicable regulatory requirements, by us or our suppliers, may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions and adverse publicity. FDA sanctions could include refusal to approve pending applications, license revocation, withdrawal of an approval, clinical hold, warning or untitled letters, product recalls, product seizures, total or partial suspension of production or distribution, injunctions, fines, refusals of government contracts, mandated corrective advertising or communications with doctors, debarment, restitution, disgorgement of profits, or civil or criminal penalties. Any agency or judicial enforcement action could have a material adverse effect on us.

Biological product and medical device manufacturers and other entities involved in the manufacture and distribution of approved biological products and devices are required to register their facilities with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP and other laws. In addition, changes to the manufacturing process or facility generally require prior FDA approval before being implemented and other types of changes to the approved product, such as adding new indications and additional labeling claims, are also subject to further FDA review and approval, with certain exceptions.

Pediatric Research Equity Act

Under the Pediatric Research Equity Act, or PREA, a BLA or BLA supplement claiming a new indication must contain data to assess the safety and effectiveness of the biological product for the claimed indications in all relevant pediatric subpopulations and to support dosing and administration for each pediatric subpopulation for which the product is safe and effective, for a new product, new indication or dosage form. The intent of PREA is to compel sponsors whose products have pediatric applicability to study those products in pediatric populations, rather than ignoring pediatric indications for adult indications that could be more economically desirable. The FDA may grant deferrals for submission of data or full or partial waivers. By its terms, PREA does not apply to any biological product for an indication for which orphan designation has been granted, unless the FDA issues regulations saying otherwise. Because the FDA has not issued any such regulations, submission of a pediatric assessment is not required for an application to market a product for an orphan-designated indication, and waivers are not needed at this time. However, if only one indication for a product has orphan designation, a pediatric assessment may still be required for any applications to market that same product for the non-orphan indication(s).

U.S. Patent Term Restoration and Marketing Exclusivity

Depending upon the timing, duration, and specifics of the FDA approval of the use of our current or future product candidates, some of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984, commonly referred to as the Hatch-Waxman Amendments. Patent term restoration can compensate for time lost during product development and the regulatory review process by returning up to five years of patent life for a patent that covers a new product or its use. However, patent term restoration cannot extend the remaining term of a patent beyond a total of 14 years from the product's approval date. The period of patent term restoration is generally one-half the time between the effective date of an IND (falling after issuance of the patent) and the submission date of a BLA, plus the time between the submission date of the BLA and the approval of that application, except that the review period is reduced by any time during which the applicant failed to exercise due diligence. Only one patent applicable to an approved biological product is eligible for the extension and the application for the extension must be submitted prior to the expiration of the patent. The application for patent term extension is subject to approval by the United States Patent and Trademark Office, or PTO, in consultation with the FDA.

A biological product can obtain pediatric market exclusivity in the United States. This six-month exclusivity, which runs from the end of other exclusivity protection or patent term, may be granted based on the voluntary completion of a pediatric study in accordance with an FDA-issued "Written Request" for such a study.

Biosimilars

The Patient Protection and Affordable Care Act, or the Affordable Care Act, includes the Biologics Price Competition and Innovation Act of 2009. That Act created an approval pathway authorizing the FDA to approve biosimilars and interchangeable biosimilars. Biosimilars are biological products which are "highly similar" to a previously approved biologic product or "reference product" and for which there are no clinically meaningful differences between the biosimilar product and the reference product in terms of the safety, purity, and potency as shown through analytical studies, animal studies and a clinical study or studies. For the FDA to approve a biosimilar product as interchangeable with a reference product, the agency must find that the biosimilar product can be expected to produce the same clinical results as the reference product and, for products administered multiple times, the biosimilar and the reference biologic may be switched after one has been previously administered without increasing safety risks or risks of diminished efficacy relative to exclusive use of the reference biologic. A reference biologic is granted 12 years of exclusivity from the time of first licensure of the reference product.

Advertising and Promotion

The FDA closely regulates the post-approval marketing and promotion of biologics and devices including regulating through standards and regulations for direct-to-consumer advertising and promotional activities involving the internet. The agency also prohibits the off-label promotion of biologics and devices, and provides guidance on industry-sponsored scientific and educational activities to ensure that these activities are not promotional. Any claims we make for our products in advertising or promotion must be appropriately balanced with important safety information and otherwise adequately substantiated. Failure to comply with these requirements can result in adverse publicity and significant penalties, including the issuance of untitled or warning letters directing a company to correct deviations from FDA standards, corrective advertising, a requirement that future advertising and promotional materials be pre-cleared by the FDA, injunctions, and federal and state civil and criminal investigations and prosecutions.

While doctors are free to prescribe any product approved by the FDA for use, a company can only make claims relating to safety and effectiveness of a biological product or device that are consistent with the FDA approval or clearance, and the company is allowed to actively market and promote a biological product or device only for the particular use and treatment approved or cleared by the FDA. For BLAs, changes to some of the conditions established in an approved application, including changes in indications, labeling, or manufacturing processes or facilities, require submission and FDA approval of a new BLA or BLA supplement before the change can be implemented. A BLA supplement for a new indication typically requires clinical data similar to that in the original application, and the FDA uses the same procedures and actions in reviewing BLA supplements as it does in reviewing BLAs. Similarly, changes to approved or cleared devices may require FDA's premarket review.

Orphan Drug

Under the Orphan Drug Act, the FDA may grant orphan designation to drugs or biologics intended to treat a rare disease or condition, generally a disease or condition that affects fewer than 200,000 individuals in the United States, or affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States for such disease or condition will be recovered from sales in the United States of such drug or biologic. Orphan drug designation must be requested to and granted by the FDA before submitting a BLA. Among the other benefits of orphan drug designation are opportunities for grant funding towards clinical trial costs, tax credits for certain research and a waiver of the BLA application user fee. After the FDA grants orphan drug designation, the generic identity of the biologic and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not necessarily convey any advantage in, or shorten the duration of, the regulatory review and approval process. The first BLA applicant to receive FDA approval for a particular product to treat a particular disease with FDA orphan drug designation is entitled to a seven-year exclusive marketing period in the United States for that product, for that indication. During the seven-year exclusivity period, the FDA may not approve any other applications to market the same drug for the same disease, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan product to meet the needs of patients with the disease or condition for which the biologic was designated. Orphan drug exclusivity, which would most likely run concurrently with the exclusivity, if any, received from the

time of first licensure of a reference product, does not prevent the FDA from approving a different biologic for the same disease or condition, or the same biologic for a different disease or condition.

Anti-Kickback and False Claims Laws

In the United States, the research, manufacturing, distribution, sale and promotion of biological products and devices are subject to regulation by various federal, state and local authorities in addition to the FDA, including the Centers for Medicare & Medicaid Services, other divisions of the U.S. Department of Health and Human Services (e.g., the Office of Inspector General), the U.S. Department of Justice, state Attorneys General, and other federal, state and local government agencies. For example, sales, marketing and scientific/educational grant programs must comply with the FFDCA, Anti-Kickback Statute, as amended, the False Claims Act, as amended, the privacy regulations promulgated under the Health Insurance Portability and Accountability Act, or HIPAA, and similar state laws. If products are made available to authorized users of the Federal Supply Schedule of the General Services Administration, additional laws and requirements apply. All of these activities are also potentially subject to federal and state consumer protection and unfair competition laws.

As noted above, in the United States, we are subject to complex laws and regulations pertaining to healthcare "fraud and abuse," including, but not limited to, the federal Anti-Kickback Statute, the federal False Claims Act, and other state and federal laws and regulations. The Anti-Kickback Statute makes it illegal for any person, including a biological product manufacturer (or a party acting on its behalf) to knowingly and willfully solicit, receive, offer, or pay any remuneration that is intended to induce the referral of business, including the purchase or order of an item for which payment may be made under a federal healthcare program, such as Medicare or Medicaid. Violations of this law are punishable by up to five years in prison, criminal fines, administrative civil money penalties, and exclusion from participation in federal healthcare programs. In addition, many states have adopted laws similar to the Anti-Kickback Statute. Some of these state prohibitions apply to the referral of patients for healthcare services reimbursed by any insurer, not just federal healthcare programs such as Medicare and Medicaid. Due to the breadth of these federal and state anti-kickback laws and the potential for additional legal or regulatory change in this area, it is possible that our sales and marketing practices and/or our relationships with physicians might be challenged under anti-kickback laws, which could harm us. Because we commercialize products that could be reimbursed under a federal healthcare program and other governmental healthcare programs, we have developed a comprehensive compliance program that establishes internal controls to facilitate adherence to the rules and program requirements to which we are subject.

The federal False Claims Act prohibits anyone from, among other things, knowingly presenting, or causing to be presented, for payment to federal programs (including Medicare and Medicaid) claims for items or services, including biological products, that are false or fraudulent. Although we would not submit claims directly to payers, manufacturers can be held liable under these laws if they are deemed to "cause" the submission of false or fraudulent claims by, for example, providing inaccurate billing or coding information to customers or promoting a product off-label. In addition, our activities relating to the reporting of wholesaler or estimated retail prices for our products, the reporting of prices used to calculate Medicaid rebate information and other information affecting federal, state, and third-party reimbursement for our products, and the sale and marketing of our products, are subject to scrutiny under this law. For example, pharmaceutical companies have been prosecuted under the federal False Claims Act in connection with their off-label promotion of drugs. Penalties for a False Claims Act violation include three times the actual damages sustained by the government, plus mandatory civil penalties of between $11,181 and $22,363 for each separate false claim, the potential for exclusion from participation in federal healthcare programs, and, although the federal False Claims Act is a civil statute, conduct that results in a False Claims Act violation may also implicate various federal criminal statutes. If the government were to allege that we were, or convict us of, violating these false claims laws, we could be subject to a substantial fine and may suffer a decline in our stock price. In addition, private individuals have the ability to bring actions under the federal False Claims Act and certain states have enacted laws modeled after the federal False Claims Act.

There are also an increasing number of state laws that require manufacturers to make reports to states on pricing and marketing information. Many of these laws contain ambiguities as to what is required to comply with the laws. In addition, a provision of the Patient Protection and Affordable Care Act, referred to as the Sunshine Act, requires biological product manufacturers to track and report to the federal government certain payments or other transfers of value made to physicians and teaching hospitals in the previous calendar year. These laws may affect our sales, marketing, and other promotional activities by imposing administrative and compliance burdens on us. In addition, given the lack of clarity with respect to these laws and their implementation, our reporting actions could be subject to the penalty provisions of the pertinent state and federal authorities.

International Regulation

In addition to regulations in the United States, a variety of foreign regulations govern clinical trials, commercial sales, and distribution of product candidates. The marketing authorization approval process and requirements vary from country to country, and the review timelines may be longer or shorter than that required for FDA approval.

European Union (EU) pharmaceutical legislation requires Marketing Authorization Holders (MAH) in the EU to comply with the Pediatric Investigational Plan (PIP) that is in place as a post-authorization commitment agreed with the Pediatric Committee (PDCO) within the European Medicines Agency (EMA) to undergo an initial license renewal procedure within five years after initial market authorization. In the case of MACI which has a suspended license due to a European manufacturing facility closure, this would require the registration, qualification and approval of an EU compliant cGMP manufacturing facility before the end of the applicable renewal period in June 2018. However, we did not take such actions prior to expiration, and therefore the EU marketing authorization for MACI expired in June 2018.

Pharmaceutical Coverage, Pricing, and Reimbursement

In the United States and other countries, sales of any products for which we receive regulatory approval for commercial sale will depend in part on the availability of reimbursement from third-party payers, including government health administrative authorities, managed care providers, private health insurers, and other organizations. Third-party payers are increasingly examining the medical necessity and cost effectiveness of medical products and services in addition to safety and efficacy and, accordingly, significant uncertainty exists as to the reimbursement status of newly approved therapeutics. Third-party reimbursement adequate to enable us to realize an appropriate return on our investment in research and product development may not be available for our products.

Competitive Environment for Cartilage Repair and Burn Treatment

The biotechnology and medical device industries are characterized by rapidly evolving technology and intense competition. Our competitors include major multinational medical device companies, pharmaceutical companies, biotechnology companies (those that process and distribute human tissue as well as human tissue-derived products or tissue banks), and stem cell companies operating in the fields of tissue engineering, regenerative medicine, orthopedics and neural medicine. Many of these companies are well-established and possess technical, research and development, financial, and sales and marketing resources significantly greater than ours. In addition, many of our smaller potential competitors have formed strategic collaborations, partnerships and other types of joint ventures with larger, well-established industry competitors that afford these companies potential research and development and commercialization advantages in the technology and therapeutic areas currently being pursued by us. Academic institutions, governmental agencies and other public and private research organizations are also conducting and financing research activities which may produce products directly competitive to those being commercialized by us. Moreover, many of these competitors may be able to obtain patent protection, obtain FDA and other regulatory approvals and begin commercial sales of their products before us.

For patients diagnosed with cartilage defects, there are several treatment options, including arthroscopic debridement/chondroplasty, marrow stimulation techniques such as microfracture, osteochondral autografts or allograft derived tissue products for smaller cartilage injuries, osteochondral allografts, and autologous chondrocyte implants (e.g., MACI) for larger injuries.

The main competing treatments for MACI in the U.S. are microfracture and osteochondral allograft. Microfracture, a minimally invasive procedure that can be performed during the initial arthroscopic procedure, involves creating small fractures in the underlying bone allowing bone marrow to enter the defect. This treatment eventually forms a weaker form of cartilage which can offer shorter term relief but is at high risk of breaking down in larger defects. This treatment is sometimes augmented with allograft derived products such as Cartiform® (manufactured and distributed by Osiris (recently acquired by Smith & Nephew) and marketed by Arthrex) and Prochondrix® (marketed by Stryker). Other competitive treatments in the U.S. include a juvenile donor-derived allograft product, DeNovo® NT, marketed by Zimmer Holdings, Inc. (Zimmer Biomet). The osteochondral allograft procedure involves the transplant of a bone and cartilage graft from a deceased donor. The donor tissue is processed by a number of tissue banks and distributed by several companies. There are multiple other cartilage repair technologies currently being studied in clinical and preclinical studies. Hyalofast® is a biodegradable hyaluronic acid-based scaffold used in conjunction with autologous concentrated bone marrow aspirate being developed by Anika Therapeutics, Inc. It is currently being studied in a Phase 3 trial that was initiated in 2015. Agili-C® is a non-cellular biphasic implant derived from aragonite coral which is implanted into the subchondral bone and is being developed by CartiHeal, Inc. It is currently being studied in a Phase 3 trial that initiated in 2018.

MACI is the only FDA-approved ACI product on the market in the United States. We are aware of one other ACI product in development in the United States for the treatment of articular cartilage defects of the knee. In 2014, Aesculap Biologics, LLC initiated a Phase 3 trial of NOVOCART® 3D, a biologic-device combination product comprised of autologous chondrocytes seeded on a collagen scaffold. The trial is still enrolling patients.

Patients suffering catastrophic burns over a significant portion of Total Body Surface Area (TBSA) have few options for permanent skin coverage. When undamaged skin is available, a procedure known as meshed split-thickness auto-grafting can be considered. However, this option becomes less viable as the percentage of TBSA burn increases. Epicel is a potentially lifesaving therapy and represents the only FDA-approved option for patients with TBSA burns greater than 30%. In September 2018, the FDA-approved Avita Medical's RECELL® System in for use in partial thickness burns and in full-thickness burns in conjunction with meshed split-thickness auto-graft. The RECELL system is a device which enables the on-site preparation of an autologous epithelial cell suspension. One RECELL kit can treat an approximately 10% TBSA wound. However, unlike Epicel, the safety and effectiveness of RECELL has not been established in combination with autografting in patients with wounds totaling greater than 50% TBSA or in pediatric patients younger than 18 years of age.

In the general area of cell-based therapies, we potentially compete with a variety of companies, most of whom are specialty medical technology/device or biotechnology companies. Some of these, such as Arthrex and Zimmer, are well-established and have substantial technical and financial resources compared to ours. However, as cell-based products are only just emerging as viable medical therapies, many of our potential competitors are smaller biotechnology and specialty medical products companies.

Employees and Human Capital Resources

As of December 31, 2020, we employed approximately 273 full-time employees. A significant number of our management and professional employees have had prior experience with pharmaceutical, biotechnology or medical product companies. None of our employees are covered by collective bargaining agreements, and management considers relations with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing, and integrating our existing and new employees, advisors and consultants. The principal purposes of our equity and cash incentive plans are to attract, retain and reward personnel through the granting of stock-based and cash-based compensation awards, in order to increase stockholder value and the success of our company by motivating such individuals to perform to the best of their abilities and achieve our objectives.

We appreciate one another's differences and strengths and are proud to be an Equal Opportunity Employer. We value diversity of backgrounds and perspectives and our policy is that we do not discriminate based on race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, genetic information, marital status, sex, gender, gender identity, gender expression, age, military and veteran status, sexual orientation or any other protected characteristic as established by federal, state or local laws.

Executive Officers

The following table lists our executive officers and key employees and their respective ages and positions as of January 31, 2021:

Name	Position	Age	Executive Officer Since
Dominick C. Colangelo	President and Chief Executive Officer	55	2013
Michael Halpin	Chief Operating Officer	59	2019
Jonathan Hopper	Chief Medical Officer	58	2018
Joseph A. Mara	Chief Financial Officer	45	2021
Sean C. Flynn	Vice President, General Counsel & Secretary	47	2019

Dominick C. Colangelo — Mr. Colangelo joined Vericel Corporation in 2013 with more than 20 years of executive management and corporate development experience in the biopharmaceutical industry, including nearly a decade with Eli Lilly and Company (Eli Lilly). During his career, he has held a variety of executive positions of increasing responsibility in product development, pharmaceutical operations, sales and marketing, and corporate development. He has extensive experience in the acquisition, development and commercialization of products across a variety of therapeutic areas. During his tenure at Eli Lilly, Mr. Colangelo held positions as Director of Strategy and Business Development for Eli Lilly's Diabetes Product Group and also served as a founding Managing Director of Lilly Ventures. Mr. Colangelo received his B.S.B.A. in Accounting, *Magna Cum Laude*, from the State University of New York at Buffalo and a J.D. degree, with Honors, from the Duke University School of Law.

Michael Halpin — Mr. Halpin joined Vericel in April of 2017 with over 28 years of regulatory, quality assurance, and clinical research experience with a variety of medical device, combination product, small molecule, biologic, and advanced therapy technologies. Prior to joining Vericel, Mr. Halpin was with Sanofi and Genzyme Corporation; most recently as vice president, North American region regulatory head with responsibility for Sanofi Genzyme's rare disease, immuno-inflammatory, multiple sclerosis and other business unit products. Mr. Halpin has also served as vice president, regulatory affairs for Genzyme's biosurgery division, with regulatory oversight of all biosurgery and cell and gene therapy products, including Carticel, Epicel, and MACI. Prior to Genzyme, Mr. Halpin held a number of regulatory, quality, and clinical affairs positions at several medical device companies, including Abbott/MediSense, C.R. Bard, and Abiomed, Inc. Mr. Halpin received his master's degree in biomedical engineering and bachelor's degree in biochemistry from the University of Virginia.

Jonathan Hopper – Mr. Hopper is a seasoned industry executive with previous experience as a surgeon and government regulator. He qualified in medicine in the UK in 1987 and trained as an Orthopedic and Trauma surgeon, gaining additional clinical experience in Accident and Emergency, Sports Medicine and Trauma Intensive Care. Mr. Hopper became a Fellow of the Royal College of Surgeons of Edinburgh in 1992. In 1997, he joined the UK's Senior Civil Service as a senior medical officer at the UK's Department of Health, regulating medical device manufacturers and advising senior government officials and Ministers of State. Mr. Hopper attained the degree MBA (Health Executive) from the University of Keele 2003. In 2006, Mr. Hopper joined the medical device industry and moved to the USA in 2009. He has held various Global Medical Affairs and Clinical Development Executive roles for ConvaTec, Stryker, Osiris Therapeutics and Ferring Pharmaceuticals. Mr. Hopper joined Vericel in August 2018 and leads the Clinical Development, Pharmacovigilance and Medical Affairs functions.

Joseph A. Mara. — Mr. Mara joined Vericel in 2021 with more than 20 years of financial, strategic and operational experience, including more than 14 years of experience in the biotech industry. Prior to joining Vericel, Mr. Mara held a number of leadership roles at Biogen, Inc., including Vice President, Finance and Head of Investor Relations, Vice President of Global FP&A and Strategic Corporate Finance and Vice President, U.S. Finance and Operations. During his time at Biogen, Mr. Mara had opportunities to work across the entire organization, in roles of increasing responsibility within Finance across R&D, Corporate Finance, Corporate Strategy and Commercial operations, supporting company strategy, business development and several commercial launches. Prior to joining Biogen, Mr. Mara held finance and strategy roles in the financial services and technology industries, including at Thomson Reuters Corporation and Fidelity Investments. Mr. Mara earned a B.A. degree in Economics and International Studies from Northwestern University and an M.B.A. from the Sloan School of Management at M.I.T.

Sean C. Flynn — Mr. Flynn joined Vericel in 2019, having served as corporate and litigation counsel for nearly 20 years in both the public and private sectors. Prior to joining Vericel, Mr. Flynn held the position of Vice President and General Counsel of Verastem, Inc. where he was responsible for all legal matters. Mr. Flynn also served as Associate General Counsel and Chief Compliance Officer for Abiomed, Inc. during a period of rapid revenue and market growth. In that capacity, Mr. Flynn handled a wide variety of business and legal matters for the organization, while maintaining responsibility for the compliance readiness of the company on a global scale. Prior to joining Abiomed, Mr. Flynn served for nearly seven years as a federal prosecutor with the Offices of the United States Attorney for the Eastern District of California and the Eastern District of New York. Mr. Flynn began his legal career as a litigator with Bingham McCutchen LLP, after clerking for the Honorable Ruggero J. Aldisert, Senior Circuit Judge, United States Court of Appeals for the Third Circuit and after receiving his Juris Doctor, *cum laude*, from Vermont Law School. Prior to beginning his legal career, Mr. Flynn served as an Air Defense Artillery Officer in the United States Army, having graduated from the United States Military Academy at West Point in 1995.

Available Information

Additional information about Vericel is contained at our website, www.vcel.com. Information on our website is not incorporated by reference into this report. We make available on our website free of charge our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K as soon as reasonably practicable after those reports are filed with the Securities and Exchange Commission (SEC). Our reports filed with the SEC are also made available on its website at www.sec.gov. The following Corporate Governance documents are also posted on the Investor Relations section of our website: Code of Business Conduct and Ethics, Code of Ethics for Senior Financial Officers, Insider Trading Policy, Special Trading Procedures for Insiders, Board Member Attendance at Annual Meetings Policy, Director Nominations Policy, Shareholder Communications with Directors Policy and the Charters for each of the Committees of the Board of Directors.

Item 1A. ***Risk Factors***

Our operations and financial results are subject to various risks and uncertainties, including those described below, that could adversely affect our business, financial condition, results of operations, cash flows, and trading price of our common stock. The risks and uncertainties described below are not the only ones we face. There may be additional risks and uncertainties that are not known to us or that we do not consider to be material at this time. If the events described in these risks occur, our business, financial condition, and results of operations would likely suffer.

Risks Related to the COVID-19 Pandemic

The current pandemic of COVID-19 and the future outbreak of other highly infectious or contagious diseases, could seriously harm our research, development and commercialization efforts, increase our costs and expenses and have a material adverse effect on our business, financial condition and results of operations.

Broad-based business or economic disruptions could adversely affect our ongoing or planned research, development and commercialization activities. For example, in December 2019, an outbreak of a novel strain of coronavirus originated in Wuhan, China, and has since spread globally. To date, the COVID-19 pandemic has caused significant disruptions to the U.S. and global economy and has contributed to significant volatility in financial markets. The global impact of the outbreak is continually evolving and, as the virus spreads and additional cases are identified, many countries, including the U.S., have reacted by instituting quarantines, restrictions on travel and mandatory closures of businesses. Many of restrictions and orders have been periodically updated as infection rates in the United States have risen and fallen and as world health leaders learn more about the virus, its transmission pathway and who is most at risk. Since mid-March 2020, multiple state governments – including those in Massachusetts and Michigan and others where third parties with whom we engage operate – have issued, extended and supplemented orders requiring certain businesses that do not conduct essential services to temporarily close their physical workplaces to employees and customers. Companies and organizations conducting biopharmaceutical research and development have been largely exempted from closure orders as the sector has been deemed essential to maintaining continuity of operations of the critical infrastructure as determined by the federal government. The pandemic remains highly fluid throughout the country and around the world and the number of COVID-19 infections has fluctuated significantly in various geographies during 2020 and early 2021 and will likely continue to do so. As such, many state and local governments have re-instituted restrictions on businesses, travel, and personal activities from time-to-time and it is expected that additional such measures may occur in the future as the pandemic evolves.

In March 2020, we put in place a comprehensive workplace protection plan, which institutes protective measures in response to the COVID-19 pandemic. These measures include mandatory employee training on social distancing and hygiene protocols, conducting daily health screenings of all employees, vendors and visitors entering our facilities, canceling all international business travel, limiting domestic business travel to essential purposes, requesting that employees limit non-essential personal travel, enhancing our facilities' janitorial and sanitary procedures, making certain physical modifications and enhancements to our facilities to enable effective social distancing among employees, providing certain personal protective equipment to employees working in our offices, encouraging employees to work from home to the extent their job function enables them to do so, limiting third-party access to our facilities, encouraging the use of virtual employee meetings, modifying the manner and schedule of on-site production activities, and providing guidance to our field-based commercial teams concerning their communications and contact with customers and healthcare professionals. We continue to review these measures regularly as the situation evolves, and as we continue to learn more, we may take additional actions that are consistent with guidance and orders issued by national, state and local governmental agencies. Both these existing measures and any future actions we take may result in continued disruption to our business.

The extent to which the COVID-19 pandemic, or the future outbreak of any other highly infectious or contagious disease, impacts our preclinical studies, clinical trial operations and current or future commercialization efforts will depend on future developments, which are highly uncertain and cannot be predicted with confidence, including the scope, severity and duration of such pandemic, the actions taken to contain the pandemic or mitigate its impact, and the direct and indirect economic effects of the pandemic and containment measures, among others. The rapid development and fluidity of this situation precludes any prediction as to the full adverse impact of the COVID-19 pandemic. Nevertheless, the COVID-19 pandemic has and will likely continue to adversely affect our business, financial condition and results of operations, and it may have the effect of heightening many of the risks described herein, including the below.

- The implantation of MACI® is an elective surgical procedure. On March 13, 2020 and March 14, 2020, the American College of Surgeons and United States Surgeon General, respectively, recommended that each hospital, health system, and surgeon minimize, postpone, or cancel electively scheduled surgeries, which resulted in a reduction in MACI sales

during the first and second quarters of 2020. These recommendations were followed by numerous state-level executive orders either banning or partially banning elective surgeries. By April 3, 2020, 31 U.S. states had issued executive mandates calling for the suspension of elective or non-essential surgeries.

- As a result of these restrictions, beginning in mid-March 2020, we started to experience a significant increase in cancellations of scheduled MACI procedures as well as a slowdown in new MACI orders. Those cancellations negatively impacted our results of operations for the first and second quarters of 2020. These restrictions began to ease in May and, by the end of September 2020, there were no state orders in place that directly impacted a surgeon's or patient's ability to move forward with a MACI surgery. However, the COVID-19 pandemic remains unpredictable and most areas of the United States, and the world, have experienced a resurgence of COVID-19 infections during the late fall of 2020 and into early 2021. Although hospitals are now better prepared for a subsequent surge in COVID-19 patients, regional, local and facility-based restrictions on the performance of elective surgeries have been reinstituted at various times in some geographies in recent months and others may follow in the future. We believe our MACI business will be negatively impacted if elective surgical procedures are again restricted. Further, continued, and prolonged material disruption to the operations of our employees, distributors, suppliers or customers will impact our sales and operating results and could lead to potential impairments to inventory and accounts receivable. While trauma injury admissions have been reported to have declined due to various COVID-19 related restrictions and although Epicel® has been less directly impacted by the pandemic given the critical nature of severe burn injuries, it is difficult to ascertain the continued impact of COVID on the treatment of severe burns.

- We are currently conducting the PEAK (A Study of MACI in Patients Aged 10 to 17 Years with Symptomatic Chondral or Osteochondral Defects of the Knee) Study at ten (10) sites throughout the United States. Three (3) such sites have currently paused enrollment of new PEAK patients as a result of the effects of the pandemic, and the Study has not experienced a slow-down in its traditional rate of patient enrollment during 2020. Furthermore, the PEAK Study or another of our clinical trials may in the future experience difficulties associated with patient visits and study monitoring, which may be paused or delayed due to changes in policies at various clinical sites, federal, state, local or foreign laws, rules and regulations, including closure of site access to outside medical monitors, quarantines or other travel restrictions, prioritization of healthcare resources toward pandemic efforts, including diminished attention of physicians serving as our clinical trial investigators and reduced availability of site staff supporting the conduct of our clinical trials, interruption or delays in the operations of the FDA, heightened exposure of patients, principal investigators and site staff to COVID-19 if an outbreak occurs in their geography, or other reasons related to the COVID-19 pandemic. Further, patients who are already recruited into our clinical trials may be unable or unwilling to attend follow-up visits within the timelines specified in our trial protocols, potentially impacting our ability to meet our clinical trial endpoints. An outbreak may also affect employees of third-party contract research organizations located in affected geographies that we rely upon to carry out our clinical trials.

- We continue to manufacture MACI and Epicel and we maintain a significant safety back-up of all key raw materials. We do not expect that current supply chain interruptions will impact our ongoing manufacturing operations. However, we currently rely on third parties to, among other things, manufacture and supply raw materials, which are used to produce our products, and supply other goods and services to run our business. If any such third parties in our supply chain are adversely impacted by current or future restrictions or executive orders resulting from the COVID-19 pandemic for an extended period of time, including staffing shortages, production slowdowns, disruptions in delivery systems, or federal orders requiring the diversion of key supplies for use in the production or manufacturing of vaccines designed to inoculate individuals against COVID-19, our supply chain may be disrupted, limiting our ability to manufacture our products and product candidates and conduct our research and development operations, or commercially launch any of our product candidates, if approved. With respect to customer delivery, MACI final product has an established shelf life of six (6) days and established shipping shelf life of three (3) days. Currently, MACI is picked-up by courier and shipped by commercial air or ground transportation to our customers' locations. Epicel final product has an established shelf life of 24 hours and is hand carried to customer hospital sites by courier. Transportation is primarily by commercial or charter airline. Although we have not experienced material shipping delays or increased costs to date, significant disruption of air travel could result in the inability to deliver MACI or Epicel final products to customer sites within appropriate timeframes, which would have a material adverse effect on our business and results of operations.

- We have largely restricted on-site staff in our facilities to only those personnel and contractors who must perform essential activities related to the manufacture, production and delivery of our products. We have encouraged the majority of our remaining employees to work remotely. Our continued reliance on personnel working from home may negatively impact productivity, or disrupt, delay, or otherwise adversely impact our business. Additionally, the continued spread or further resurgence of COVID-19 or similar infectious diseases in the U.S. may lead to further

government-imposed quarantines and restrictions, which may result in the closure of our administrative offices, with our employees working outside of our offices for an extended period of time. These actions may also result in the disruption of our manufacturing operations, which are currently accomplished within our administrative offices. Additionally, such quarantines and restrictions may adversely affect our ability to conduct certain product enhancement and business development activities.

- Our continued reliance on personnel working from home may also increase our cyber security risk, create data accessibility concerns, and make us more susceptible to communication disruptions, any of which could adversely impact our business operations or delay necessary interactions with local and federal regulators, institutional review boards and ethics committees, third-party contractors and suppliers, clinical trial sites and other important agencies and contractors. Our business operations may be further disrupted if any of our employees, officers or board of directors contract an illness related to COVID-19 and are unable to perform their duties. For example, COVID-19 illness could impact members of management or our board of directors resulting in absenteeism from management meetings or meetings of the directors or committees of directors, and making it more difficult for management to effectively oversee our daily operations, or to convene the quorums of the full board of directors or its committees needed to conduct meetings for the management of our affairs.

- Continued spread or resurgence of the COVID-19 virus, may cause our employees, and employees of third-party contractors and licensees, including MediWound, responsible for conducting research and development activities to be unable to access laboratories and places of business for an extended period of time as a result of the temporary closure of such workspaces and the possibility that governmental authorities further modify current restrictions. As a result, this could delay timely completion of ongoing clinical trials or preclinical activities, and our ability to select future development candidates.

- NexoBrid® is currently a pre-commercial product in North America. On September 16, 2020, we announced that the FDA has accepted for review a BLA seeking marketing approval for NexoBrid in the United States and has assigned a PDUFA target date for the product of June 29, 2021. However, health regulatory agencies globally, including the FDA, have experienced, and may continue to experience disruptions in their operations as a result of the continued spread of the COVID-19 pandemic. For instance, the COVID-19 pandemic may impact the FDA's response times to regulatory submissions and its ability to monitor our clinical trials. Additionally, in many instances across the industry, the FDA has postponed, or has been unable to conduct certain inspections of domestic and international manufacturing facilities in connection with its regulatory review of product applications as a result of travel and other restrictions caused by the pandemic. Should such restrictions prevent or delay the FDA in conducting necessary reviews or physical inspections of the manufacturing facilities involved in the production of NexoBrid, or should other events impact FDA's response times, the timeline for approval of NexoBrid could be materially delayed, which could materially affect the development, study and ultimate commercialization of the product. It is unknown how long these disruptions could continue, were they to occur.

- The trading prices for our common stock and that of other biopharmaceutical companies have been highly volatile as a result of the COVID-19 pandemic. As a result, we may face difficulties raising capital through sales of our common stock or such sales may be on unfavorable terms. In addition, a recession, depression or other sustained adverse market event resulting from the continued spread or resurgence of the COVID-19 pandemic could materially and adversely affect our business and the value of our common stock.

- Given the economic downturn and increased unemployment in the U.S. related to COVID-19, millions of individuals have lost and may lose their employer-based insurance coverage, which may adversely affect our ability to commercialize our products. In addition, market disruption and rising unemployment caused by the COVID-19 pandemic may lead to delays in obtaining insurance coverage and reimbursement of newly approved products as well as an increase in the numbers of uninsured patients and patients who may no longer be able to afford their co-insurance or co-pay obligations. These factors may lead to decreased utilization of our products, which could reduce revenue. The continued outbreak or worsening of COVID-19 may also negatively impact our commercialization strategy for our products and product candidates, if approved. Hospitals and other medical institutions have reduced and diverted staffing, diverted resources to patients suffering from COVID-19 and limited hospital access for non-patients, which has included our sales personnel. Hospitals may continue and increase these and similar measures in the future should the COVID-19 virus continue to spread or surge in certain areas. In addition, COVID-19 levels in the United States may cause customers or patients to postpone or cancel previously scheduled surgeries or to decline to schedule surgeries utilizing our products, which would negatively impact our operations and financial results. We have encouraged our sales personnel to conduct many of their interactions with physicians and patients through the use of

webinars, telemedicine, direct-to-consumer advertising and social media. These circumstances may adversely affect the ability of our sales professionals to effectively market our products to physicians in the future, which may have a negative impact on our potential sales and our market penetration.

If any of these risks related to the impact of the COVID-19 pandemic were to occur, our preclinical activities, clinical development progress, data and timelines, commercialization efforts including any potential revenue from sales, supply chain continuity, and general business operations, could be delayed and/or materially harmed and our business, prospects, financial condition, and results of operations would suffer as a result. The extent to which the current pandemic, or a future pandemic, impacts our business and operations will depend on future developments, such as the ultimate geographic spread of the disease, the duration of the outbreak, travel restrictions and governmental actions to contain the outbreak or treat its impact, which are highly uncertain and cannot be predicted with confidence.

Risks Related to Our Operations

We may experience significant quarterly and annual fluctuations in our results of operations due to a number of factors.

Our quarterly and annual results of operations may fluctuate significantly due to a variety of factors, many of which are outside of our control. This variability may lead to volatility in our stock price as investors and research analysts respond to quarterly fluctuations. In addition, comparing our results of operations on a period-to-period basis, particularly on a sequential quarterly basis, may not be meaningful. You should not rely on our past results as an indication of our future performance.

Factors that may affect our results of operations include:

- the timing of new orders and revenue recognition for new and prior year orders;
- seasonal buying patterns of our customers;
- volatility in the sales of our products;
- volume of revenues;
- competitive developments;
- changes in third-party coverage and reimbursement for our products;
- our ability to supply and meet customer demand for our products;
- our ability to increase sales to our existing customers, particularly larger customers;
- our ability to attract new customers;
- our ability to develop and achieve market adoption of our products;
- the impact of a recession or any other adverse global economic conditions on our business;
- the impact of the current COVID-19 pandemic, or the future outbreak of another highly infectious or contagious disease;
- erosion in margins or significant fluctuations in revenues caused by changing customer demand;
- the timing and cost of hiring personnel and of large expenses such as third-party professional services;
- stock-based compensation expenses, which vary along with changes to our stock price;
- fluctuations in foreign currency exchange rates; and
- future accounting pronouncements or changes in accounting rules or our accounting policies.

The foregoing factors are difficult to forecast, and these, as well as other factors, could materially adversely affect our quarterly and annual results of operations. There can be no assurance that the level of revenues and profits, if any, achieved by us in any particular fiscal period, will not be significantly lower than in other comparable fiscal periods. For example, the rate at which MACI biopsies convert to implants has generally been consistent since the product was first commercially launched in 2017. We cannot be certain that this rate will remain constant in the future, and if this rate were to decline, our revenue growth could be negatively impacted. In addition, our expense levels are based, in part, on our expectations as to future revenues. As a result, if future revenues are below expectations, net income or loss may be disproportionately affected by a reduction in revenues, as any corresponding reduction in expenses may not be proportionate to the reduction in revenues. If we fail to achieve our quarterly forecasts, if our forecasts fall below the expectations of investors or research analysts, or if our actual results fail to meet the expectations of investors or research analysts, our stock price may decline.

Seasonal sales patterns and other variations related to our revenue recognition may cause significant fluctuations in our results of operations and cash flows and may prevent us from achieving our quarterly or annual forecasts, which may cause our stock price to decline.

Historically, and specifically prior to the COVID-19 pandemic, we have had significant seasonal patterns in product orders with the highest volume occurring in the fourth quarter and the lowest volume occurring in the first quarter. As a result, a significantly higher percentage of our annual revenues have historically been recognized in the fourth quarter and the lowest percentage of annual revenues in the first quarter of a given calendar year. This is due to a number of factors, including insurance deductible limits and the time of year during which patients prefer to start rehabilitation. We expect to continue to experience this seasonality of our business in subsequent years after the COVID-19 pandemic and its related implications have halted.

Our quarterly growth in revenues also may not align with new orders that we receive in a given quarter, which could mask the impact of seasonal variations. This mismatch can be due to the timing of revenue recognition.

Seasonal and other variations related to our revenue recognition may cause significant fluctuations in our results of operations and cash flows, may make it challenging for an investor to predict our performance on a quarterly basis and may prevent us from achieving our quarterly or annual forecasts or meeting or exceeding the expectations of research analysts or investors, which in turn may cause our stock price to decline.

Our operating results will be harmed if we are unable to effectively manage and sustain our future growth or scale our operations.

There can be no assurance that we will be able to manage our future growth efficiently or profitably. Our business remains unproven at a large-scale operational level and actual revenue and operating margins, or revenue and margin growth, may be less than expected. If we are unable to scale our production capabilities efficiently or maintain pricing without significant discounting, we may fail to achieve expected operating margins, which would have a material and adverse effect on our operating results. Growth may also stress our ability to adequately manage our operations, quality of products, safety and regulatory compliance. If growth significantly decreases it will negatively impact our cash reserves, and we may be required to obtain additional financing, which may increase indebtedness or result in dilution to shareholders. Further, there can be no assurance that we would be able to obtain additional financing on acceptable terms, if at all.

If we do not manage inventory in an effective and efficient manner, it could adversely affect our results of operations.

Many factors affect the efficient use and planning of inventory of certain components and other materials used in our cell manufacturing process to manufacture our marketed products, such as effectiveness of predicting demand, effectiveness of preparing manufacturing to meet demand, efficiently meeting product demand requirements and expiration of materials in inventory. We may be unable to manage our inventory efficiently, keep inventory within expected budget goals, keep inventory on hand or manage it efficiently, control expired inventory or keep sufficient inventory of materials to meet product demand due to our dependence on third-party suppliers. Finally, we cannot provide assurances that we can keep inventory costs within our target levels. Failure to do so may harm our long-term growth prospects.

We have incurred losses and may not achieve consistent profitability for some time or at all.

For the year ended December 31, 2020 we reported net income, of $2.9 million, for the first time in Company history. Prior to 2020, however, we had incurred net losses each year since our inception in 1989, including a net loss of $9.7 million for the year ended December 31, 2019. As of December 31, 2020, we had accumulated a deficit of approximately $375.8 million and had $100.1 million of cash, cash equivalents and investments. Based on our current plan and existing cash, cash equivalents and investments on hand we are positioned to sustain current operations through at least 12 months following the issuance of the consolidated financial statements included in this Annual Report on Form 10-K.

Although we believe we can continue to achieve profitability without the need to raise additional capital, we may incur significant operating losses over the next several years despite sales increasing and margins improving, due to continuing expenses related to research and development, and the expense associated with continuing the commercialization of our approved products. We cannot predict with any certainty the existence or amount of future losses. Our ability to maintain profitability will depend on, among other things, increasing sales of our current products, improving gross margins, successfully

commercializing new products, completing the development of our future product candidates, timely initiation and completion of clinical trials, obtaining regulatory approvals, establishing manufacturing, sales and marketing arrangements with third parties, maintaining supplies of key manufacturing components and the possible acquisition and development of complementary products. Therefore, we may not be able to achieve or sustain profitability.

In the longer term, we may need to raise additional funds in order to continue to complete product development programs and the clinical trials needed to obtain approval for and commercialize our future product candidates, or to capitalize on potential strategic opportunities. We cannot be certain that actual results will not differ materially from our current projections and that current capital will be sufficient to achieve profitability or that funding will be available on favorable terms, if at all. Some of the factors that will impact our ability to raise additional capital and our overall success include:

- The ability to maintain our manufacturing facility's compliance with FDA requirements, including establishment and product fees;
- The requirements necessary to maintain in good standing marketing authorizations and licenses from regulatory bodies in the United States and other countries;
- The liquidity and market volatility of our equity securities;
- Regulatory and manufacturing requirements and uncertainties;
- Anticipating technological developments by competitors;
- The rate and degree of progress of our product development; and
- The rate and cadence of the regulatory approvals needed to proceed with clinical development programs.

Our products and product development programs are based on novel technologies and are inherently risky.

Our products are subject to the inherent risks of failure associated with the development of new products based on novel technologies. The innovative nature of our therapeutics creates significant challenges with regard to product development and optimization, manufacturing, regulatory environment and emerging regulations, third-party reimbursement and market acceptance. Therapeutic advancements are generally ahead of development and release of regulatory guidance and requirements. The lack of established precedents and evolving regulatory policy for novel products can pose significant challenges in product and clinical development, which can decrease the chances of regulatory success.

Our products represent new classes of therapy that the marketplace may not understand or accept. Furthermore, the success of our products is dependent on wider acceptance by the medical community.

While our products have had some commercial success to date, the broader market may not understand or accept our products. Our products represent new treatments or therapies and compete with a number of more conventional products and therapies manufactured and marketed by others. The nature of our products creates significant challenges with regard to product development and optimization, manufacturing, regulations, and third-party reimbursement. As a result, the commercialization of our current products and the development pathway for our potential new products may be subject to increased scrutiny, as compared to the pathway for more conventional products.

The degree of market acceptance of any of our marketed or potential new products will depend on a number of factors, including:

- The clinical safety and effectiveness of our products and their demonstrated advantage over alternative treatment methods;
- Our ability to demonstrate to healthcare providers that our products provide a therapeutic advancement over standard of care treatment or other competitive products and methods;
- Our ability to educate healthcare providers on the autologous use of human tissue, to avoid potential confusion with, and differentiate ourselves from, the ethical controversies associated with human fetal tissue and engineered human tissue;
- Our ability to educate healthcare providers, patients and payers on the safety and adverse reactions involving our products;
- Our ability to meet supply and demand and develop a group of medical professionals familiar with and committed to the use of our products; and

- The cost-effectiveness of our products and the reimbursement policies of government and third-party payers.

If the medical community or patients do not accept the safety and effectiveness of our products, it could negatively affect our ability to sell those products, which would have a material adverse impact on our business, financial condition and operations.

Failure to enter into written agreements with payers for reimbursement of our products and to obtain adequate reimbursement and reimbursement rates could have a material adverse effect on our financial condition and operating results.

We have a limited network of specialty pharmacy distributors for MACI, and we primarily rely on our specialty pharmacy distributors' contracts with third-party payers for reimbursement. Under our distribution agreements with Orsini and AllCare, we assume the credit and collection risk of third-party payers, as Orsini and AllCare dispense MACI and perform the collection activities. We also sell a portion of MACI implants directly to facilities based on prices stated in an approved contract or an applicable purchase order with the facility. Often the contracted rates are tied to the facility's third-party reimbursement from an underlying insurance provider. We sell Epicel directly to hospitals based on contracted rates stated in an approved contract or an applicable purchase order with the hospital.

Failing to maintain and obtain written agreements from payers for reimbursement of our products or to obtain adequate reimbursement rates could have a material adverse effect on our financial condition and operating results. In addition, healthcare providers are under pressure to increase profitability and reduce costs. In response, certain healthcare providers are limiting coverage or reducing reimbursement rates for the products we provide. We cannot predict the extent to which reimbursement for our products will be affected by initiatives to reduce costs for healthcare providers. Failure to collect from such payers or to obtain or maintain written agreements with such payers or obtaining lower than estimated reimbursement for our products would adversely affect our business, financial conditions and results of operations.

A cyber security incident could result in a loss of confidential data, give rise to remediation and other expenses, expose us to liability under HIPAA, consumer protection and privacy laws, or other common law theories, subject us to litigation and federal and state governmental inquiries, damage our reputation, and otherwise be disruptive to our business.

We collect and store sensitive information, including intellectual property and personally identifiable information, on our networks. The secure maintenance of this information is critical to our business operations. We have implemented multiple layers of security measures to protect this confidential data through technology, processes, and our people. We utilize current security technologies, and our defenses are monitored and routinely reviewed by internal and external parties. Despite these efforts, threats from malicious persons and groups, new vulnerabilities, and advanced new attacks against information systems create risk of cyber security incidents. There can be no assurance that we will not be subject to cyber security incidents that evade our security measures, result in the loss of personal health information or other data subject to privacy laws or disrupt our information systems and business. As a result, cyber security and the continued development and enhancement of our controls, processes and practices designed to protect our information systems from attack, damage or unauthorized access remain a priority for us. As cyber threats continue to evolve, we may be required to expend significant additional resources to continue to modify or enhance our protective measures or to investigate and remediate any cyber security vulnerabilities. The occurrence of any of these events could result in interruptions, delays, the loss, access, misappropriation, disclosure or corruption of data, liability under privacy, security and consumer protection laws or litigation under these or other laws, including common law theories, and subject us to federal and state governmental inquiries, any of which could have a material adverse effect on our financial position and results of operations and harm our business reputation.

In addition, regulators globally are also imposing greater monetary fines for privacy violations. For example, in 2016, the European Union adopted a new regulation governing data practices and privacy called the General Data Protection Regulation, or GDPR, which became effective on May 25, 2018. The GDPR applies to any company established in the European Union as well as to those outside the European Union if they collect and use personal data in connection with the offering of goods or services to individuals in the European Union or the monitoring of their behavior. The GDPR enhances data protection obligations for processors and controllers of personal data, including, for example, expanded disclosures about how personal information is to be used, limitations on retention of information, mandatory data breach notification requirements and onerous new obligations on services providers. Non-compliance with the GDPR may result in monetary penalties of up to €20 million or 4% of worldwide revenue, whichever is greater. The GDPR and other changes in laws or regulations associated with the enhanced protection of certain types of personal data, such as healthcare data or other sensitive information, could greatly

increase our cost of providing our products and services or even prevent us from offering certain services in jurisdictions that we may operate in.

We rely on complex information technology systems for various critical purposes, including timely delivery of products and maintaining patient confidentiality.

We have developed comprehensive, integrated information technology (IT) systems for the intake of physician orders for our products, to track product delivery, and to store patient-related data that we obtain for purposes of manufacturing MACI and Epicel. We rely on these systems to maintain the chain of identity for each autologous product, and to ensure timely delivery of product, prior to expiration. Each of our products has a limited usable life measured in days from the completion of the manufacturing process to patient implant or grafting. Accordingly, maintaining accurate scheduling logistics is critical. In addition, these IT systems store and protect the privacy of certain patient information, which is required for the manufacture of our individualized cell therapy products. We have also developed an integrated information technology system for benefit coordination for MACI patients who have opted-in to the My Cartilage Care program, which we use with our benefit coordination contractor and our contracted specialty pharmacies. This system contains patient-related information some of which is accessible by company personnel and healthcare professionals for surgery coordination activities. If any of our systems were to fail or be disrupted for an extended period of time, we could lose product sales and our revenue and reputation would suffer. Similarly, in the event our systems were to be breached by an unauthorized third-party, that party could potentially access the aforementioned patient information, which could cause us to suffer further reputational damage and loss of customer confidence. Any one of these events could cause our business to be materially harmed and our results of operations would be adversely impacted.

Our inability to complete our product development activities successfully would materially limit our ability to operate or finance our operations.

In order to obtain regulatory approvals necessary to commercialize future product candidates in the United States, we must conduct adequate and well-controlled clinical trials to demonstrate the safety and effectiveness of those products, in compliance with current regulatory requirements. We may not be able to successfully complete the development of future product candidates, or successfully market our technologies or future product candidates. We, and any of our potential collaborators, may encounter problems and delays relating to research and development, regulatory approval and intellectual property rights of relevant technologies and future product candidates. Our research and development programs may not be successful, or our cell therapy technologies and future product candidates may not facilitate the production of cells outside the human body with the expected results. Additionally, our technologies and future product candidates may not prove to be safe and effective in clinical trials, and we may not obtain the requisite regulatory approvals for our product candidates. If any of these events occur, our future prospects may be adversely impacted.

We must successfully complete our nonclinical and clinical development program to be able to demonstrate safety and efficacy to seek marketing approval of our current or future product candidates. Lack of efficacy and or safety events can lead to the discontinuation of clinical development, and this can occur at any stage of the clinical development program. We may experience numerous unforeseen events during development that can delay or prevent commercialization of our future development candidates.

The results of early stage clinical trials do not ensure success in later clinical trials, and interim results are not necessarily predictive of final results. Data obtained from clinical activities are not always conclusive and may be susceptible to varying interpretations, which could delay, limit or prevent regulatory approval.

Additionally, several of our ongoing clinical trials utilize an “open-label” trial design. An “open-label” clinical trial is one where both the patient and investigator know whether the patient is receiving the investigational product candidate or either an existing approved drug or placebo. Most typically, open-label clinical trials test only the investigational product candidate and sometimes may do so at different dose levels. Open-label clinical trials are subject to various limitations that may exaggerate any therapeutic effect as patients in open-label clinical trials are aware when they are receiving treatment. Open-label clinical trials may be subject to a “patient bias” where patients perceive their symptoms to have improved merely due to their awareness of receiving an experimental treatment. In addition, open-label clinical trials may be subject to an “investigator bias” where those assessing and reviewing the physiological outcomes of the clinical trials are aware of which patients have received treatment and may interpret the information of the treated group more favorably given this knowledge. The results from an open-label trial may not be predictive of future clinical trial results with any of our product candidates for which we include an open-label clinical trial when studied in a controlled environment with a placebo or active control.

Our planned clinical trials may not begin or be completed on schedule, if at all. Typically, if a biological product is intended to treat a chronic disease, safety and efficacy data must be gathered over an extended period of time, which can range from six months to three years or more.

With respect to any clinical trials affecting our approved products or future development candidates, failures or delays can occur at any stage of the trials, and may be directly or indirectly caused by a variety of factors, including but not limited to:

- Delays in securing clinical investigators or trial sites for our clinical trials and their subsequent performance in conducting accurate and reliable trials on a timely basis;
- Delays in obtaining IRB and other regulatory approvals to commence a clinical trial;
- Slower than anticipated rates of patient recruitment and enrollment in our clinical trials, or failing to reach the targeted number of patients due to competition for patients from other trials;
- Limited or no availability of coverage, reimbursement and adequate payment from health maintenance organizations and other third-party payers for the use of biological products supplied for use in our clinical trials;
- Negative or inconclusive results from clinical trials;
- Unforeseen adverse effects interrupting, delaying, or halting clinical trials of any future therapeutic product candidates, and possibly resulting in the FDA or other regulatory authorities denying approval of any future therapeutic product candidates;
- Unforeseen safety issues;
- Approval and introduction of new therapies or changes in standards of practice or regulatory requirements or guidance that render our clinical trial endpoints or the targeting of our proposed indications obsolete;
- Inability to monitor patients adequately during or after treatment or problems with investigator or patient compliance with the trial protocols;
- Inability to replicate in large controlled trials safety and efficacy data obtained from a limited number of patients in uncontrolled trials;
- Inability or unwillingness of medical investigators to follow our clinical protocols; and
- Unavailability of clinical trial supplies.

The FDA, the IRBs, and the sponsor monitor the progress of clinical trials and they may suspend or terminate a clinical trial at any time because of concerns related to patient safety or for other considerations. The FDA may impose a clinical hold on our trials because of safety concerns that have arisen for products or product candidates that are similar to our product candidates. Even when successful clinical results are reported for a product from a completed clinical trial, the durability of response may not be sustained over time, or may not be sufficient to support regulatory approval.

Our current product development activities include but are not limited to projects directed at expanding clinical indications, and decreasing the cost of manufacturing our products. These production process changes may alter the functionality of our cells and require various additional levels of experimental and clinical testing and evaluation. Any such testing could lengthen the time before these product enhancements would be commercially available.

We rely on third parties to conduct some of our clinical trials, and their failure to perform their obligations in a timely or competent manner may delay development and/or impact commercialization, if approved, of our current and future product candidates.

We use clinical research organizations (CROs) to assist in the conduct of our clinical trials. We may face delays outside of our control if these parties do not perform their obligations in a timely or competent fashion, or if we are forced to change service providers. Any third-party that we hire to conduct clinical trials may also provide services to our competitors, which could compromise the performance of their obligations to us. If we experience significant delays in the progress of our clinical trials, the commercial prospects for our current and future product candidates could be harmed and our ability to generate product revenue would be delayed or prevented. In addition, we and any provider that we retain will be subject to GCP requirements. If GCP and other regulatory requirements are not adhered to by us or our third-party providers or clinical investigators, the conduct of the trial may be compromised and the development and commercialization of our current and future product candidates could be delayed or approval may never be obtained.

Any failure by a CRO, a clinical trial site, or clinical investigator, or us to successfully accomplish clinical trial monitoring, data collection, safety monitoring and reporting, and data management and other services in a timely manner and in compliance with regulatory requirements could have a material adverse effect on our ability to utilize the trial to obtain regulatory approval or complete clinical development of our product candidates to support regulatory approval. Problems with the timeliness or quality of the work of a CRO or a clinical trial site or clinical investigator may lead us to seek to terminate the relationship and use an alternate provider. However, making such changes may be costly and may delay our trials, could affect regulatory approval and contractual restrictions may make such a change difficult or impossible. Additionally, it may be difficult to find a replacement organization that can conduct our trials in an acceptable manner and at an acceptable cost.

We face intense competition in the markets targeted by our products. Many of our competitors have substantially greater resources than we do, and we expect that all of our products will face intense competition from existing or future products.

All of our products face intense competition from existing and future products marketed by large companies. These competitors may successfully market products that compete with our products, identify and bring to market new product candidates earlier than we do, or develop products that are more effective or less costly than our products. These competitive factors could require us to conduct substantial new research and development activities to establish new product targets, which would be costly and time consuming. These activities can adversely impact our ability to effectively commercialize products and achieve revenue and profits.

If we do not keep pace with our competitors and with technological and market changes, our products will become less attractive or obsolete and our business may suffer.

The markets for our products are highly competitive, subject to rapid technological changes, and vary for different product candidates and processes that directly compete with our products. Our competitors in the medical and biotechnology industries may have superior products, research and development, manufacturing, and marketing capabilities, financial resources or marketing positions. Furthermore, our competitors may have developed, or could in the future develop, new technologies that compete with our products or even render our products obsolete.

To the extent that others develop new technologies that address the targeted application for our products, our business will suffer. Finally, if we are unable to continue to develop and market new products and technologies in a timely manner, the demand for our products may decrease or our products could become obsolete, and our revenue may decline or our growth prospects may be adversely affected.

Ethical, legal, social and other concerns surrounding the use of human tissue in synthetic biologically engineered products may negatively affect public perception of us or our products, or may result in increased scrutiny of our products and any future product candidates from a regulatory perspective, thereby reducing demand for our products, restricting our ability to market our products, or adversely affecting the market price for our common stock.

The commercial success of our products depends in part on general public acceptance of the use of human tissue for the treatment of human diseases and other conditions. While not as controversial as the use of embryonic stem cells and fetal tissue, the use of adult tissue has been the subject of substantial debate regarding related ethical, legal and social issues. We do not use embryonic stem cells or fetal tissue, but the public may not be able to, or may fail to, differentiate our autologous use of adult tissue from the use by others of embryonic stem cells or fetal tissue. This could result in a negative perception of our company or our products.

Future adverse events in the field of cellular based therapy or changes in public policy could also result in greater governmental regulation of our products and potential regulatory uncertainty or delay relating to any required testing or approval.

Restrictions on the use of animal-derived materials could harm our product development and commercialization efforts.

Some of the manufacturing materials and/or components that we use in, and which are critical to, implementation of our technology involve the use of animal-derived products, including fetal bovine serum. Supplier changes or regulatory actions may limit or restrict the availability of such materials for clinical and commercial use for a variety of reasons including contamination or perceived risk of contamination with an adventitious agent, such as bovine spongiform encephalopathy, in one

of our suppliers' herds. This may lead to a restricted supply of the serum currently required for our product manufacturing processes. Any restrictions on these materials would impose a potential competitive disadvantage for our products or prevent our ability to manufacture our cell products. The FDA and other regulatory agencies have issued regulations for controls over bovine material in animal feed. These regulations do not appear to affect our ability to purchase the manufacturing materials we currently use. However, regulatory agencies may introduce new regulations that could affect our operations. Our inability to develop or obtain alternative compounds would harm our product development and commercialization efforts. There are certain limitations in the supply of certain animal-derived materials, which may lead to delays in our ability to complete clinical trials or eventually to meet the anticipated market demand for our cell products.

If our licensing arrangement with MediWound is unsuccessful, our development of NexoBrid and its associated revenues may be limited.

We have entered into a licensing arrangement with MediWound Ltd. for the development of NexoBrid in North America. However, there can be no assurance that this agreement and our and MediWound's efforts pursuant to it will result in FDA approval of NexoBrid, or that we will be able to market NexoBrid at a profit. Under the terms of the License Agreement, MediWound will continue to conduct all development activities under the supervision of a Central Steering Committee comprised of members of each party until the BLA is approved and subsequently transferred to Vericel. Collaboration and licensing arrangements pose many risks, including, but not limited to, the following:

- collaborations and licensing arrangements may be terminated;
- collaborators and licensors may delay clinical trials and prolong clinical development, or under-fund or stop a clinical trial;
- expected revenue might not be generated because product candidates may not be approved;
- collaborators and licensors could independently develop, or develop with third parties, products that could compete with our future products despite non-competition provisions;
- the terms of our contracts with current or future collaborators and license parties may not be favorable to us in the future;
- disputes may arise delaying or terminating the research, development, or commercialization of our product candidates, or result in significant and costly litigation or arbitration; and
- one or more third-party developers could obtain approval for a similar product prior to the product candidate resulting in unforeseen price competition in connection with the product candidate.

Product development is a lengthy and expensive process, with an uncertain outcome.

We intend to commercialize NexoBrid in the U.S. and potentially other North American countries. However, before we can commercialize NexoBrid, we must first obtain regulatory approval for the sale of NexoBrid in any jurisdiction, which includes the submission of an application utilizing completed and ongoing clinical studies to demonstrate that the product is safe and effective. We depend on MediWound for its efforts in completing clinical trials and other clinical activities pursuant to the development plan, obtaining regulatory approval and manufacturing and supplying NexoBrid.

Certain events could delay or prevent our ability to successfully gain regulatory approval, including:

- patients may not participate in necessary follow-up visits to obtain required data, which would result in significant delays in the clinical testing process;
- an audit of MediWound's supply chain or manufacturing facilities and/or processes could reveal noncompliance or a regulatory agency requires further testing or inspections of such processes;
- third-party contractors, such as a research institute, may fail to comply with regulatory requirements or meet their contractual obligations to MediWound;
- undetected or concealed fraudulent activity by a clinical researcher, if discovered, could preclude the submission of clinical data prepared by that researcher, lead to the suspension or substantive scientific review of one or more of our marketing applications by regulatory agencies, and result in the recall of any approved product distributed pursuant to data determined to be fraudulent; and

- an audit of preclinical or clinical studies by regulatory authorities may reveal noncompliance with applicable protocols or regulations, which could lead to disqualification of the results and the need to perform additional studies.

NexoBrid may not be approved for treatment of severe burns in the United States and other North American markets, or its approval may be materially delayed.

Our continued growth partially depends on our and MediWound's ability to develop and obtain regulatory approval from the FDA for NexoBrid for treatment of severe burns in the United States. On September 16, 2020, we announced that the FDA has accepted for review a BLA seeking marketing approval for NexoBrid in the United States, and has assigned a PDUFA target date for the product of June 29, 2021. The BLA submission is based in large part on data derived from a U.S. Phase 3 pivotal study. MediWound is conducting twelve and twenty-four month safety follow-ups for cosmesis, function, quality of life and other safety measurements. Data from MediWound's twelve-month follow-up has been compiled and is being evaluated by the FDA, while the twenty-four month follow-up is ongoing and will be submitted as a safety update as part of post-approval commitment, if the BLA is approved. While this and previous studies have met their primary endpoints, we cannot predict the outcome of the planned safety follow-ups, whether the FDA will approve the BLA based on the available preclinical and clinical data and submitted manufacturing processes and cGMP data, whether the FDA will be able to conduct necessary inspections of the manufacturing facilities involved in the production of NexoBrid, whether MediWound's responses to certain additional information requests from the agency will be considered sufficient by the agency, how long the FDA may take to review and approve NexoBrid, or whether any such approval in the United States will ultimately be granted. Similarly, we cannot predict how long regulatory authorities in Mexico or Canada, if sought, will take to provide NexoBrid with marketing authorization in their jurisdictions or whether such authorizations will be granted at all. A significant delay or a failure to receive regulatory approval for NexoBrid in the United States may have a material adverse impact on our business prospects.

There is no guarantee that NexoBrid will be accepted in the market even if regulatory approval is received.

The success of NexoBrid, if and when approved, depends upon the acceptance of NexoBrid by patients, the medical community and third-party payers, effectively competing with other products, a continued acceptable safety profile following approval and qualifying for, maintaining, enforcing and defending related intellectual property rights and claims. Even if we and MediWound successfully obtain regulatory approvals to market NexoBrid, our revenues will be dependent, in part, upon the size of the markets for which we gain regulatory approval. If the markets that we are targeting are not as large as we estimate and/or if the acceptance and use of NexoBrid within those markets is not as significant as we estimate, we may not generate significant revenues from sales of such products, if approved.

Our licensor, MediWound, is dependent on a contract with the U.S. Biomedical Advanced Research and Development Authority to fund the Phase 3 clinical trial and other development activities of NexoBrid in the United States and these contracts may be terminated by BARDA at any time.

MediWound has a contract with BARDA valued at up to $132 million for the advancement of the development and manufacturing, as well as the procurement, of NexoBrid in the United States. Under the contract, BARDA has agreed to fund up to $56 million of the development costs of NexoBrid required to obtain marketing approval in the United States, including its ongoing pediatric Phase 3 study and its expansion to include U.S. pediatric burn care sites, and has an option to further fund $10 million in development activities for other potential NexoBrid indications. BARDA confirmed its previous commitment, began procuring NexoBrid in August and December of 2020 and confirmed additional deliveries will occur over the subsequent five quarters for emergency stockpile, as part of the HHS mission to build national preparedness for public health medical emergencies. The initial BARDA procurement is valued at $16.5 million. In addition, BARDA holds an option to procure additional quantities of NexoBrid through funding of up to $50 million. BARDA recently awarded MediWound a new contract to develop NexoBrid for the treatment of Sulfur Mustard injuries as part of BARDA's preparedness for mass casualty events. The contract provides approximately $12 million of funding to support research and development activities up to pivotal studies in animals under the U.S. FDA Animal Efficacy Rule and contains options for additional funding of up to $31 million for additional development activities, animal pivotal studies, and the BLA submission for licensure of NexoBrid for the treatment of Sulfur Mustard injuries. MediWound also was recently awarded funding for the NexoBrid expanded access treatment (NEXT) protocol being conducted under the FDA's expanded access program. However, the contracts provide that BARDA may terminate the contract at any time, at its convenience, without any further funding obligations. There can be no assurances that BARDA will not terminate the contract. Changes in government budgets and agendas may result in a decreased and de-prioritized emphasis on supporting the development of products for the treatment of severe burns such as NexoBrid. Any reduction or delay in BARDA funding may result in a decrease in planned development activities, including the development of

NexoBrid for the treatment of Sulfur Mustard injuries and the NEXT study. In addition, the loss of funding may adversely affect MediWound's ability to complete the required activities to comply with its obligations under the License Agreement. This could lead to a modification of the financial provisions of our agreement or a significant delay in the development of NexoBrid. Further, we cannot provide any assurances as to when or whether BARDA's commitment for procurement of NexoBrid will occur or when or whether BARDA's option to fund additional development activities for NexoBrid will be exercised.

Risks Related to the Manufacturing and Production of Our Products

We have limited manufacturing capacity and our commercial manufacturing operations in the U.S. depend on one facility. If the facility is destroyed or we experience any manufacturing difficulties, disruptions, or delays, this could limit supply of our products or adversely affect our ability to conduct clinical trials and our business would be adversely impacted.

We presently conduct all of our commercial manufacturing operations in the U.S., at one facility located in Cambridge, Massachusetts. As a result, all of the commercial manufacturing for the U.S. market of our marketed products, MACI and Epicel, takes place at a single U.S. facility. If regulatory, manufacturing or other problems require us to discontinue production at the Cambridge facility, we will not be able to supply our products to our patients, which would adversely impact our business. If this facility, or the equipment in it, is significantly damaged or destroyed by fire, flood, power loss or similar event, we will not be able to quickly or inexpensively replace our manufacturing capacity, and we may not be able to replace our facility at all. In the event of a temporary or protracted loss of the facility or critical equipment, we might not be able to transfer manufacturing to a third-party. Even if we could transfer manufacturing from one facility to a third-party, the shift would likely be expensive and time-consuming, particularly since an alternative facility would need to comply with applicable regulatory and quality standard requirements whereby validation and FDA approval would be required before any products manufactured at that facility could be made commercially available.

While we do maintain insurance coverage against damage to our property and equipment, if we have underestimated our insurance needs, we will not have sufficient insurance to cover losses above and beyond the limits on our policies. Additionally, any supply interruption could harm our reputation and cause our product sales and profitability to suffer even after such supply interruption is corrected.

Failure of third parties, including for example Matricel GmbH, to manufacture or supply certain components, equipment, disposable devices and other materials used in our MACI or Epicel cell manufacturing processes would impair our cell product development and commercialization.

We rely on third parties, including Matricel GmbH (Matricel) to manufacture and/or supply certain of our devices/manufacturing equipment and to manufacture and/or supply certain components, equipment, disposable devices and other materials used in our cell manufacturing process to manufacture our marketed cell therapy products and to develop our product candidates. In many instances these third parties serve as our sole suppliers. For example, Matricel is the sole supplier of the membrane for MACI. It would be difficult to obtain alternate sources of supply on a short-term basis due to the need for FDA approval of a new supplier. If any of our manufacturers or suppliers fails to perform its respective obligations, or if our supply of certain components, equipment, disposable devices and other materials is limited or interrupted, it could impair our ability to manufacture our products, which would delay our ability to market our commercial products or future product candidates or conduct clinical trials on a timely and cost-competitive basis, if at all.

Many of our suppliers are sole or single source suppliers. We do not have long-term supply agreements with many of our third-party sole or single source suppliers of certain components and other materials used in our cell manufacturing process to manufacture our marketed cell therapy products. We purchase our required supply on a purchase order basis, and at any time the third-party suppliers could stop supplying our orders. FDA approval of a new supplier may be required if these materials become unavailable from our current suppliers. Although there may be other suppliers that have equivalent materials that would be available to us, FDA approval of any alternate suppliers, if required, could take several months or a year or more to obtain, if we could obtain such approval at all. Should we need to find alternate manufacturers or suppliers, we will also need to verify, such as through a manufacturing comparability study, that any new manufacturing process will produce our product candidate according to the specifications previously submitted to the FDA or another regulatory authority. Any delay, interruption or cessation of production by our third-party suppliers of important materials, any delay in qualifying new materials, if necessary, or any delay associated with the transition to and verification of any new manufacturers or suppliers would prevent or delay our ability to manufacture products. In addition, a supplier's variation in a raw material or testing, either unknown to us or incompatible with our manufacturing process, or any other problem with our materials, testing or components, would prevent or

delay our ability to manufacture products. These delays may limit our ability to meet demand for our products, which would have a material adverse impact on our business, results of operations and financial condition.

We may be unable to establish any agreements with third-party suppliers or to do so on acceptable terms. Even if we are able to establish agreements with third-party suppliers, reliance on third-party suppliers entails additional risks, including the possible breach of the supply agreement by the third-party, and the possible termination or nonrenewal of the agreement by the third-party at a time that is costly or inconvenient for us.

In addition, we may not be able to continue our present arrangements with our suppliers, supplement existing relationships, establish and maintain new relationships or be able to identify and obtain the ancillary materials that are necessary to develop our product candidates in the future. Our dependence upon third parties for the supply and manufacture of these items could adversely affect our ability to develop and deliver commercial and commercially feasible products on a timely and competitive basis.

Failure by our third-party manufacturers, including Matricel, to comply with the regulatory requirements set forth by the FDA with respect to our products could limit our ability to manufacture commercial products.

Third-party manufacturers, such as Matricel, are subject to inspection by the FDA for current Good Manufacturing Practice, or cGMP, compliance, as well as for their ability to manufacture the components, products or product candidates in compliance with the established process and procedure for the product or product candidate during an inspection. We may compete with other companies for access to these manufacturers' facilities and may be subject to delays in manufacture if the manufacturers give other clients higher priority than they give to us. If we are unable to secure and maintain third-party manufacturing capacity, the development and sales of our products and product candidates, if approved, and our financial performance may be materially affected.

Manufacturers of FDA-regulated products are obligated to operate in accordance with FDA-mandated requirements. A failure of any of our third-party manufacturers to establish and follow cGMP requirements and to document their adherence to such practices may lead to significant delays in the availability of material for clinical trials, may delay or prevent filing or approval of marketing applications for our future product candidates, and may cause delays or interruptions in the availability of our products for commercial distribution. This could result in higher costs to us or deprive us of potential product revenues.

Complying with cGMP, ICH and other non-U.S. regulatory requirements will require that we expend time, money, and effort in production, recordkeeping, and quality control to assure that the product or product candidate meets applicable specifications and other requirements. We, or our contracted manufacturing facility, must also pass a pre-approval inspection by the FDA for future product candidates, and are subject to routine FDA cGMP inspections. Should the FDA determine that an inspection is necessary for approval and an inspection cannot be completed during the review cycle due to COVID-19 pandemic restrictions on travel, the FDA has stated that it generally intends to issue a complete response letter. Further, if there is inadequate information to make a determination on the acceptability of a facility, the FDA may defer action on the application until an inspection can be completed. In 2020, several companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. Regulatory authorities outside the U.S. may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic and may experience delays in their regulatory activities. Failure to address any FDA inspection observations in a timely manner, pass pre-approval inspections or comply with cGMP requirements can result in delays to approvals for future product candidates and/or regulatory action that can limit the ability to manufacture commercial products. As a result, our business, financial condition, and results of operations may be materially harmed.

The manufacture of cell therapy products is characterized by inherent risks and challenges and has proven to be a costly endeavor relative to manufacturing other therapeutic products.

The manufacture of cell therapy products, such as our products and product candidates, is highly complex and is characterized by inherent risks and challenges such as biological raw material inconsistencies, logistical challenges, significant quality control and assurance requirements, manufacturing complexity, and significant manual processing. Unlike products that rely on chemicals for efficacy, such as most pharmaceuticals, cell therapy products are difficult to characterize due to the inherent variability of biological input materials. When manufacturing autologous cell therapies, the number and composition of the cell population varies from patient-to-patient, in part due to the age of the patient, since the therapy is dependent on patient-specific physiology. Such variability in the number and composition of these cells could adversely affect our ability to

manufacture autologous cell therapies in a cost-effective manner and meet acceptable product release specifications for use in a clinical trial or, if approved, for commercial sale.

Difficulty in characterizing biological materials or their interactions creates greater risk in the manufacturing process. We attempt to mitigate risks associated with the manufacture of biologics by continuing to improve the characterization of all of our input materials, utilizing multiple vendors for supply of qualified biological materials when possible, and manufacturing some of these materials ourselves. However, there can be no assurance that we will be able to maintain adequate sources of biological materials or that the biological materials that we maintain in inventory will yield finished products that satisfy applicable product release criteria. Our inability to obtain necessary biological materials or to successfully manufacture cell therapy products that incorporate such materials could have a material adverse effect on our results of operations.

There can be no assurance that we or any third-party contractors with whom we enter into strategic relationships will be successful in streamlining manufacturing operations and implementing efficient, low-cost manufacturing capabilities and processes that will enable us to meet and/or maintain the quality, price and production standards or production volumes necessary to achieve our growth and profitability objectives as projected, or at all. Additionally, two vaccines for COVID-19 were granted Emergency Use Authorization by the FDA in late 2020, and more are likely to be authorized in the coming months. The resultant demand for vaccines and the potential for manufacturing facilities and materials to be commandeered under the Defense Production Act of 1950, or equivalent foreign legislation, may make it more difficult to obtain materials or manufacturing supplies for the products needed for our preclinical studies or clinical trials or for our commercial product, which could lead to delays in studies, trials, or our commercial supply.

If any of our manufacturers or suppliers fails to perform its respective obligations, or if our supply of certain components, equipment, disposable devices and other materials is limited or interrupted, ultimately we may be forced to manufacture the materials ourselves, for which we may not have the capabilities or resources. In some cases, the technical skills required to manufacture our products or product candidates may be unique or proprietary to the original manufacturer or supplier, and we may have difficulty, or there may be contractual restrictions prohibiting us from, transferring such skills to a back-up or alternate supplier, or we may be unable to transfer such skills at all.

Risks Related to Our Regulation by the FDA and other Government Entities

Failure to maintain required regulatory approvals would severely limit our ability to sell our products.

We must maintain our domestic regulatory approvals to continue to commercialize our products in the United States. We must demonstrate the safety, purity and potency, or efficacy, of cell therapy products to obtain FDA regulatory approval prior to marketing in the United States. Demonstration of safety and efficacy requires the conduct of nonclinical studies and well-controlled clinical trials in compliance with FDA, International Conference of Harmonization (ICH) and applicable local regulations. The FDA regulatory review process to obtain marketing approval is a rigorous process that requires demonstrating the ability to manufacture the product in compliance with cGMP in addition to demonstrating a favorable risk/benefit profile and making certain post-marketing commitments.

To date, our product commercialization efforts have been limited to the United States. In the event we market any products outside of the U.S. in the future, we will be required to maintain our foreign regulatory approvals in compliance with regulatory requirements and applicable local regulations to allow for commercialization outside the U.S. Regulatory requirements outside the U.S. often require additional studies and data to obtain registration and, as a result, approval timelines can also be longer than those in the U.S.

The safety, potency and purity of our products must be monitored to be in compliance with FDA requirements for safety, cGMP, and all other applicable regulations. This requires adverse event monitoring and reporting to regulatory agencies, as well as submission and approval of any changes in the manufacturing process. Our manufacturing and testing facilities are subject to FDA periodic inspections for compliance with cGMP requirements. Failure to meet regulatory requirements and post-marketing commitments and maintain cGMP compliance could result in severe and detrimental regulatory actions, including the loss of marketing approval.

Any changes in the regulatory requirements that affect our products and/or future product candidates could prevent, limit or delay our ability to market or develop new product candidates.

FDA regulations establish the regulatory requirements for drugs, devices and biological products. Our cell therapy products are regulated as devices or biologics under current regulations. Biologics require BLA approval in the U.S. prior to being marketed. The regulations and guidance that govern the approval of biological products for marketing in the U.S. are subject to review and change by the FDA, and such potential changes could have an adverse impact on our ability to continue to market our products and bring new products to the market.

The price and sale of any of our products may be limited by health insurance coverage and government regulation.

Maintaining and growing sales of our products will depend in large part on the availability of adequate coverage and the extent to which third-party payers, including health insurance companies, health maintenance organizations, and government health administration authorities such as the military, Medicare and Medicaid, private insurance plans and managed care programs will pay for the cost of the products and related treatment. Hospitals and other healthcare provider clients that purchase our products typically bill various third-party payers to cover all or a portion of the costs and fees associated with the procedures in which such products are used, sometimes including the cost of the purchase of these products.

Many private payers in the United States use coverage decisions and payment amounts determined by the Centers for Medicare & Medicaid Services (CMS), as guidelines in setting their coverage and reimbursement policies. While certain procedures using our products are currently covered by Medicare and other third-party payers, future action by CMS or other government agencies, including the imposition of coverage and reimbursement limitations, may diminish payments to physicians, outpatient centers and/or hospitals for covered services. Additionally, payers may require us to conduct post-marketing studies in order to demonstrate the cost-effectiveness of our products and current and future product candidates to such payers' satisfaction. Such studies might require us to commit a significant amount of management time and financial and other resources. Our products and future products might not ultimately be considered cost-effective. As a result, we cannot be certain that the procedures performed with our products will be reimbursed at a cost-effective level or reimbursed at all. Furthermore, the healthcare industry in the United States has experienced a trend toward cost containment as government and private insurers seek to control healthcare costs by imposing lower payment rates and negotiating reduced contract rates with service providers. Increasingly, third-party payers have attempted to control costs by challenging the prices charged for medical products. Therefore, we cannot be certain that the procedures performed with our products will be reimbursed at a cost-effective level. Nor can we be certain that third-party payers using a methodology that sets amounts based on the type of procedure performed, such as those utilized in many privately managed care systems and by Medicare, will view the cost of our products as justified so as to incorporate such costs into the overall cost of the procedure.

Moreover, we are unable to predict what changes will be made to the reimbursement methodologies used by third-party payers in the future. As a result of the continuing evaluation and assessment of these expected payments, our estimates for expected payments could change. We cannot be sure that reimbursement will be available for any product that we commercialize and, if reimbursement is available, the level of such reimbursement. Reimbursement may impact the demand for, or the price of, any product or product candidate for which we obtain marketing approval. Adequate third-party reimbursement might not be available to enable us to maintain price levels sufficient to realize an appropriate return on investment in our products and future product development. If coverage or adequate reimbursement is not available, or if our costs of production increase faster than increases in reimbursement levels, we may not be able to successfully grow the sales of our products or commercialize any current and future product candidates for which marketing approval is obtained. If reimbursement is not available or is available only at limited levels, we may not be able to successfully commercialize any product or product candidate for which we obtain marketing approval.

We are subject to significant regulation with respect to the manufacturing of our products.

All of those involved in the preparation of a cellular therapy for commercial sale or clinical trials, including our existing supply contract manufacturers and clinical trial investigators, are subject to extensive and continuing government regulations by the FDA and comparable agencies in other jurisdictions. Components of a finished therapeutic product approved for commercial sale or used in late-stage clinical trials must be manufactured in accordance with cGMP. These regulations govern manufacturing processes and procedures and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Our facilities and quality systems and the facilities and quality systems of some or all of our third-party contractors and suppliers are subject to pre-approval and routine FDA inspections for compliance with the applicable regulations as a condition of FDA approval of our products.

Generally, if any FDA inspection or audit identifies a failure to comply with applicable regulations or if a violation of our product specifications or applicable regulation occurs independent of such an inspection or audit, we or the FDA may require remedial measures that may be costly and/or time consuming for us or a third-party to implement and that may include the temporary or permanent suspension of a clinical trial or commercial sales, recalls, warning letters, market withdrawals, seizures or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business.

We could incur significant costs complying with environmental and health and safety requirements, or as a result of liability for contamination or other harm caused by hazardous materials that we use.

Our research and development and manufacturing processes involve the use of hazardous materials. We are subject to federal, state, local and foreign environmental requirements, including regulations governing the use, manufacture, handling, storage and disposal of hazardous materials, discharge to air and water, the cleanup of contamination and occupational health and safety matters. We cannot eliminate the risk of contamination or injury resulting from hazardous materials, and we may incur liability as a result of any contamination or injury. Under some environmental laws and regulations, we could also be held responsible for costs relating to any contamination at our past or present facilities and at third-party waste disposal sites where we have sent waste. These could include costs relating to contamination that did not result from any violation of law, and in some circumstances, contamination that we did not cause. We may incur significant expenses in the future relating to any failure to comply with environmental laws. Any such future expenses or liability could have a significant negative impact on our financial condition. The enactment of stricter laws or regulations, the stricter interpretation of existing laws and regulations or the requirement to undertake the investigation or remediation of currently unknown environmental contamination at our own or at a third-party site may require us to make additional expenditures, which could be material.

In order to obtain marketing authorization of any of our current or future therapy product candidates in the United States, the FDA requires us to submit a BLA or marketing application, which is subject to the agency's detailed review and the denial of such applications could negatively impact our prospects, financial condition and future results.

Cell therapy and other products require FDA review under an appropriate marketing application prior to commercialization. Future cell and other biologic therapy candidates would be subject to FDA's biological product requirements and would require submission of a BLA. The BLA is a request for permission to introduce, or deliver for introduction, a biologic product into interstate commerce in the U.S. and, once submitted, undergoes a detailed and rigorous review by the FDA. The review process includes, among other requirements, pre-approval inspections of the manufacturing facility. Additionally, approval may rely on post-market commitments. These commitments may include costly activities, such as additional clinical trials, and a failure to meet these commitments can result in negative actions by the FDA, including the withdrawal of the product from the market.

Our business, financial condition, results of operation and cash flows could be significantly and negatively affected by substantial governmental regulations.

Our products are subject to rigorous regulation by the FDA and numerous other federal, state and foreign governmental authorities. Overall, there appears to be a trend toward more stringent regulation worldwide, and we do not anticipate that this trend will dissipate in the near future.

In general, the development, testing, labeling, manufacturing and marketing of our products are subject to extensive regulation and review by numerous governmental authorities both in the United States and abroad. The regulatory process requires the expenditure of significant time, effort and expense to bring new products to market. For example, the FDA approved Epicel as a HUD pursuant to an HDE application. A HUD is a medical device intended to benefit patients in the treatment or diagnosis of a disease or condition that affects not more than 8,000 individuals in the United States per year. Once a HUD receives a HDE from the FDA, the product may be marketed and sold in the U.S. However, IRB approval is required before a HUD can be used at a facility, with the exception of emergency use. The HDE holder is responsible for ensuring that the product is administered only in facilities having an IRB that is constituted and which acts in accordance with the agency's regulation governing IRBs, including the requirement of continuing review of the use of the device. HUDs are also subject to additional FDA requirements, such as adverse event reporting and the submission of updated information on a periodic basis to demonstrate that the HUD designation is still valid. Failure to meet FDA requirements pertaining to a HUD could result in the suspension or revocation of the HDE.

If the HDE for Epicel is suspended or revoked, marketing approval for the product would require the submission and approval of a premarket approval application (PMA) in order for Epicel to be commercially available. The PMA process is costly, lengthy and uncertain. A PMA must be supported by extensive data, including, but not limited to, technical, preclinical, clinical trial, manufacturing and labeling data to demonstrate to the FDA's satisfaction the safety and efficacy of the device for its intended use. If the HDE approval for Epicel was withdrawn, and we were unable to obtain premarket approval through the PMA process, we would be unable to market Epicel for sale in the U.S.

We are also required to implement and maintain stringent reporting, labeling and record keeping procedures for our products, both in the United States, and abroad. Specifically, in the United States, both before and after a product is commercially released, we have ongoing responsibilities under FDA regulations. Compliance with the FDA's requirements, including the FDA's cGMP recordkeeping regulations, labeling and promotional requirements and adverse event reporting regulations, is subject to continual review and is monitored rigorously through periodic inspections by the FDA and through submission of annual reports. Our failure to comply with federal, state and foreign governmental regulations could lead to the issuance of warning letters or untitled letters, the imposition of injunctions, suspensions or loss of regulatory approvals, product recalls, termination of distribution, product seizures or civil penalties. In the most extreme cases, criminal sanctions or the closure of our manufacturing facility are possible.

In addition, the pharmaceutical, biologic and medical device industries also are subject to many complex laws and regulations governing Medicare and Medicaid reimbursement, and which target healthcare fraud and abuse. Many of these laws and regulations are subject to interpretation. In many instances, manufacturers and the life science industry do not have the benefit of significant regulatory or judicial interpretation of these laws and regulations. In certain public statements, governmental authorities have taken positions on issues for which little official interpretation was previously available. Some of these positions appear to be inconsistent with common practices within the industry but have not previously been challenged.

Various federal and state agencies have become increasingly active in recent years in their investigation and prosecution of various business practices, such as through the enforcement of the federal Anti-kickback Statute, the federal False Claims Act and the federal Food, Drug & Cosmetic Act and/or similar state laws. Governmental and regulatory actions against us could result in various consequences that could adversely impact our operations, including:

- The recall or seizure of products;
- The suspension or revocation of the authority necessary for the production or sale of a product;
- The suspension of shipments from particular manufacturing facilities;
- The imposition of fines and penalties;
- The delay of our ability to introduce new products into the market;
- Our exclusion or the exclusion of our products from being reimbursed by federal and state healthcare programs (such as military, Medicare, Medicaid, Veterans Administration health programs and/or Civilian Health and Medical Program Uniformed Service, or CHAMPUS); and
- Other civil or criminal prosecution or sanctions against us or our officers, directors and employees, such as fines, penalties or imprisonment.

Any of these consequences, in combination or alone, or even a public announcement that we are being investigated for possible violations of these laws, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

In the United States, if the FDA were to conclude that we are not in compliance with applicable laws or regulations or that any of our products are ineffective or pose an unreasonable health risk, the FDA could ban such products, detain or seize adulterated or misbranded products, order a recall, repair, replacement, or refund of payment of certain products, refuse to grant pending applications, refuse to provide certificates to foreign governments for exports, and/or require us to notify healthcare professionals and others that the products present unreasonable risks of substantial harm to the public health. The FDA may also impose operating restrictions on a companywide basis, enjoin and restrain certain violations of applicable law pertaining to our products and assess civil or criminal penalties against our officers, employees or us. The FDA may also recommend further investigation and prosecution to the United States Department of Justice (DOJ). Adverse regulatory action, depending on its magnitude, may restrict us from effectively marketing and selling our products.

In many of the foreign countries in which our products may be marketed in the future, we will be subject to regulations affecting, among other things, clinical efficacy, product standards, packaging requirements, labeling requirements, import/export restrictions, tariff regulations, duties and tax requirements. Many of the regulations applicable to our products in these countries, such as the Medicinal Products Directive and the ATMP guidelines governing products in the EU, are similar to those imposed by the FDA. In addition, in many countries the national health or social security organizations of those nations may require our products to be qualified before they can be marketed with the benefit of reimbursement eligibility. Failure to receive or delays in the receipt of relevant foreign qualifications could also be detrimental to our future growth.

As both U.S. and foreign government regulators have become increasingly stringent, we may be subject to more rigorous regulation by governmental authorities in the future. Our products and our operations are also often subject to the rules of industrial standards bodies, such as the International Standards Organization (ISO). If we fail to adequately address any of these regulations, our business will be harmed.

NexoBrid has been designated as an orphan drug in the United States, but we may be unable to obtain or maintain such a designation or the benefits associated with orphan drug status, including marketing exclusivity, which may cause our revenue to be reduced.

Under the Orphan Drug Act, the FDA may grant orphan designation to drugs or biologics intended to treat a rare disease or condition, generally a disease or condition that affects fewer than 200,000 individuals in the United States, or affects more than 200,000 individuals in the United States and for which there is no reasonable expectation that the cost of developing and making available the drug or biologic in the United States for such disease or condition will be recovered from sales in the United States of such drug or biologic. Orphan drug designation must be requested to and granted by the FDA before submitting a BLA. Among the other benefits of orphan drug designation are opportunities for grant funding towards clinical trial costs, tax credits for certain research and a waiver of the BLA application user fee. After the FDA grants orphan drug designation, the generic identity of the biologic and its potential orphan use are disclosed publicly by the FDA. Orphan drug designation does not necessarily convey any advantage in, or shorten the duration of, the regulatory review and approval process. The first BLA applicant to receive FDA approval for a particular product to treat a particular disease with FDA orphan drug designation is entitled to a seven-year exclusive marketing period in the United States for that product, for that indication. During the seven-year exclusivity period, the FDA may not approve any other applications to market the same drug for the same disease, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan product to meet the needs of patients with the disease or condition for which the biologic was designated. Orphan drug exclusivity, which would most likely run concurrently with the exclusivity, if any, received from the time of first licensure of a reference product, does not prevent the FDA from approving a different biologic for the same disease or condition, or the same biologic for a different disease or condition.

Such a designation may be revoked by the FDA in certain circumstances, such as if the agency finds that the applicant's request for designation request omitted material information required under the Orphan Drug Act and its implementing regulations. Furthermore, the FDA can waive orphan exclusivity if the applicant is unable to manufacture sufficient supply of the product subject to a period of orphan drug marketing exclusivity.

Changes to our products or future product candidates may require regulatory approvals and a denial of such required approval will negatively impact our prospects, financial condition and future results.

Changes or modifications in the manufacturing process of any of our products may require the submission of supplements to our BLAs, HDE application, and INDs. These supplements require the generation of data to support the change, and the review and approval by the FDA to obtain authorization for the change in the commercial product or in the investigational biological product before they can be implemented. Obtaining regulatory approvals for these changes may require the conduct of new studies and the purchase of new equipment to justify the change. This can be costly and time consuming. Regulatory delays can adversely impact our ability to improve our products and to introduce new products in a timely manner, which can be detrimental to our future growth.

If we or our suppliers fail to comply with ongoing FDA or other foreign regulatory authority requirements, or if we experience unanticipated problems with our products, these products could be subject to restrictions or withdrawal from the market.

The manufacturing processes, reporting requirements, post-approval clinical data and promotional activities for each of our products is subject to continued regulatory reporting and periodic inspections by the FDA, as well as other domestic and foreign regulatory agencies. In particular, we and our suppliers are required to comply with cGMP and GTP regulations for the manufacture of our products and other regulations which include methods and documentation of production controls, labeling, packaging, storage and shipment of any product, to name a few. Regulatory agencies such as the FDA enforce the cGMP, GTP and other regulations through periodic inspections and reporting. For example, the holder of an approved BLA or HDE is obligated to monitor and report adverse events and product failures, including critical deviations and lack of efficacy. A BLA or HDE device holder must maintain regulatory compliance for all aspects of the applicable regulations or the holder can be subject to regulatory action, including the recall or withdrawal of the product from the market.

Product manufacturers are subject to payment of annual prescription drug product program user fees and their facilities are subject to periodic inspections by the FDA and other regulatory agencies for compliance with cGMP and other applicable regulations. If at any time we or a regulatory agency discovers a previously unknown safety concern with a product, such as a serious adverse event of unanticipated severity or frequency that cannot be adequately managed and changes the risk-benefit profile of the product, or there are problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including suspension of manufacturing, recall or the withdrawal of the product from the market.

The failure by us or one of our suppliers to comply with applicable legal statutes and regulations administered by the FDA and other regulatory agencies, or the failure to timely and adequately respond to any adverse inspectional or review observations, or product safety issues, could result in, among other things, any of the following enforcement actions:

- Untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties;
- Unanticipated expenditures to address or defend such actions;
- Client notifications for repair, replacement, or refund of a product;
- Recall, detention or seizure of our products;
- Operating restrictions or partial suspension or total shutdown of production;
- Denial, refusal or delay of our requests for approval of new products or proposed changes to existing products;
- Implementation of operating restrictions;
- Withdrawal of product approvals that have already been granted;
- Refusal to approve a pending marketing application, such as a BLA or supplements to a BLA submitted by us;
- Refusal to grant export approval for our products; or
- Criminal prosecution.

If any of these actions were to occur it would harm our reputation and cause our product sales and profitability to suffer, preventing us from generating revenue. Furthermore, our key suppliers or partners may have compliance issues, which could impact our ability to manufacture our products on a timely basis and in the required quantities.

Inadequate funding for the FDA and other government agencies could hinder their ability to hire and retain key leadership and other personnel, prevent new products and services from being developed or commercialized in a timely manner or otherwise prevent those agencies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business.

The ability of the FDA to review and approve regulatory submissions and new products can be affected by a variety of factors, including government budget and funding levels, the ability to hire and retain key personnel, and statutory, regulatory, and policy changes. The average time to review and approve regulatory submissions at the agency has fluctuated in recent years as a result of some of these factors. In addition, government funding of the SEC and other government agencies on which our operations may depend, including those that fund research and development activities, is subject to the political process, which is inherently unpredictable.

Disruptions at the FDA and other agencies may also slow the time necessary for product candidates to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, several times in recent years, including most recently from December 22, 2018 to January 25, 2019, the U.S. government has shut down. As a result, certain regulatory agencies, including the FDA, have had to furlough essential employees and stop critical activities in the past.

As of June 23, 2020, the FDA noted it is continuing to ensure timely reviews of applications for medical products during the COVID-19 pandemic in line with its user fee performance goals; however, the FDA may not be able to continue its current pace and approval timelines could be extended, including where a pre-approval facility inspection or an inspection of clinical sites is required and due to the COVID-19 pandemic and travel restrictions, the FDA is unable to complete such required inspections during the review period. In 2020, several companies announced receipt of complete response letters due to the FDA's inability to complete required inspections for their applications. If a prolonged government shutdown occurs in the future, it could significantly impact the ability of the FDA to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

If the FDA determines that we have marketed or promoted our products for one or more off-label uses, we may be subject to civil or criminal penalties.

Although federal law and the FDA do not restrict practicing healthcare professionals from, in the practice of medicine, prescribing and using our products to treat patients with conditions that the physician believes our products are clinically appropriate for, under the FFDCA and other laws, we are prohibited from promoting our products for uses that are inconsistent with the uses that have been approved by the FDA - also known as "off-label" uses. This means, for example, that we may not make claims about the use of any of our marketed products, including MACI or Epicel, which are outside of their approved labeling and indications. Consequently, our sales representatives may not proactively discuss or provide information to healthcare professionals on such off-label uses. Should the FDA determine that our activities constitute off-label promotion, the FDA could bring an action to prevent us from distributing MACI or Epicel for the off-label use and could impose fines and penalties on us and our executives.

In addition, advertising and promotional materials, including educational and website material, must comply with the FDA's promotional and advertising regulations in addition to other potentially applicable federal and state laws, and such materials for biologics are subject to submission and review by the Center for Biologics Evaluation and Research. Failure to follow FDA rules and guidelines relating to promotion and advertising can result in, among other things, the FDA's refusal to approve a product, the suspension or withdrawal of an approved product from the market, product recalls, fines, disgorgement of money, operating restrictions, injunctions and/or criminal prosecutions.

If the Office of Inspector General within the Department of Health and Human Services, the DOJ, or another federal or state agency determines that we have promoted the off-label use of our products and/or we have violated anti-kickback laws, we may be subject to various penalties, including civil or criminal penalties, and the off-label use of our products may result in injuries that lead to product liability lawsuits, which could be costly to our business.

In addition to FDA restrictions concerning the manner in which we market our products, several other state and federal healthcare laws have been applied by the DOJ and state attorneys general to restrict certain marketing practices in the biopharmaceutical and medical technology industries. While physicians may prescribe products for off-label uses and indications, a company is prohibited from promoting an approved product for uses not consistent with its approved label. In addition, anti-kickback laws generally prohibit a prescription drug manufacturer from soliciting, offering, receiving or paying any remuneration in order to induce a healthcare professional or another individual or entity to purchase or prescribe a particular drug, biologic or medical device. If other federal or state regulatory authorities determine that we have engaged in off-label promotion and/or engaged in conduct violative of ant-kickback laws, we may be subject to civil or criminal penalties and could be prohibited from participating in government healthcare programs, such as Medicaid and Medicare. In addition, government agencies or departments could conclude that we have engaged in off-label promotion or violations of anti-kickback laws and, potentially, caused the submission of false claims. Even if we are successful in resolving such matters without incurring penalties, responding to investigations or prosecutions will likely result in substantial costs and could significantly and adversely impact our reputation and divert management's attention and resources, which could have a material adverse effect on our business, operating results, financial condition and our ability to finance our operations. In addition, the off-label use of our products may increase the risk of injury to patients, and, in turn, the risk of product liability claims being pursued against the Company. Product liability claims are expensive to defend and could divert our management's attention and result in substantial damage awards against us.

Health care reform measures and changes in policies, funding, staffing and leadership at the FDA and other agencies could hinder or prevent the commercial success of our products.

In the United States, there have been a number of legislative and regulatory changes to the healthcare system that could affect our future results of operations and the future results of operations of our potential customers.

Furthermore, there have been and continue to be a number of initiatives at the federal and state levels that seek to reduce healthcare costs. In March 2010, President Obama signed into law the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act (jointly, the ACA), which includes measures to significantly change the way health care is financed by both governmental and private insurers.

Since its enactment, there have been numerous judicial, administrative, executive and legislative challenges to certain aspects of the ACA, and we expect there will be additional challenges and amendments to the ACA in the future. Various portions of the ACA are currently undergoing legal and constitutional challenges in the United State Court of Appeals for the Fifth Circuit and the United States Supreme Court (Supreme Court); Executive Orders have previously been issued, which eliminated cost sharing subsidies and various provisions that would impose a fiscal burden on states or a cost, fee, tax, penalty or regulatory burden on individuals, healthcare providers, health insurers, or manufacturers of pharmaceuticals or medical devices; and Congress has introduced several pieces of legislation aimed at significantly revising or repealing the ACA. It is unclear whether the ACA will be overturned, repealed, replaced or further amended in the future. We cannot predict what effect further changes to the ACA would have on our business.

Further, the Bipartisan Budget Act of 2018, or the BBA, among other things, amends the ACA, effective January 1, 2019, to increase from 50 percent to 70 percent the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D and to close the coverage gap in most Medicare drug plans, commonly referred to as the “donut hole.”

These laws, and other state and federal healthcare reform measures may be adopted in the future, any of which may result in additional reductions in Medicare and other healthcare funding and otherwise affect the prices we may obtain for any of our product candidates for which we may obtain regulatory approval or the frequency with which any such product candidate is prescribed or used. Litigation and legislative efforts to change or repeal the ACA are likely to continue, with unpredictable and uncertain results.

While we cannot predict what impact on federal reimbursement policies this law or any replacement law will have in general or specifically on any product we may commercialize in the future, modifications to the Affordable Care Act or any replacement thereof may result in downward pressure on reimbursement, which could negatively affect market acceptance of new products. Any rebates, discounts, taxes costs or regulatory or systematic changes on healthcare resulting from the Affordable Care Act or its replacement may have a significant effect on our profitability in the future. We cannot predict whether the Affordable Care Act will continue or what other laws or proposals will be made or adopted, or what impact these efforts may have on us.

Individual states have become increasingly aggressive in passing legislation and implementing regulations designed to control product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access, and marketing cost disclosure and transparency measures, and designed to encourage importation from other countries and bulk purchasing. Legally-mandated price controls on payment amounts by third-party payers or other restrictions could harm our business, results of operations, financial condition and prospects.

Regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine what products and which suppliers will be included in their healthcare programs. This can reduce demand for our products or put pressure on our product pricing, which could negatively affect our business, results of operations, financial condition and prospects.

Given recent federal and state government initiatives directed at lowering the total cost of healthcare, the executive branch, Congress and state legislatures will likely continue to focus on healthcare reform and the reform of the Medicare and Medicaid programs. While we cannot predict the full outcome of any such government action or legislation, it may harm our ability to market our products and generate revenues.

Furthermore, regulatory authorities’ assessment of the data and results required to demonstrate safety and effectiveness can change over time and can be affected by many factors, such as the emergence of new information, including on other products, changing policies and agency funding, staffing and leadership. We cannot be sure whether future changes to the regulatory environment will be favorable or unfavorable to our business prospects.

Tissue-based products are regulated differently in different countries. These requirements may be costly and result in delay or otherwise preclude the distribution of our products in some foreign countries, any of which would adversely affect our ability to generate operating revenues.

Tissue based products are regulated differently in different countries. Many foreign jurisdictions have a different, and potentially more difficult, regulatory pathway for human tissue-based products, which may prohibit the distribution of these products until the applicable regulatory agencies grant marketing approval, or licensure. The process of obtaining regulatory approval is lengthy, expensive and uncertain, and we may never seek such approvals, or if we do, we may never gain those approvals. Furthermore, any adverse events in our clinical trials could negatively impact our products and product candidates.

Competitor companies may be able to take advantage of additional FDA guidance and new expedited programs designed for cell therapies to develop and/or commercialize new products in a shorter time period than previously predicted or in certain cases without a BLA.

Recognizing the importance of the cell therapy field, Congress included several provisions related to regenerative medicine in the Cures Act, signed into law on December 13, 2016. Building on the FDA's existing expedited programs available to regenerative medicine products, one of these provisions established a new program to help foster the development and approval of these products: the RMAT designation.

On November 16, 2017, the FDA also announced a comprehensive policy framework for the development and oversight of regenerative medicine products, including novel cellular therapies. This framework completes a risk-based regulatory approach that further describes the appropriate pathway for products that contain tissue or cells including more clearly defining which products may be considered only minimally manipulated or for homologous use.

With these changes in guidance and expedited programs, competitors may be able to make sales in the U.S. with minimally manipulated or homologous use products without the necessity of a BLA. In addition, competitors may also be able to obtain accelerated approval of new cell therapy products through use of RMAT designation.

Risks Related to Intellectual Property

If we fail to fulfill our obligations under our intellectual property licenses with third parties, we could lose license rights that are important to our business.

We are a party to intellectual property license agreements with third parties, including our license agreement with MediWound Ltd. for NexoBrid, and we may enter into additional license agreements in the future. Our existing license agreements impose, and we expect that our future license agreements will impose, various diligence, milestone payment, royalty, insurance and other obligations on us. If we fail to comply with these obligations, our licensors may have the right to terminate these agreements, in which event we may not be able to develop and market any product that is covered by these agreements. Termination of these licenses or a reduction or elimination of our licensed rights may result in our having to negotiate new or reinstated licenses with less favorable terms. In addition, if these in-licenses are terminated, or if the underlying patents fail to provide the intended exclusivity, competitors would have the freedom to seek regulatory approval of, and to market, products identical to ours after the expiry of data exclusivity. The occurrence of such events could materially harm our business.

If we are unable to protect the confidentiality of our proprietary information and know-how related to our products, our competitive position would be impaired and our business, financial condition and results of operations could be adversely affected.

Some of our technology, including our knowledge regarding the processing of our products, is unpatented and is maintained by us as trade secrets. In an effort to protect these trade secrets, we require our employees, consultants, collaborators and advisors to execute confidentiality agreements upon the commencement of their relationships with us. These agreements require that all confidential information developed by the individual or made known to the individual by us during the course of the individual's relationship with us be kept confidential and not disclosed to third parties. These agreements, however, may not provide us with adequate protection against improper use or disclosure of confidential information, and these agreements may be breached. A breach of confidentiality could affect our competitive position. In addition, in some situations, these agreements may conflict with, or be subject to, the rights of third parties with whom our employees, consultants, collaborators or advisors

have previous employment or consulting relationships. Also, others may independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets.

Adequate remedies may not exist in the event of unauthorized use or disclosure of our confidential information. The disclosure of our trade secrets would impair our competitive position and could have a material adverse effect on our business, financial condition and results of operations.

We have no patent protection for Epicel, which could adversely impact Epicel's competitive position.

We have no issued patents or pending patent applications relating to Epicel. While we attempt to protect our proprietary information as trade secrets through certain agreements with our employees, consultants, agents and other organizations to which we disclose our proprietary information, we cannot give any assurance that these agreements will provide effective protection for our proprietary information in the event of unauthorized use or disclosure of such information. If other cultured epidermal autografts are approved and marketed, we will be unable to prevent them from competing with Epicel in the marketplace. We expect that the presence of one or more competing products would reduce our market share and could negatively impact price levels and third-party reimbursement for Epicel, any of which would materially affect our business.

Some of our issued patents relating to MACI have already expired and others may be insufficient to protect our business.

We have issued patents in the United States and in certain foreign countries that relate to the combinations of chondrocytes and collagen membranes used in MACI. However, some of these have expired. Other patent filings that include technology relevant to MACI (e.g., its production and/or use of chondrocytes and collagen membranes) include both granted patents outside the U.S., and pending applications both inside and outside the U.S.; these are expected to expire, absent any extensions between 2023 and 2033. Whether or not these patent filings are or will be issued patents, they may not be sufficient to protect our product revenue. We may be subject to increased competition and our opportunity to establish or maintain product revenue could be substantially reduced or eliminated if our patents fail to issue or expire, or are revoked.

The patents we own may not be of sufficient scope or strength to provide us with significant commercial protection or commercial advantage, and competitors may be able to design around our patents or develop products that provide outcomes that are similar to ours without infringing on our intellectual property rights. In addition, we cannot be certain that any of our pending patent applications will be issued or that the scope of the claims in our pending patent applications will not be significantly narrowed or determined to be invalid.

If our patents and proprietary rights do not provide substantial protection, then our business and competitive position will suffer.

Our success depends in large part on our ability to develop or license intellectual property rights to protect our proprietary products and technologies. This involves complex legal, scientific, and factual questions and uncertainties. We rely upon patent, trade secret, copyright and contract laws to protect proprietary technology and trademark law to protect brand identities. However, we cannot assure you that any patent applications filed by, assigned to, or licensed to us will be granted, and that the scope of any of our issued or licensed patents will be sufficiently broad to offer meaningful protection. In addition, our issued patents or patents licensed to us could be successfully challenged, invalidated, held to be unenforceable, or circumvented so that our patent rights would not create an effective competitive barrier. We also cannot assure you that the inventors of the patents and applications that we own or license were the first to invent or the first to file on the inventions, or that a third-party will not claim ownership in one of our patents or patent applications. We cannot assure you that a third-party does not have or will not obtain patents that dominate the patents we own or license now or in the future.

Patent law relating to the scope of claims in the biotechnology field is evolving and our patent rights in this country and abroad are subject to this uncertainty. From time to time, the Supreme Court, other federal courts, the U.S. Congress or the United States Patent and Trademark Office (USPTO) may change the standards of patentability and any such changes could have a negative impact on our business.

We cannot assure you that our patent portfolio or our efforts to seek patent protection for our technology and products will not be negatively impacted by the guidance issued by the USPTO, the decisions described above, rulings in other cases, or changes in guidance or procedures issued by the USPTO.

There can be no assurance that future decisions of the Supreme Court or other federal courts will not have a negative impact on biotechnology patents generally or the ability of biotechnology companies to obtain or enforce their patents in the future. Such negative decisions by the Supreme Court or other federal courts could have a material adverse effect on our existing patent portfolio and our ability to protect and enforce our intellectual property in the future.

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

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. While an inadvertent lapse can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Non-compliance events that could result in abandonment or lapse of a patent or patent application include, but are not limited to, failure to respond to official actions within prescribed time limits, non-payment of fees and failure to properly legalize and submit formal documents. If we fail to maintain the patents and patent applications covering our products or current and future product candidates, our competitive position would be adversely affected.

With respect to MACI, if we are unable to obtain and enforce patents and to protect our trade secrets, others could use our technology to compete with us, which could limit opportunities for us to generate revenues by licensing our technology and selling products.

Our success will depend in part on our ability to obtain and enforce patents and maintain trade secrets in the United States and in other countries. If we are unsuccessful in obtaining and enforcing patents, our competitors could use our technology and create products that compete with our products, without paying license fees or royalties to us.

The preparation, filing, and prosecution of patent applications can be costly and time consuming. Our limited financial resources may not permit us to pursue patent protection of all of our technology and products throughout the world.

Even if we are able to obtain issued patents covering our technology or products, we may have to incur substantial legal fees and other expenses to enforce our patent rights in order to protect our technology and products from infringing uses. We may not have the financial resources to finance the litigation required to preserve our patent and trade secret rights.

A successful challenge to our trademarks could force us to rebrand Epicel or MACI.

We rely on our trademarks to distinguish our products from the products of our competitors, and have registered or applied to register a number of these trademarks. Third parties may challenge our use of the trademarks. In the event that our trademarks are successfully challenged, we could be forced to rebrand our products, which could result in loss of brand recognition and could require us to devote resources to advertising and marketing these new brands.

Intellectual property litigation could harm our business. We may be subject to patent infringement claims that could be costly to defend, which may limit our ability to use disputed technologies, and which could prevent us from pursuing research and development or commercialization of some of our products, require us to pay licensing fees to have freedom to operate and/or result in monetary damages or other liability for us.

The success of our business will depend significantly on our ability to operate without infringing patents and other proprietary rights of others. Our cell processing system and cell compositions utilize a wide variety of technologies and we can give no assurance that we have identified or can identify all inventions and patents that may be infringed by development and manufacture of our cell compositions. If the technology that we use infringes a patent held by others, we could be sued for monetary damages by the patent holder or its licensee, or we could be prevented from continuing research, development, and commercialization of products that rely on that technology, unless we are able to obtain a license to use the patent. The cost and

availability of a license to a patent cannot be predicted, and the likelihood of obtaining a license at an acceptable cost would be lower if the patent holder or any of its licensees is using the patent to develop or market a product with which any of our existing or future product candidates or our products would compete. If we could not obtain a necessary license, we would need to develop or obtain rights to alternative technologies, which could prove costly and could cause delays in product development, or we could be forced to discontinue the development or marketing of any products that were developed using the technology covered by the patent.

Although we have not been subject to any filed patent infringement claims, patents could exist or could be filed which would prohibit or limit our ability to market our products or maintain our competitive position. In the event of an intellectual property dispute, we may be forced to litigate. Such litigation is typically protracted and the results are unpredictable. Intellectual property litigation would divert management's attention from developing our products and would force us to incur substantial costs regardless of whether we are successful. An adverse outcome could subject us to significant liabilities to third parties including treble damages and the opposing party's attorneys' fees, and force us to pay significant license fees and royalties or cease the development and sale of our products and processes.

We have hired and expect to continue to hire individuals who have experience in cell culture and cell-based therapeutics and may have confidential trade secret or proprietary information of third parties. We caution these individuals not to use or reveal this third-party information, but we cannot assure you that these individuals will not use or reveal this third-party information. Thus, we could be sued for misappropriation of proprietary information and trade secrets. Such claims are expensive to defend and could divert our attention and could result in substantial damage awards and injunctions that could have a material adverse effect on our business, financial condition or results of operations.

We may become involved in lawsuits to protect or enforce our intellectual property, which could be expensive, time consuming and unsuccessful and have a material adverse effect on the success of our business.

Competitors may infringe our patents or misappropriate or otherwise violate our intellectual property rights. To counter infringement or unauthorized use, litigation may be necessary in the future to enforce or defend our intellectual property rights, to protect our trade secrets or to determine the validity and scope of our own intellectual property rights or the proprietary rights of others. Also, third parties may initiate legal proceedings against us to challenge the validity or scope of intellectual property rights we own or control. These proceedings can be expensive and time consuming. Many of our current and potential competitors have the ability to dedicate substantially greater resources to defend their intellectual property rights than we can. Accordingly, despite our efforts, we may not be able to prevent third parties from infringing upon or misappropriating our intellectual property.

Litigation could result in substantial costs and diversion of management resources, which could harm our business and financial results. In addition, in an infringement proceeding, a court may decide that a patent owned by or licensed to us is invalid or unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation proceeding could put one or more of our patents at risk of being invalidated, held unenforceable or interpreted narrowly.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on our business, financial condition or results of operations.

If we infringe the rights of third parties, we could be prevented from selling products, forced to pay damages, and defend against litigation.

If our products, methods, processes and other technologies infringe the proprietary rights of other parties, we could incur substantial costs and we may have to: obtain licenses, which may not be available on commercially reasonable terms, if at all; abandon an infringing product; redesign our products or processes to avoid infringement; stop using the subject matter claimed in the patents held by others; pay damages; and/or defend litigation or administrative proceedings which may be costly whether we win or lose, and which could result in a substantial diversion of our financial and management resources.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

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

- Others may be able to make products that are the same as or similar to our products or product candidates, but that are not covered by the claims of the patents that we own or have exclusively licensed;
- We or any strategic partners might not have been the first to make the inventions covered by the issued patents or pending patent applications that we own or have exclusively licensed;
- We might not have been the first to file patent applications covering certain of our inventions;
- Others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- It is possible that our pending patent applications will not lead to issued patents;
- Issued patents that we own or have exclusively licensed may not provide us with any competitive advantages, or may be held invalid or unenforceable as a result of legal challenges;
- Our competitors might conduct research and development activities in the U.S. and other countries that provide a safe harbor from patent infringement claims for certain research and development activities, as well as in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- We may not develop additional proprietary technologies that are patentable; and
- The patents of others may have an adverse effect on our business.

Others may challenge our patent or other intellectual property rights or sue us for infringement.

Risks Related to an Investment in our Common Stock

Our common stock price has been volatile and future sales of shares of common stock could have an adverse effect on the market price of such shares.

The market price of shares of our common stock has been volatile, ranging in closing price between $7.25 and $43.98 during January 1, 2020 through January 31, 2021. The price of our common stock may continue to fluctuate in response to a number of events and factors, such as:

- Announcements of research activities, business developments, technological innovations or new products by us or our competitors;
- Entering into or terminating strategic relationships;
- Information related to decisions by regulatory authorities regarding our products or product candidates or other regulatory developments or guidance in both the United States and abroad;
- Disputes concerning patents or proprietary rights;
- Changes in our revenues or expense levels;
- Changes in our pricing policies or the pricing policies of our competitors;
- Substantial changes in reimbursement practices;
- The amount of our cash resources and our ability to obtain additional funding;
- Seasonal or other variations in patient demand for MACI and Epicel;
- Demand for and clinical acceptance of our products;
- The timing of sales of products and of the introduction of new products;
- Public concern regarding the safety, efficacy or other aspects of the products or methodologies we are developing;
- Clinical trial results;
- News or reports from other stem cell, cell therapy or regenerative medicine companies;

- Actual or threatened litigation or governmental investigations or other major developments in such matters;
- Reports by securities analysts;
- Status of the investment markets;
- Public or private sales of additional securities;
- Cybersecurity incidents that materially affect our products, services, relationships or competitive conditions;
- Loss of key personnel;
- The impact of the COVID-19 pandemic on our business, operations, prospects and financial condition;
- Changes in management or the Board of Directors; and
- Concerns related to management transitions.

Any of these events may cause the price of our shares to fall, which may adversely affect our business and financing opportunities. In addition, the stock market in general and the market prices for biotechnology companies in particular have experienced significant volatility recently that often has been unrelated to the operating performance or financial conditions of such companies. These broad market and industry fluctuations may adversely affect the trading price of our common stock, regardless of our operating performance or prospects.

The sale of our common stock through future equity offerings may cause dilution and could cause the price of our common stock to decline.

Sales of our common stock offered through future equity offerings may result in substantial dilution to the interests of other holders of our common stock. The sale of a substantial number of shares of our common stock to investors, or anticipation of such sales, could make it more difficult for us to sell equity or equity-related securities in the future at a time and at a price that we might otherwise wish to effect sales.

We do not anticipate paying dividends on our common stock, and accordingly, shareholders must rely on stock appreciation for any return on their investment.

We have never declared or paid cash dividends on our common stock and do not expect to do so in the foreseeable future. The declaration of dividends is subject to the discretion of our board of directors and will depend on various factors, including our operating results, financial condition, future prospects and any other factors deemed relevant by our board of directors. You should not rely on an investment in our company if you require dividend income from your investment. The success of your investment will likely depend entirely upon any future appreciation of the market price of our common stock, which is uncertain and unpredictable. There is no guarantee that our common stock will appreciate in value.

General Risks

The use of our products and future product candidates may expose us to product liability claims, and we may not be able to obtain adequate insurance. As a result, such claims could affect our earnings and financial condition.

We face an inherent business risk of exposure to product liability claims in the event that the manufacture and/or use of our products during clinical trials, or after commercialization, result in adverse events. Moreover, we derive the raw materials for our products from patients serving as their own donors, the production process is complex, and the handling requirements are specific. All of these factors increase the likelihood of quality failures and subsequent product liability claims. Although we are not currently subject to any product liability proceedings and we have no reserves for product liability disbursements, we may incur material liabilities relating to product liability claims in the future, including product liability claims arising out of the usage of our products. Additionally, we may not be able to obtain or maintain product liability insurance on acceptable terms with adequate coverage or at all. If we are unable to obtain insurance, or if claims against us substantially exceed our coverage, then our business could be adversely impacted. Excessive insurance costs or uninsured claims would increase our operating loss and adversely affect our financial condition. Whether or not we are ultimately successful in any product liability litigation, such litigation could consume substantial amounts of our financial and managerial resources and could result in, among other things:

- Significant awards against us;
- Substantial litigation costs;
- Recall of the product;

- Injury to our reputation;
- Withdrawal of clinical trial participants; or
- Adverse regulatory action.

Any of these consequences could have a material adverse effect on our business, financial condition and results of operations.

We may not be able to raise the required capital to develop and commercialize our future product candidates and otherwise grow and expand our business.

Notwithstanding the net proceeds we received from previous public offerings, we may require substantial additional capital resources for strategic opportunities.

In order to grow and expand our business, to introduce other new product candidates into the marketplace, we may need to raise additional funds. We may also need significant additional funds or a collaborative partner, or both, to finance the research and development activities of future cell therapy product candidates for additional indications or in additional markets.

Our future capital requirements will depend upon many factors, including:

- Continued scientific progress in our research, clinical and development programs;
- Costs and timing of conducting clinical trials and seeking regulatory approvals;
- Competing technological and market developments;
- Avoiding infringement and misappropriation of third-party intellectual property;
- Obtaining valid and enforceable patents that give us a competitive advantage;
- Our ability to establish additional collaborative relationships;
- Our ability to scale up our production capabilities for larger quantities of our products;
- The effect of commercialization activities and facility improvements and expansions, if and as required; and
- Complementary business acquisitions or development opportunities.

We may try to access the public or private equity markets if conditions are favorable to complete a financing, even if we do not have an immediate need for additional capital at that time, or whenever we require additional operating capital. In addition, we may seek collaborative relationships, incur debt and access other available funding sources. This additional funding may not be available to us on reasonable terms, or at all. Some of the factors that will impact our ability to raise additional capital and our overall success include:

- Our ability to further commercialize our products;
- The rate and degree of progress of our product development;
- The rate of regulatory approval to proceed with clinical developmental programs;
- The level of success achieved in clinical trials;
- The requirements necessary for marketing authorization from regulatory bodies in the United States and other countries;
- The liquidity and market volatility of our equity securities; and
- Regulatory and manufacturing requirements and uncertainties, and technological developments by competitors.

If adequate funds are not available in the future, we may not be able to develop or enhance our products, take advantage of future opportunities, or respond to competitive pressures or unanticipated requirements and we may be required to delay or terminate research and development programs, curtail capital expenditures, and reduce business development and other operating activities, which would have a material adverse impact on our business, financial condition and results of operations.

The current credit and financial market conditions may exacerbate certain risks affecting our business.

We rely upon third parties for certain aspects of our business, including collaboration partners, wholesale distributors, contract clinical trial providers, contract manufacturers and third-party suppliers. Because of the recent tightening of global credit and the volatility in the financial markets, there may be a delay or disruption in the performance or satisfaction of commitments to us by these third parties, which could adversely affect our business.

We are dependent on our key manufacturing, quality and other management personnel and the loss of any of these individuals could harm our business.

Our success depends in large part upon the efforts of our key management and manufacturing and quality staff. The loss of any of these individuals, or our inability to attract and retain highly qualified scientific and management personnel in a timely manner, could materially and adversely affect our business and our future prospects. In the future, we may need to seek additional manufacturing and quality staff members. There is a high demand for highly trained manufacturing and quality personnel in our industry. We face competition for such personnel from other companies, research and academic institutions and other entities. For example, multiple companies with operations in Massachusetts have developed or are attempting to develop vaccines and/or treatments for COVID-19. In some instances, these companies are undertaking large-scale manufacturing operations in order to potentially supply their products throughout the United States. In many instances, these companies have advertised hundreds of open manufacturing positions to support these scale-ups. Although, to date, we have not experienced a significant number of departures among our manufacturing staff, we cannot be sure such departures will not occur in the future. We do not know whether we will be able to attract, train and retain highly qualified manufacturing and quality personnel in the future, which could have a material adverse effect on our business, financial condition and results of operations. A loss of one or more of our key personnel could severely and negatively impact our operations. Our key personnel are employed “at-will,” and any of them may elect to pursue other opportunities at any time. We have no present intention of obtaining key man life insurance on any of our key management, manufacturing, quality or other personnel.

Efforts to comply with securities laws and regulations require management resources, and we still may fail to comply.

As directed by Section 404 of the Sarbanes-Oxley Act of 2002, the SEC adopted rules requiring public companies to include a report of management on their internal controls over financial reporting in their annual reports on Form 10-K. The independent registered public accounting firm auditing our consolidated financial statements is required to attest to the effectiveness of our internal controls over financial reporting. If, in any year, we are unable to conclude that we have effective internal controls over financial reporting or if our independent registered public accounting firm is required to, but is unable to provide us with a report as to the effectiveness of our internal controls over financial reporting, investors could lose confidence in the reliability of our consolidated financial statements, which could result in a decrease in the value of our securities.

Our corporate documents and Michigan law contain provisions that may make it more difficult for us to be acquired.

Our Board of Directors has the authority, without shareholder approval, to issue additional shares of preferred stock and to fix the rights, preferences, privileges and restrictions of these shares without any further vote or action by our shareholders. Michigan law contains a statute that makes it more difficult for a 10% shareholder, or its officers, to acquire a company. This authority, together with certain provisions of our charter documents, may have the effect of making it more difficult for a third-party to acquire, or of discouraging a third-party from attempting to acquire, control of our company. This effect could occur even if our shareholders consider the change in control to be in their best interest.

Changes to tax legislation and regulations could negatively impact our earnings.

We are subject to income taxes in the U.S. In particular, although the passage of the Tax Cuts and Jobs Act of 2017 reduced the U.S. tax rate to 21%, the law is complex and further regulations and interpretations are still being issued. We could face audit challenges on how we apply the new law that could have a negative impact on our provision for income taxes. In addition, particularly in light of the Biden Administration, our future earnings could be negatively impacted by changes in tax legislation, including a repeal or modification of the Tax Cuts and Jobs Act of 2017, changes in tax rates and tax base such as limiting, phasing-out or eliminating deductions or tax credits, increase taxing of certain excess income from intellectual property, revising tax law interpretations and changes in other tax laws in the U.S.

Item 1B. ***Unresolved Staff Comments***

Not applicable.

Item 2. ***Properties***

We lease approximately 57,000 square feet in Cambridge, Massachusetts for manufacturing operations including clean rooms, laboratories and office space. This Cambridge lease expires in February 2032 and we have the right to extend until February 2037, subject to certain conditions being met. We lease approximately 14,000 square feet of office space in Cambridge, Massachusetts expiring in 2024 and we have the right to extend until 2029. We lease approximately 6,000 square feet of office space in Ann Arbor, Michigan, which expires in April 2023. We believe that our facilities are adequate to meet our current needs. Additional facilities may be required to support expansion for research and development activities or to assume manufacturing operations.

Item 3. ***Legal Proceedings***

We are currently not party to any material legal proceedings, although from time-to-time we may become involved in disputes in connection with the operation of our business.

Item 4. ***Mine Safety Disclosures***

Not applicable.

PART II

Item 5. ***Market for Registrant's Common Equity, Related Shareholder Matters and Issuer Purchase of Equity Securities***

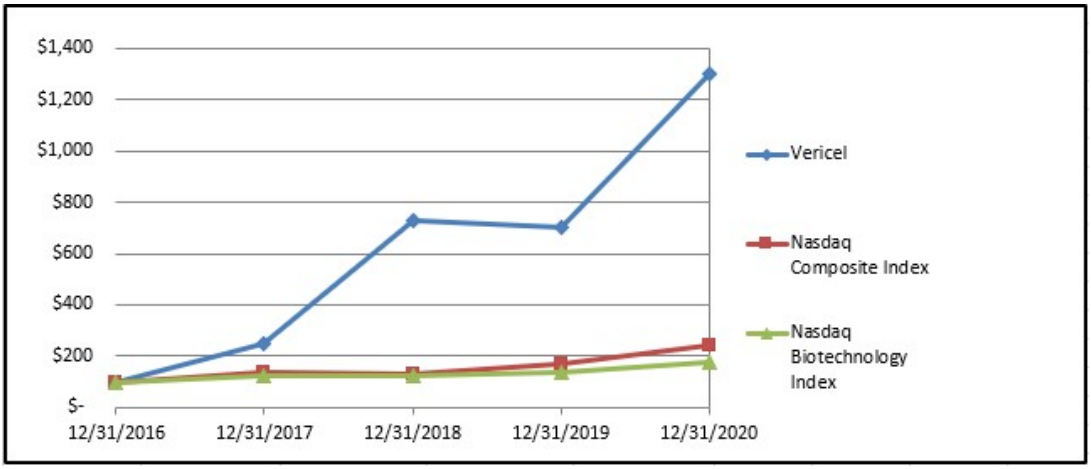
Our common stock is currently quoted on the NASDAQ Stock Market under the symbol "VCEL".

As of January 31, 2021 there were approximately 167 holders of record of the common stock. We have never paid cash dividends on our common stock and we do not anticipate paying such cash dividends in the foreseeable future. We currently anticipate that we will retain all future earnings, if any, for use in the development of our business.

Stock Performance Graph

The following graph shows the total stockholder return of an investment of $100 in cash on December 31, 2016 through December 31, 2020 for (i) our common stock, (ii) the NASDAQ Composite Index (U.S.) and (iii) the NASDAQ Biotechnology Index. Pursuant to applicable SEC rules, all values assume reinvestment of the full amount of all dividends, however, no dividends have been declared on our common stock to date. The stockholder return shown on the graph below is not necessarily indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns.

Stock Price Comparison



Equity Compensation Plan Information as of December 31, 2020

The following table sets forth information as of December 31, 2020 with respect to compensation plans (including individual compensation arrangements) under which equity securities are authorized for issuances:

	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights		Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by security holders (employees and directors)[1][2]	5,506,683	$	11.34	4,544,084
Employee stock purchase plan[1][3]	14,954	$	16.64	291,548

(1) The material features of these securities are described in note 9 of the Consolidated Financial Statements.

(2) Shares issuable under the Amended and Restated 2019 Omnibus Incentive Plan.

(3) Shares issuable under the 2015 Employee Stock Purchase Plan (ESPP).

Recent Sales of Unregistered Securities

In April and December of 2018 and September of 2019, Silicon Valley Bank and the assignee for MidCap Financial Trust and MidCap Funding III Trust exercised warrants obtained during the debt financings discussed in note 6 via cashless exercise in exchange for a total of 134,893 shares of the Company's common stock. See further discussion of debt financings and warrants in note 6 and note 12, within the attached Consolidated Financial Statements and Supplementary Data included in Item 8, of this Form 10-K, respectively.

Purchases of Equity Securities by the Issuer

There were no repurchases of shares of common stock made during the year ended December 31, 2020.

Item 6. ***Selected Financial Data***

The data for each of the five years in the period ended December 31, 2020 are derived from our Consolidated Financial Statements. The selected historical financial data for the financial position of our Company as of December 31, 2020 and 2019 and the results of their operations for each of the five years in the period ended December 31, 2020 presented below should be read together with our Consolidated Financial Statements, the notes to those statements and "Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations," included elsewhere in this Form 10-K.

(In thousands, except per share amounts)	Year Ended December 31, 2020	2019	2018	2017	2016
Product sales, net	$ 121,968	$ 117,850	$ 90,857	$ 62,760	$ 54,383
Other revenue	2,211	—	—	1,164	—
Total revenue	124,179	117,850	90,857	63,924	54,383
Cost of product sales	39,951	37,571	32,160	30,354	28,307
Gross profit	84,228	80,279	58,697	33,570	26,076
Research and development [(a)]	13,020	30,391	13,599	12,944	15,295
Selling, general and administrative	68,836	61,139	49,007	35,610	27,388
Loss on impairment of intangible asset[(b)]	—	—	—	—	2,638
Total operating expenses	81,856	91,530	62,606	48,554	45,321
Income (loss) from operations	2,372	(11,251)	(3,909)	(14,984)	(19,245)
Other income (expense):					
Increase in fair value of warrants[(c)]	—	—	(2,524)	(257)	—
Loss on extinguishment of debt[(d)]	—	—	(838)	(860)	—
Interest income	691	1,614	897	14	8
Interest expense	(6)	(8)	(1,732)	(1,107)	(314)
Other expense	(13)	(20)	(31)	(92)	(15)
Total other income (expense)	672	1,586	(4,228)	(2,302)	(321)
Net income (loss) before tax provision	3,044	(9,665)	(8,137)	(17,286)	(19,566)
Tax provision	180	—	—	—	—
Net income (loss)	$ 2,864	$ (9,665)	$ (8,137)	$ (17,286)	$ (19,566)
Net income (loss) per share attributable to common shareholders (Basic)	$ 0.06	$ (0.22)	$ (0.20)	$ (0.52)	$ (1.18)
Weighted-average number of common shares outstanding (Basic)	45,221	44,180	40,242	33,355	23,093
Net income (loss) per share attributable to common shareholders (Diluted)	$ 0.06	$ (0.22)	$ (0.20)	$ (0.52)	$ (1.18)
Weighted-average number of common shares outstanding (Diluted)	47,282	44,180	40,242	33,355	23,093

(a) In May 2019, the Company paid MediWound $17.5 million in consideration for a license to commercialize NexoBrid®. The $17.5 million upfront payment was recorded to research and development expense in the year ended December 31, 2019 as the license is for registration-stage product rights and is considered in process research and development.

(b) The loss on impairment of intangible asset in 2016 is related to write-off of the commercial use rights for certain products (primarily Carticel®). Upon the approval of MACI in December 2016 and the replacement of Carticel with MACI®, it was determined the Carticel related intangible asset was fully impaired as of December 31, 2016.

(c) Fluctuations in the fair value of the warrants are due to the reduction in the time to maturity and changes in our stock price. There are no warrants outstanding as of December 31, 2019 and 2020.

(d) In December 2017, we modified our debt arrangement for outstanding debt that was held during that time, which resulted in a loss incurred for fees expensed upon the extinguishment of debt that was replaced with a new debt arrangement. In December 2018, we prepaid in full all outstanding indebtedness which resulted in a loss incurred for fees expensed upon the extinguishment of this debt described in note 6, within the attached Consolidated Financial Statements and Supplementary Data in Item 8, of this Form 10-K.

(In thousands)	December 31, 2020	2019	2018	2017	2016
Cash and cash equivalents	$ 33,620	$ 26,889	$ 18,286	$ 26,862	$ 22,987
Short-term investments	42,187	42,829	64,638	—	—
Total cash, cash equivalents, and short-term investments	75,807	69,718	82,924	26,862	22,987
Working capital (a)	101,077	91,860	97,991	37,416	31,870
Property and equipment, net	7,633	7,144	5,906	4,071	3,875
Total assets	205,608	153,238	118,689	54,577	48,598
Total liabilities	71,348	42,147	16,458	32,037	23,890
Total shareholders' equity	134,260	111,091	102,231	22,540	24,708

(a) Working capital is defined as current assets less current liabilities.

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

Safe Harbor Statement under The Private Securities Litigation Reform Act of 1995

Our reports, filings and other public announcements contain certain statements that describe our management's beliefs concerning future business conditions, plans and prospects, growth opportunities and the outlook for our business and the biopharmaceutical industry based upon information currently available. Such statements are "forward-looking" statements within the meaning of the Private Securities Litigation Reform Act of 1995. Wherever possible, we have identified these forward-looking statements by words such as "will," "may," "anticipates," "believes," "intends," "estimates," "expects," "plans," "projects," "trends," "opportunity," "current," "intention," "position," "assume," "potential," "outlook," "remain," "continue," "maintain," "sustain," "seek," "target," "achieve," "continuing," "ongoing," and similar words or phrases, or future or conditional verbs such as "would," "should," "could," "may," or similar expressions. These forward-looking statements are based upon assumptions our management believes are reasonable. Such forward-looking statements are subject to risks and uncertainties which could cause our actual results, performance and achievements to differ materially from those expressed in, or implied by, these statements, including, among others, the risks and uncertainties listed in this report under "Item 1A Risk Factors" and in our other reports filed with the SEC from time-to-time.

Because our forward-looking statements are based on estimates and assumptions that are subject to significant business, economic and competitive uncertainties, many of which are beyond our control or are subject to change, actual results could be materially different and any or all of our forward-looking statements may turn out to be wrong. Forward-looking statements speak only as of the date made and can be affected by assumptions we might make or by known or unknown risks and uncertainties. Many factors mentioned in our discussion in this report will be important in determining future results. New factors emerge from time-to-time, and it is not possible for us to predict which factors will arise. Consequently, we cannot assure you that our expectations or forecasts expressed in such forward-looking statements will be achieved. Except as required by law, we undertake no obligation to publicly update any of our forward-looking or other statements, whether as a result of new information, future events, or otherwise.

Overview

Vericel Corporation is a leader in advanced cell therapies and specialty biologics for the sports medicine and severe burn care markets. We currently market two FDA-approved autologous cell therapy products in the United States. MACI® (autologous cultured chondrocytes on porcine collagen membrane) is an autologous cellularized scaffold product indicated for the repair of symptomatic, single or multiple full-thickness cartilage defects of the knee with or without bone involvement in adults. Epicel® (cultured epidermal autografts) is a permanent skin replacement HUD for the treatment of adult and pediatric patients with deep-dermal or full-thickness burns comprising greater than or equal to 30 percent of TBSA. We also hold an exclusive license from MediWound Ltd. for North American rights to NexoBrid®, (concentrate of proteolytic enzymes enriched in bromelain), a registration-stage biological orphan product. On June 30, 2020, MediWound submitted to the FDA a BLA seeking the approval of NexoBrid for eschar removal (debridement) in adults with deep partial-thickness and/or full-thickness thermal burns. The FDA subsequently accepted the BLA for filing and has assigned a Prescription Drug User Fee Act (PDUFA) target date of June 29, 2021.

COVID-19

Throughout 2020, the pandemic caused by the spread of a novel strain of coronavirus (COVID-19) has created significant disruptions to the U.S. and global economy and has contributed to significant volatility in financial markets. The global impact of the outbreak is continually evolving and, as the virus spreads and infection rates surge in various locations, many state, local and national governments – including those in Massachusetts and Michigan, where our operations are located – have responded by issuing, extending and supplementing orders requiring quarantines, restrictions on travel, and the mandatory closure of certain non-essential businesses, among other actions. In the U.S., the status and application of these orders have varied on a state-by-state basis since the early days of the pandemic. Many of the restrictions have been periodically updated as infections rates in the U.S. have risen and fallen and as world health leaders learn more about the virus, its transmission pathway and who is most at risk. Because Vericel is deemed an essential business, we continue to be exempt from government orders, in their current form, requiring the closure of workplaces and the cessation of business operations.

Notwithstanding being an essential business, Vericel's business and operations have been adversely impacted by the effects of COVID-19. After the COVID-19 pandemic began directly affecting the U.S., in March 2020, the American College of Surgeons and United States Surgeon General recommended that each hospital, health system, and surgeon minimize, postpone, or cancel electively scheduled surgeries. These recommendations were followed by numerous state level executive orders either

restricting or partially restricting elective surgeries. Because MACI is an elective surgical procedure, as a result of these restrictions, beginning in mid-March 2020, we began to experience a significant increase in cancellations of scheduled MACI procedures as well as a slowdown in new MACI orders. The widespread suspension of elective procedures impacted our business and operations during the first and second quarters of 2020. These restrictions began to ease in May and by the end of September 2020 there were no state orders in place that directly impacted a surgeon's or patient's ability to move forward with a MACI surgery. Consequently, MACI procedure and order volumes recovered throughout the third and fourth quarter of 2020, and the majority of MACI cases that had previously been canceled as a result of COVID-19 factors were rescheduled. The COVID-19 pandemic remains unpredictable, however, and in late September and October 2020, the number of COVID-19 infections began to increase markedly in various geographies and by late December 2020 the rolling seven-day average of new daily coronavirus cases in the United States reached the highest level at any point during the pandemic. As a result, the scheduling of MACI pipeline cases during the last two weeks of December slowed compared to historical trends and there was an increase in case cancellations during that period. Although hospitals are now better prepared for subsequent surges in COVID-19 patients, the risk remains that regional or local restrictions could again be placed on the performance of elective surgical procedures, or that patients may choose to postpone or be unable to appear for a MACI procedure if the number of COVID-19 infections in the United States continues to rise.

Though Epicel is used almost exclusively in an emergent setting by burn centers and surgeons throughout the country, Epicel revenue and procedure volumes have been less affected by the pandemic. Nevertheless, large burns and burn admissions can be affected by restrictions on human activity resulting from more severe government lockdown orders. Epicel procedure volumes did experience a slow-down during the second quarter of 2020, however, the reduction was less pronounced than that observed with MACI. Further reductions could be observed in the future, based on the degree of restrictions imposed.

At the outset of the pandemic, Vericel put in place a comprehensive workplace protection plan, which institutes protective measures in response to COVID-19. These measures include mandatory employee training on social distancing and hygiene protocols, conducting daily health screenings of all employees, vendors and visitors entering our facilities, canceling all international business travel, limiting domestic business travel to essential purpose travel only, requesting that employees limit non-essential personal travel, enhancing our facilities' janitorial and sanitary procedures, making certain physical modifications and enhancements to our facilities to enable effective social distancing among employees, providing certain personal protective equipment to employees working in our offices, encouraging employees to work from home to the extent their job function enables them to do so, limiting third-party access to our facilities, encouraging the use of virtual employee meetings, modifying the manner and schedule of on-site production activities, and providing guidance to our field-based commercial teams concerning their communications and contact with customers and healthcare professionals. In addition, we put certain expense reduction measures in place including a reduction of discretionary spending. We are reviewing these measures regularly as the pandemic evolves and may take additional actions to the extent required.

We continue to manufacture MACI and Epicel and are maintaining a significant safety stock of all key raw materials. We do not expect current supply chain interruptions will impact our ongoing manufacturing operations. With respect to customer delivery, MACI final product has an established shelf life of six (6) days and established shipping shelf life of three (3) days. Currently, MACI is picked up by courier and shipped by commercial air or ground transportation to customer surgical sites. Epicel final product has an established shelf life of 24 hours and is hand carried to customer hospitals by courier. Transportation is primarily by commercial or charter airline. Although we have not experienced material shipping delays or materially increased costs to date, significant disruption of air travel could result in the inability to deliver MACI or Epicel final products to customer sites within appropriate timeframes, which could further adversely impact our business. There is no expected impact of COVID-19 on our distributors, operations or third-party service providers' ability to manage patient cases.

We believe it is likely that we will continue to experience variable impacts on our business, based on the resurgence of COVID-19 in various areas of the United States. Measures taken to limit the impact of COVID-19 at the international, national and local levels, including shelter-in-place orders, social distancing measures, travel bans and restrictions, and business and government shutdowns, may continue to create significant negative economic impacts on a global basis. Given that uncertainty, we cannot reliably estimate the extent to which the COVID-19 pandemic may continue to impact utilization and revenues of our products in 2021 and beyond.

For a discussion of additional risks associated with COVID-19, please see Item 1A. Risk Factors.

Manufacturing

We have a cell-manufacturing facility in Cambridge, Massachusetts which is used for U.S. manufacturing and distribution of MACI and Epicel.

Product Portfolio

Our marketed products include two FDA-approved autologous cell therapies. MACI, a third-generation autologous implant for the repair of symptomatic, full-thickness cartilage defects of the knee in adult patients and Epicel, a permanent skin replacement for adult and pediatric patients with deep dermal or full-thickness burns greater than or equal to 30% of TBSA. Both products are currently marketed in the U.S. In addition, we have entered into exclusive license and supply agreements with MediWound to commercialize NexoBrid in North America. As previously mentioned, MediWound has submitted a BLA to the FDA seeking commercial approval of NexoBrid. On September 16, 2020, we announced that the FDA accepted the BLA for review and has assigned a PDUFA target date of June 29, 2021.

MACI and Carticel

Carticel®, an earlier generation ACI product for the treatment and repair of cartilage defects in the knee, was the first FDA-approved autologous cartilage repair product. Carticel was replaced at the end of the second quarter of 2017 by MACI, which the FDA approved on December 13, 2016 by the FDA. MACI is a third-generation product for ACI, a class of methods for the repair of symptomatic, single or multiple full-thickness cartilage defects of the knee with or without bone involvement in adults.

The target audience of U.S. physicians is approximately 5,000 orthopedic surgeons and is divided into two segments - a group of orthopedic surgeons who self-identify and/or have a formal specialty as sports medicine physicians, and a sub-population of general orthopedic surgeons who perform a high volume of cartilage repair procedures. As of December 31, 2020, we have increased the number of MACI sales representatives to 76 Clinical Account Specialists and expanded their reach to over nine geographical regions to enable the sales force to call on 2,000 of the general orthopedic surgeons. Most private payers have a medical policy that covers treatment with MACI with the top 30 largest commercial payers having a formal medical policy for MACI or ACI in general. Even for private payers that have not yet approved a medical policy for MACI, for medically appropriate cases, we often obtain approval on a case-by-case basis. For the year ended December 31, 2020, MACI net revenues totaled $94.4 million.

Epicel

Epicel is a permanent skin replacement for deep dermal or full-thickness burns greater than or equal to 30% of TBSA. Epicel is regulated by the Center for Biologics Evaluation and Research, or CBER of the FDA under medical device authorities, and is the only FDA-approved cultured epidermal autograft product available for large total surface area burns. Epicel was designated as a HUD in 1998 and a HDE application for the product was submitted in 1999. HUDs are devices that are intended for diseases or conditions that affect fewer than 8,000 individuals annually in the U.S. Under an HDE approval, a HUD cannot be sold for an amount that exceeds the cost of research and development, fabrication and distribution unless certain conditions are met.

A HUD is eligible to be sold for profit after receiving HDE approval if the device meets certain eligibility criteria, including where the device is intended for the treatment of a disease or condition that occurs in pediatric patients and such device is labeled for use in pediatric patients. If the FDA determines that a HUD meets the eligibility criteria, the HUD is permitted to be sold for profit so long as the number of devices distributed in any calendar year does not exceed the Annual Distribution Number (ADN). The ADN is defined as the number of devices reasonably needed to treat a population of 8,000 individuals per year in the U.S.

On February 18, 2016, the FDA-approved our HDE supplement to revise the labeled indications of use for Epicel to specifically include pediatric patients. The revised product label also now specifies that the probable benefit of Epicel, mainly related to survival, was demonstrated in two Epicel clinical experience databases and a physician-sponsored study comparing outcomes in patients with massive burns treated with Epicel relative to standard care. Because of the change in the label to specifically include use in pediatric patients, Epicel is no longer subject to the HDE profit restrictions. In conjunction with adding the pediatric labeling and meeting pediatric eligibility criteria, the FDA has determined the ADN number for Epicel to be 360,400 which is approximately 45 times larger than the volume of grafts sold in 2019. We currently have an eleven-person sales force comprised of seven (7) account managers and four (4) burn clinical specialists, overseen by a senior sales director. In the year ended December 31, 2020, Epicel net revenues totaled $27.5 million.

NexoBrid

Our portfolio also includes NexoBrid, a topically-administered biological product that enzymatically removes nonviable burn tissue, or eschar, in patients with deep partial and full-thickness thermal burns. On June 30, 2020, we announced the submission of a BLA to the FDA seeking the approval of NexoBrid. Subsequently, on September 16, 2020, we announced that the FDA accepted the BLA for review and assigned a PDUFA target date of June 29, 2021. NexoBrid is approved in the European Union and other international markets and has been designated as an orphan biologic in the United States, European Union and other international markets. Pursuant to the terms of our existing license agreement, if the BLA is approved, MediWound will transfer the BLA to Vericel and Vericel will market NexoBrid in the U.S. Both MediWound and Vericel, under the supervision of a Central Steering Committee comprised of members of both companies will continue to guide development of NexoBrid in North America. Under our license agreement with MediWound, NexoBrid is being manufactured for BARDA prior to approval by the FDA under an emergency use authorization. Vericel recorded revenue of $2.2 million associated with the delivery of NexoBrid to BARDA during the year ended December 31, 2020.

Results of Operations

Net Income

Our net income for the year ended December 31, 2020 totaled $2.9 million. Our net loss for the year ended December 31, 2019 and December 31, 2018 totaled $9.7 million and $8.1 million, respectively, which included a $17.5 million upfront payment to MediWound for the NexoBrid license in 2019 and a loss on extinguishment of debt of $0.8 million in 2018.

	Year Ended December 31,		
(In thousands)	**2020**	**2019**	**2018**
Net revenues	$ 124,179	$ 117,850	$ 90,857
Cost of product sales	39,951	37,571	32,160
Gross profit	84,228	80,279	58,697
Total operating expenses	81,856	91,530	62,606
Gain (loss) from operations	2,372	(11,251)	(3,909)
Other income (expense)	672	1,586	(4,228)
Tax provision	180	—	—
Net income (loss)	$ 2,864	$ (9,665)	$ (8,137)

Net Revenues

Net revenues increased for the year ended December 31, 2020, compared to December 31, 2019, with both MACI and Epicel growing, in addition to revenue being recognized related to the first deliveries of NexoBrid to BARDA. An increase in demand during the third and fourth quarters of 2020, partially offset the effects of COVID-19 related shutdowns in the first half of 2020.

Net revenues increased for the year ended December 31, 2019, compared to December 31, 2018, primarily due to an increase in MACI volume growth as well as continued growth in demand for Epicel grafts over the prior year.

Net revenues for the years ended December 31, 2020, 2019 and 2018 are shown below.

	Year Ended December 31,		
Revenue by product (In thousands)	**2020**	**2019**	**2018**
MACI	$ 94,432	$ 91,620	$ 67,741
Epicel	27,536	26,230	23,116
NexoBrid	2,211	—	—
	$ 124,179	$ 117,850	$ 90,857

Seasonality. During 2020, the effects of the COVID-19 pandemic disrupted the normal seasonality of our MACI business. These effects included, among others, the temporary limitation of elective surgical procedures throughout the country, the

inability of our Clinical Account Specialists to call on surgeon customers and, we believe, a reduction in the number of patients seeking treatment for cartilage damage. In the four years preceding 2020, ACI sales volumes from the first through the fourth quarter on average represented 19% (16%-24% range), 23% (21%-25% range), 22% (20%-23% range) and 36% (32%-38% range) respectively, of total annual volumes. MACI orders are consistently stronger in the fourth quarter due to several factors including insurance deductible limits and the time of year patients prefer to start rehabilitation. Due to COVID-19 the seasonality in 2020 did not follow a historical patterns, and seasonality in 2021 could be impacted by COVID-19 related factors, as well. Due to the low incidence and variable occurrence of severe burns, Epicel revenue has inherent variability from quarter-to-quarter and does not exhibit significant seasonality. Over the past four years, Epicel revenue in a single quarter has ranged from as high as 38% to as low as 18% of annual revenue.

Gross Profit and Gross Profit Ratio

	Year Ended December 31,		
(In thousands)	**2020**	**2019**	**2018**
Gross profit	$ 84,228	$ 80,279	$ 58,697
Gross profit %	67.8 %	68.1 %	64.6 %

Gross profit increased for the year ended December 31, 2020, compared to 2019, as well as for the year ended December 31, 2019, compared to 2018, primarily due to an increase in MACI and Epicel sales combined with our highly fixed manufacturing cost structure which consists mainly of labor and facility costs that do not materially fluctuate with volume increases. The gross profit increase for the year ended December 31, 2020 also includes the impact of the NexoBrid revenue.

Gross profit percentage decreased for the year ended December 31, 2020, compared to 2019, as a result of a reduction in sales in the second quarter of 2020 due to COVID-19 related restrictions on elective surgeries. Due to our highly fixed manufacturing cost structure, we incurred labor and facility costs during a period of little production which decreased the year to date percentage. The increase in gross profit for the year ended December 31, 2019, compared to 2018, was the result of a large increase in revenue as noted above.

Research and Development Costs

	Year Ended December 31,		
(In thousands)	**2020**	**2019**	**2018**
Research and development costs	$ 13,020	$ 30,391	$ 13,599

The following table summarizes research and development expenses which includes license fees, materials, professional fees and the approximate allocation of employee-related salary and fringe benefit costs for our research and development projects:

	Year Ended December 31,		
(In thousands)	**2020**	**2019**	**2018**
MACI	$ 7,157	$ 8,088	$ 10,444
Epicel	3,257	3,538	3,155
NexoBrid	2,606	18,765	—
Total research and development costs	$ 13,020	$ 30,391	$ 13,599

Research and development expenses for the year ended December 31, 2020 were $13.0 million, compared to $30.4 million, for the year ended December 31, 2019. The decrease in research and development costs during the year ended December 31, 2020 is due primarily to the $17.5 million upfront payment to MediWound for the North American rights to NexoBrid made in 2019.

Research and development expenses for the year ended December 31, 2019 were $30.4 million, compared to $13.6 million for the year ended December 31, 2018. The increase is due primarily to the $17.5 million upfront payment to MediWound for the North American rights to NexoBrid, which was partially offset by costs related to the ongoing MACI pediatric trial which decreased compared to the same period a year ago.

Selling, General and Administrative Costs

(In thousands)	Year Ended December 31, 2020	2019	2018
Selling, general and administrative costs	$ 68,836	$ 61,139	$ 49,007

Selling, general and administrative expenses for the years ended December 31, 2020 and 2019 increased to $68.8 million from $61.1 million, respectively. The increase in selling, general and administrative expenses in 2020 is primarily due to a $4.4 million increase in MACI sales force expenses, $1.2 million of incremental third-party patient reimbursement support services, a $1.2 million increase in stock-based compensation expenses and $0.9 million increase in Epicel sales force expense.

Selling, general and administrative expenses for the years ended December 31, 2019 and 2018 increased to $61.1 million from $49.0 million, respectively. The increase in selling, general and administrative expenses in 2019 is due primarily to a $4.2 million increase in stock-based compensation expenses, an incremental $2.6 million in MACI sales force expenses driven by the expansion in the second quarter of 2019, a $2.4 million increase in marketing expenses and a $1.8 million increase in patient reimbursement support services.

Other Income (Expense)

(In thousands)	Year Ended December 31, 2020	2019	2018
Increase in fair value of warrants	$ —	$ —	$ (2,524)
Loss on extinguishment of debt	—	—	(838)
Interest income	691	1,614	897
Interest expense	(6)	(8)	(1,732)
Other expense	(13)	(20)	(31)
Total other income (expense)	$ 672	$ 1,586	$ (4,228)

The change in other income and expense for the year ended December 31, 2020 compared to 2019, is due primarily to a drop in interest income due to an overall decrease in market yield related to our short and long-term investments.

The change in other income and expense for the year ended December 31, 2019, compared to 2018, is due primarily to interest income as a result of our investments in various marketable debt securities. The other income and expense in 2018 relate to the increase in our stock price in 2018 resulting in an increase in the fair value of warrants and interest expense related to the then outstanding term loan. For the year ended December 31, 2019, we did not incur interest expense as the term loan was repaid in December 2018 and we did not experience a change in warrant value due to the expiration of the liability classified warrants in 2018.

Tax Provision

For the year-ended December 31, 2020, we recorded income tax expense of $0.2 million as a result of taxable income in certain states where the net operating loss carryforwards and related deferred tax assets have been fully utilized. We did not have material income tax expense in prior periods.

Stock Compensation

Non-cash stock-based compensation expense included in cost of goods sold, research and development expenses and selling, general and administrative expenses is summarized in the following table:

	Years Ended December 31,		
(in thousands)	**2020**	**2019**	**2018**
Cost of goods sold	$ 1,949	$ 2,029	$ 1,015
Research and development	1,884	2,428	1,672
Selling, general and administrative	10,010	8,722	4,536
Total non-cash stock-based compensation expense	$ 13,843	$ 13,179	$ 7,223

The increase in stock-based compensation expense is due primarily to fluctuations in stock prices which impacts the fair value of the options and restricted stock units awarded and the expense recognized in the period.

Liquidity and Capital Resources

Since our acquisition in 2014 of MACI, Epicel and Carticel, our primary focus has been to invest in our existing commercial business with the goal of growing revenue. We have raised significant funds in order to complete our product development programs and to market and commercialize our products including NexoBrid. To date, we have financed our operations primarily through cash received through Epicel and MACI sales, debt and public and private sales of our equity securities. Despite the effects of the COVID-19 pandemic, we generated $17.6 million in operating cash flows during 2020 and we may continue to finance our commercial business operations through the sales of equity securities.

Cash Flows

The following table summarizes our sources and uses of cash for each of the periods presented:

	Year Ended December 31,	
(in thousands)	**2020**	**2019**
Cash provided by (used for) operating activities	$ 17,572	$ (7,183
Cash provided by (used for) investment activities	(17,160)	10,615
Cash provided by financing activities	6,441	5,266
Net increase in cash, cash equivalents and restricted cash	$ 6,853	$ 8,692

Our cash and cash equivalents totaled $33.6 million, short-term investments totaled $42.2 million and long-term investments totaled $24.1 million as of December 31, 2020. The $17.6 million of cash generated by operations was the result of a $2.9 million net income, additional noncash charges including $13.8 million in stock compensation expense, $4.4 million in operating lease amortization and $2.4 million in depreciation and amortization expense. Working capital requirements increased due to a $2.3 million increase in accounts receivable and a $2.5 million increase in inventory, as a result of an increase in sales volume, slightly offset by $3.3 million in accrued expenses.

Our cash and cash equivalents totaled $26.9 million, short-term investments totaled $42.8 million and long-term investments totaled $9.2 million at December 31, 2019. The $7.2 million of cash used for operations was the result of an $9.7 million net loss which included a cash outflow of $17.5 million to MediWound for the upfront payment for the NexoBrid license, offset by noncash charges including $13.2 million in stock compensation expense, $2.8 million in operating lease amortization and $1.7 million in depreciation and amortization expense. Working capital requirements increased due to a $8.7 million increase in accounts receivable and a $3.3 million increase in inventory, as a result of the increase in sales volume, slightly offset by $1.0 million in accrued expenses related to timing of payments.

The change in cash used for investing activities in 2020 is the result of $63.1 million in investments purchases, respectively, offset by $48.5 million of investment sales and maturities and property plant and equipment purchases of $2.6 million primarily for manufacturing upgrades and leasehold improvements through December 31, 2020. The change in cash used for investing activities in 2019 is the result of $72.3 million in investments purchases offset by $85.6 million of sales and maturities and property plant and equipment purchases of $2.6 million, primarily for manufacturing upgrades and leasehold improvements through December 31, 2019.

The change in cash provided from financing activities is the result of net proceeds from the exercise of stock options of $6.6 million through December 31, 2020. The change in cash provided from financing activities during the year ended December 31, 2019 compared to the prior period is primarily the result of net proceeds from the exercise of stock options of $5.3 million through December 31, 2019.

We believe that our current cash on hand, cash equivalents and investments will be sufficient to support our current operations through at least 12 months from the issuance of the consolidated financial statements included in this Annual Report on Form 10-K. However, the continuing effects of the COVID-19 pandemic continue to evolve and may result in irrecoverable losses from customers.

If revenues decline for a sustained period, we may need to access additional capital; however, we may not be able to obtain financing on acceptable terms or at all. Market volatility resulting from the COVID-19 pandemic or other factors could also adversely impact our ability to access financing as and when needed. The terms of any financing may adversely affect the holdings or the rights of our shareholders. Actual cash requirements may differ from projections and will depend on many factors, including the ultimate duration of the effects of the COVID-19 pandemic, the level of future research and development, the scope and results of ongoing and potential clinical trials, the costs involved in filing, prosecuting and enforcing patents, the need for additional manufacturing capacity, competing technological and market developments, costs of possible acquisition or development of complementary business activities, and the cost to market our products.

Contractual Obligations

We lease facilities in Ann Arbor, Michigan and Cambridge, Massachusetts. The Cambridge facility includes clean rooms, laboratories for MACI and Epicel manufacturing and office space. We also pay for use of an offsite warehouse space and lease various vehicles and computer equipment.

In October 2020, we amended our current lease in Cambridge to, among other provisions, extend the term until February 2032. Under the amendment, the landlord will contribute $4.3 million toward the cost of tenant improvements. The previous contributions toward the cost of tenant improvements was recorded as part of the operating lease assets under the leasing guidance, on our consolidated balance sheet.

Our purchase commitments consist of minimum purchase amounts of materials used in our cell manufacturing process to manufacture our marketed cell therapy products. Future minimum payments related to our contractual obligations are as follows:

		Payments Due by Period					
Contractual Obligations (in thousands)	**Total**	**2021**	**2022**	**2023**	**2024**	**2025**	**More than 5 Years**
Operating leases	$ 72,325	$ 4,394	$ 4,177	$ 6,973	$ 6,934	$ 6,340	$ 43,507
Purchase commitments	7,864	7,182	682	—	—	—	—
Capital leases	123	41	41	41	—	—	—
Total	$ 80,312	$ 11,617	$ 4,900	$ 7,014	$ 6,934	$ 6,340	$ 43,507

Critical Accounting Policies and Estimates

The preparation of our Consolidated Financial Statements in accordance with U.S. generally accepted accounting principles (GAAP) requires management to make estimates and assumptions that could materially impact the Consolidated Financial Statements and disclosures based on varying assumptions. We believe our estimates and assumptions are reasonable; however, actual results and the timing of the recognition of such amounts could differ from these estimates.

The following is a list of accounting policies that are most significant to the portrayal of our financial condition and results of operations and/or that require management's most difficult, subjective or complex judgments.

Revenue Recognition and Net Product Sales — Revenue from sales to a customer (distributor, hospital or other party) is recognized in accordance with ASC 606, *Revenue Recognition*, which was adopted January 1, 2018. We recognize product revenue from sales to a customer (distributor or hospital) following the five step model in ASC 606: (i) identify contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenues when (or as) we satisfy the

performance obligation. Under this revenue standard, we recognize revenue when our customer obtains control of the promised goods, in an amount that reflects the consideration which we expect to receive in exchange for those goods.

MACI Implants

We have engaged a third-party services provider to provide the patient support program to manage patient cases and to ensure complete and accurate billing information is provided to the insurers and hospitals, to facilitate reimbursement.

Prior authorization and confirmation of coverage level by the patient's private insurance plan, hospital or government payer is a prerequisite to the shipment of product to a patient. We recognize product revenues from sales of all MACI implants upon delivery at which time the customer obtains control of the implant and the claim is billable. The total consideration which we expect to collect in exchange for MACI implants (the transaction price) may be fixed or variable. Direct sales to hospitals or distributors are recorded at a contracted price, there are typically no forms of variable consideration.

When we sell MACI the patient is responsible for payment; however, we are typically reimbursed by a third-party insurer or government payer, subject to a patient co-pay amount. Reimbursements from third-party insurers and government payers vary by patient and payer and are based on either contracted rates, publicly available rates or a fee schedule. Net product revenue is recognized net of estimated contractual allowances, which considers historical collection experience from both the payer and patient, denial rates and the terms of our contractual arrangements. We estimate expected collections for these transactions using the portfolio approach. We record a reduction to revenue at the time of sale for the estimate of the amount of consideration that will not be collected. In addition, potential credit risk exposure has been evaluated for our accounts receivable in accordance with *ASC 326, Financial Instruments - Credit Losses*. We assess risk and determine a loss percentage by pooling account receivables based on similar risk characteristics. The loss percentage is calculated through the use of forecasts that are based on current and historical economic and financial information.

Changes in estimates of the transaction price are recorded through revenue in the period in which such change occurs.

Leases — We primarily enter into lease agreements for manufacturing and office space, warehouses space, vehicle and computer equipment. The leases have varying terms, some of which may include options to extend. We determine if an arrangement is a lease at contract inception. Certain of our lease agreements include lease payments that are adjusted periodically for an index or rate. The leases are initially measured using the present value of the projected payments adjusted for the index or rate in effect at the commencement date such as an estimated incremental borrowing rate. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants. All operating lease commitments with a lease term greater than 12 months are recognized as right to use (ROU) assets and liabilities, on a discounted basis on the balance sheet.

ROU assets represent our right to control the use of an explicitly or implicitly identified fixed asset for a period of time and lease liabilities represent our obligation to make lease payments arising from the lease. Control of an underlying asset is conveyed to us if we obtain the rights to direct the use of and to obtain substantially all of the economic benefits from using the underlying asset.

Lease payments included in the measurement of the lease liability are comprised of fixed payments. Our leases contain non-lease components and activities that do not transfer a good or service to us which were not considered to be components of the contract and therefore were not included in the net ROU assets or lease liabilities.

The lease term for all of our leases include the non-cancellable period of the lease plus any additional periods covered by either an option to extend (or not to terminate) the lease that is reasonably certain to exercise, or an option to extend (or not to terminate) the lease controlled by the lessor.

Stock-Based Compensation — The accounting for stock-based compensation requires us to determine the fair value of common stock issued in the form of stock option awards and restricted stock units. The fair value of restricted stock units held by the employees is determined based on the fair value of our common stock on the date of the grant. We use the value of our common stock at the date of the grant in the calculation of the fair value of our share-based awards. The fair value of stock options held by our employees is determined using a Black-Scholes option valuation method, which is a valuation technique that is acceptable for share-based payment accounting. Key assumptions in determining fair value include volatility, risk-free interest rate, dividend yield and expected term. The assumptions used in calculating the fair value of stock options represent our best estimates; however, these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and different assumptions are used, the stock-based compensation expense could be materially different in the future. In addition, we are required to estimate the expected forfeiture rate and only recognize expense for those stock

options expected to vest over the service period. We estimate the forfeiture rate considering the historical experience of our stock-based awards. If the actual forfeiture rate is different from the estimate, we adjust the expense accordingly.

Tax Valuation Allowance — A valuation allowance is recorded if it is more likely than not that a deferred tax asset will not be realized. We provided a full valuation allowance on our deferred tax assets that primarily consist of cumulative federal net operating losses. Due to our three year cumulative loss position and history of operating losses prior to the year-ended December 31, 2020, a full valuation allowance against our net deferred tax assets was considered necessary. We will continue to monitor our cumulative loss position and forecasts and reevaluate the need for a valuation allowance as it could be reversed in future periods.

The summary of significant accounting policies should be read in conjunction with our Consolidated Financial Statements and related notes and this discussion of our results of operations.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements that have or are reasonably likely to have a material effect on our financial condition.

Recent Accounting Pronouncements

See note 3 to the Consolidated Financial Statements.

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

During the year ended December 31, 2020, we purchased marketable debt securities, which are classified as available-for-sale and carried at fair value in the accompanying consolidated balance sheet included in this Annual Report on Form 10-K. The fair value of our cash equivalents and marketable securities is subject to changes in market interest rates. Our earnings and cash flows are subject to fluctuations due to changes in interest rates, principally in connection with our investments in marketable debt securities. We do not believe we are materially exposed to changes in interest rates related to our investments, and we do not currently use interest rate derivative instruments or hedging transactions to manage exposure to interest rate changes of our investments. We estimate that a 100 basis point, or 1%, unfavorable change in interest rates would have resulted in approximately a $0.5 million and $0.3 million decrease in the fair value of our investment portfolio as of December 31, 2020 and 2019, respectively.

We have evaluated the potential credit risk exposure for our accounts receivable and available-for sale investment securities in accordance with *ASC 326, Financial Instruments - Credit Losses.* See note 4 and note 8, for further discussion.

We operate in the United States only. We are primarily exposed to foreign exchange risk with respect to recognized assets and liabilities due to vendors in countries outside the United States which are typically paid in Euro. We do not enter into hedging transactions and do not purchase derivative instruments.

Item 8. ***Consolidated Financial Statements and Supplementary Data***

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Vericel Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Vericel Corporation and its subsidiaries (the "Company") as of December 31, 2020 and 2019, and the related consolidated statements of operations, comprehensive income (loss), shareholders' equity and cash flows for each of the three years in the period ended December 31, 2020, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2020 and 2019, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2020 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2020, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Contractual allowances related to MACI sales subject to third party reimbursement

As described in Note 4 to the consolidated financial statements, when the Company sells MACI to patients, the Company records a reduction of revenue at the time of sale for its estimate of the amount of consideration that will not be collected. As of December 31, 2020, the allowance for this uncollectible consideration was $5.3 million. When the Company sells MACI the patient is responsible for payment, however, the Company is typically reimbursed by a third-party insurer or government payer, subject to a patient co-pay amount. Reimbursements from third-party insurers and government payers vary by patient and payer and are based on either contracted rates, publicly available rates, fee schedules or past payer precedents. Net product revenue is recognized net of estimated contractual allowances, which considers historical collection experience from both the payer and patient, denial rates and the terms of the Company's contractual arrangements.

The principal considerations for our determination that performing procedures relating to contractual allowances related to MACI sales subject to third party reimbursement is a critical audit matter are the significant judgment by management due to the measurement uncertainty involved in developing the estimated contractual allowances, as these estimates are based on assumptions developed using historical collection experience from the payer and current contractual arrangement terms, which in turn led to a high degree of auditor judgment, effort and subjectivity in applying procedures to these assumptions and evaluating audit evidence related to these assumptions.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to revenue recognition, including controls relating to MACI sales subject to third party reimbursement and over the assumptions used to estimate the contractual allowance. These procedures also included, among others, (i) testing management's process and methodology for determining the contractual allowances; (ii) performing an analysis of the past collection history by payer; and (iii) assessing the reasonableness of management's contractual allowances. Evaluating the reasonableness of management's contractual allowances involved assessing management's ability to reasonably estimate the contractual allowance by performing a comparison of the estimated transaction price to actual consideration received, contracted rates, publicly available rates or government fee schedules.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts
February 24, 2021

We have served as the Company's auditor since at least 1996, which is when the Company became subject to SEC reporting requirements. We have not been able to determine the specific year we began serving as auditor of the Company.

VERICEL CORPORATION
CONSOLIDATED BALANCE SHEETS
(In thousands)

	December 31,	
	2020	2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 33,620	$ 26,889
Short-term investments	42,187	42,829
Accounts receivable (net of allowance for doubtful accounts of $143 and $306, respectively)	34,504	32,168
Inventory	9,356	6,816
Other current assets	3,893	2,953
Total current assets	123,560	111,655
Property and equipment, net	7,633	7,144
Restricted cash	211	89
Right-of-use assets	50,105	25,103
Long-term investments	24,099	9,247
Total assets	$ 205,608	$ 153,238
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,755	$ 6,345
Accrued expenses	11,293	7,948
Current portion of operating lease liabilities	4,394	5,461
Other liabilities	41	41
Total current liabilities	22,483	19,795
Operating lease liabilities	48,789	22,242
Other long-term liabilities	76	110
Total liabilities	71,348	42,147
COMMITMENTS AND CONTINGENCIES		
Shareholders' equity:		
Common stock, no par value; shares authorized — 75,000; shares issued and outstanding — 45,804 and 44,864, respectively	510,061	489,749
Accumulated other comprehensive income	14	21
Accumulated deficit	(375,815)	(378,679)
Total shareholders' equity	134,260	111,091
Total liabilities and shareholders' equity	$ 205,608	$ 153,238

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

VERICEL CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(In thousands, except per share amounts)

	Year Ended December 31,		
	2020	2019	2018
Product sales, net	$ 121,968	$ 117,850	$ 90,857
Other revenue	2,211	—	—
Total revenue	124,179	117,850	90,857
Cost of product sales	39,951	37,571	32,160
Gross profit	84,228	80,279	58,697
Research and development	13,020	30,391	13,599
Selling, general and administrative	68,836	61,139	49,007
Total operating expenses	81,856	91,530	62,606
Income (loss) from operations	2,372	(11,251)	(3,909)
Other income (expense):			
Increase in fair value of warrants	—	—	(2,524)
Loss on extinguishment of debt	—	—	(838)
Interest income	691	1,614	897
Interest expense	(6)	(8)	(1,732)
Other expense	(13)	(20)	(31)
Total other income (expense)	672	1,586	(4,228)
Net income (loss) before tax provision	3,044	(9,665)	(8,137)
Tax provision	180	—	—
Net income (loss)	$ 2,864	$ (9,665)	$ (8,137)
Net income (loss) per share attributable to common shareholders (basic)	$ 0.06	$ (0.22)	$ (0.20)
Weighted-average common shares outstanding (basic)	45,221	44,180	40,242
Net income (loss) per share attributable to common shareholders (diluted)	$ 0.06	$ (0.22)	$ (0.20)
Weighted-average common shares outstanding (diluted)	47,282	44,180	40,242

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

VERICEL CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(In thousands)

	Year Ended December 31,		
	2020	**2019**	**2018**
Net income (loss)	$ 2,864	$ (9,665)	$ (8,137)
Other comprehensive income (loss):			
Unrealized gain (loss) on investments	(7)	60	(39)
Comprehensive income (loss)	$ 2,857	$ (9,605)	$ (8,176)

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

VERICEL CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(In thousands)

	Common Stock		Warrants	Accumulated Other Comprehensive	Accumulated	Total Shareholders'
	Shares	Amount	Amount	Gain (loss)	Deficit	Equity
BALANCE, DECEMBER 31, 2017	35,861	$ 383,020	$ 397	$ —	$ (360,877)	$ 22,540
Net loss					(8,137)	(8,137)
Compensation expense related to stock options granted, net of forfeitures		7,223				7,223
Issuance of common stock, net of issuance costs of $4.7	5,750	70,028				70,028
Stock option exercises	1,180	3,705				3,705
Shares issued under the Employee Stock Purchase Plan	106	656				656
Exercise of warrants resulting in the issuance of common stock	681	6,548	(293)			6,255
Unrealized loss on investments				(39)		(39)
BALANCE, DECEMBER 31, 2018	43,578	$ 471,180	104	$ (39)	$ (369,014)	$ 102,231
Net loss					(9,665)	(9,665)
Compensation expense related to stock options granted, net of forfeitures		13,179				13,179
Stock option exercises	1,197	4,354				4,354
Shares issued under the Employee Stock Purchase Plan	69	932				932
Exercise of warrants resulting in issuance of common stock	20	104	(104)			—
Unrealized gain on investments				60		60
BALANCE, DECEMBER 31, 2019	44,864	$ 489,749	—	$ 21	$ (378,679)	$ 111,091
Net income					2,864	2,864
Compensation expense related to stock options granted, net of forfeitures		13,843				13,843
Stock option exercises	790	5,582				5,582
Shares issued under the Employee Stock Purchase Plan	117	1,050				1,050
Issuance of stock for restricted stock unit vesting	47					—
Restricted stock withheld for employee taxes	(14)	(163)				(163)
Unrealized loss on investments				(7)		(7)
BALANCE, DECEMBER 31, 2020	45,804	$ 510,061	—	$ 14	$ (375,815)	$ 134,260

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

VERICEL CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2020	2019	2018
Operating activities:			
Net income (loss)	$ 2,864	$ (9,665)	$ (8,137)
Adjustments to reconcile net income (loss) to net cash provided by (used for) operating activities:			
Depreciation and amortization	2,383	1,744	1,426
Stock compensation expense	13,843	13,179	7,223
Change in fair value of warrants	—	—	2,524
Loss on extinguishment of debt	—	—	838
Foreign currency translation loss	63	42	51
Loss on sale of fixed assets	30	—	22
Amortization of premiums and discounts on marketable securities	318	(610)	(327)
Non-cash lease cost	4,445	2,787	—
Changes in operating assets and liabilities:			
Inventory	(2,540)	(3,258)	235
Accounts receivable	(2,336)	(8,714)	(5,184)
Other current assets	(940)	(106)	(1,267)
Accounts payable	33	(1,024)	899
Accrued expenses	3,345	1,018	1,493
Operating lease liabilities	(3,951)	(2,512)	—
Other non-current assets and liabilities, net	15	(64)	(208)
Net cash provided by (used for) operating activities	17,572	(7,183)	(412)
Investing activities:			
Purchases of investments	(63,057)	(72,346)	(66,549)
Sales and maturities of investments	48,523	85,577	2,200
Expenditures for property, plant and equipment	(2,626)	(2,616)	(2,678)
Net cash provided by (used for) investing activities	(17,160)	10,615	(67,027)
Financing activities:			
Net proceeds from equity offering	—	—	70,028
Net proceeds from common stock issuance due to stock option exercises	6,632	5,286	4,361
Proceeds from exercise of warrants	—	—	2,716
Payments on long-term debt	—	—	(17,532)
Fee on long-term debt	—	—	(710)
Other	(191)	(26)	—
Net cash provided by financing activities	6,441	5,260	58,863
Net increase (decrease) in cash, cash equivalents, and restricted cash	6,853	8,692	(8,576)
Cash, cash equivalents, and restricted cash at beginning of period	26,978	18,286	26,862
Cash, cash equivalents, and restricted cash at end of period	$ 33,831	$ 26,978	$ 18,286

The accompanying Notes to Consolidated Financial Statements are an integral part of these statements.

VERICEL CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Organization

Vericel Corporation, a Michigan corporation (together with its consolidated subsidiaries referred to herein as the Company, or Vericel), was incorporated in March 1989 and began employee-based operations in 1991. The Company is a fully-integrated, commercial-stage biopharmaceutical company and is a leader in advanced therapies for the sports medicine and severe burn care markets. Vericel currently markets two cell therapy products in the United States, MACI® and Epicel®.

MACI (autologous cultured chondrocytes on porcine collagen membrane) is an autologous cellularized scaffold product indicated for the repair of symptomatic, single or multiple full-thickness cartilage defects of the knee with or without bone involvement in adults. Epicel (cultured epidermal autografts) is a permanent skin replacement for the treatment of adult and pediatric patients with deep-dermal or full-thickness burns comprising greater than or equal to 30 percent of total body surface area (TBSA). The Company also holds an exclusive license from MediWound Ltd. (MediWound) for North American rights to NexoBrid®, a registration-stage biological orphan product for debridement of severe thermal burns. The Company operates its business primarily in the U.S. in one reportable segment — the research, product development, manufacture and distribution of cellular therapies for use in the treatment of specific diseases.

COVID-19

Throughout 2020, the pandemic caused by the spread of a novel strain of coronavirus (COVID-19) has created significant disruptions to the U.S. and global economy and has contributed to significant volatility in financial markets. The global impact of the outbreak is continually evolving and, as the virus spreads and infection rates surge in various locations, many state, local and national governments – including those in Massachusetts and Michigan, where the Company's operations are located – have responded by issuing, extending and supplementing orders requiring quarantines, restrictions on travel, and the mandatory closure of certain non-essential businesses, among other actions. In the U.S., the status and application of these orders have varied on a state-by-state basis since the early days of the pandemic. Many of the restrictions have been periodically updated as infections rates in the U.S. have risen and fallen and as world health leaders learn more about the virus, its transmission pathway and who is most at risk. Because Vericel is deemed an essential business, the Company has been exempted from government orders requiring the closure of workplaces and the cessation of business operations, as they have existed from time-to-time during the pandemic.

Notwithstanding being an essential business, the Company’s business and operations have been adversely impacted by the effects of COVID-19. In mid-March, the American College of Surgeons and United States Surgeon General recommended that each hospital, health system, and surgeon minimize, postpone, or cancel electively scheduled surgeries. These recommendations were followed by numerous state level executive orders either restricting or partially restricting elective surgeries. Because MACI is an elective surgical procedure, as a result of these restrictions, beginning in mid-March 2020, the Company began to experience a significant increase in cancellations of scheduled MACI procedures as well as a slowdown in new MACI orders. The widespread suspension of elective procedures impacted the Company’s business and operations during the first and second quarters of 2020. These restrictions began to ease in May and, by the end of September 2020, there were no state orders in place that directly impacted a surgeon’s or patient’s ability to move forward with a MACI surgery. However, in late September and October 2020, the number of COVID-19 infections began to increase markedly in various geographies and by late December 2020 the rolling seven-day average of new daily coronavirus cases in the United States reached the highest level at any point during the pandemic. Because Epicel is used almost exclusively in the emergent setting by burn centers and surgeons throughout the country, Epicel revenue and procedure volumes have been less affected by the pandemic. Although hospitals are now better prepared for a subsequent surge in COVID-19 patients, the risk remains that regional or local restrictions could again be placed on the performance of elective surgical procedures if the number of COVID-19 infections in the United States continues to rise.

At the outset of the pandemic, the Company put in place a comprehensive workplace protection plan, which institutes protective measures in response to COVID-19. These measures include mandatory employee training on social distancing and hygiene protocols, conducting daily health screenings of all employees, vendors and visitors entering our facilities, canceling all international business travel, limiting domestic business travel to essential purposes, requesting that employees limit non-essential personal travel, enhancing our facilities’ janitorial and sanitary procedures, making certain physical modifications and enhancements to our facilities to enable effective social distancing among employees, providing certain personal protective equipment to employees working in our offices, encouraging employees to work from home to the extent their job function

enables them to do so, limiting third-party access to the Company's facilities, encouraging the use of virtual employee meetings, modifying the manner and schedule of on-site production activities, and providing guidance to our field-based commercial teams concerning their communications and contact with customers and healthcare professionals. In addition, we put certain expense reduction measures in place including a reduction of discretionary spending. The Company is reviewing these measures regularly as the pandemic evolves and may take additional actions to the extent required.

The accompanying Consolidated Financial Statements have been prepared on a basis which assumes that the Company will continue as a going concern and contemplates the realization of assets and satisfaction of liabilities and commitments in the normal course of business. As of December 31, 2020, the Company had an accumulated deficit of $375.8 million and had net income of $2.9 million for the year ended December 31, 2020. The Company had cash and cash equivalents of $33.6 million and investments of $66.3 million as of December 31, 2020. The Company expects that cash from the sales of our products and existing cash, cash equivalents and investments will be sufficient to support the Company's current operations through at least 12 months from the issuance of the Consolidated Financial Statements. However, the effects of the COVID-19 pandemic continue to evolve and may result in irrecoverable losses of customers and significantly impact long-term liquidity requiring the Company to engage in layoffs, furloughs and/or reductions in salaries. To the extent the United States experiences a resurgence in COVID-19 infections and elective surgery restrictions are reinstated on a widespread basis and significantly impact the Company's business, the Company may need to access additional capital; however, the Company may not be able to obtain financing on acceptable terms or at all, particularly in light of the impact of COVID-19 on the global economy and financial markets. The terms of any financing may adversely affect the holdings or the rights of the Company's shareholders.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The Consolidated Financial Statements include the accounts of Vericel and its wholly-owned subsidiaries, Vericel Denmark ApS, in Kastrup, Demark and Vericel Security Corporation (collectively, the Company). All inter-company transactions and accounts have been eliminated in consolidation. Vericel Denmark ApS ceased operations in 2015.

Use of Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the Consolidated Financial Statements and the reported amounts of expenses during the reported period. The Company is monitoring the potential impact of the COVID-19 pandemic on its business and financial statements. The Company is not aware of any specific event or circumstance that would require an update to its estimates or judgments reflected in these financial statements or a revision of the carrying value of its assets or liabilities as of the issuance of these financial statements. These estimates may change as new events occur and additional information is obtained. Actual results could differ from those estimates.

Consolidated Statement of Cash Flows

The following table presents certain supplementary cash flows information for the years ended December 31, 2020, 2019 and 2018:

	Year Ended December 31,		
(In thousands)	**2020**	**2019**	**2018**
Supplementary Cash Flows information:			
Non-cash information:			
Warrants exercised for common stock	$ —	$ 104	$ 3,538
Right-of-use asset and lease liability recognized	29,573	2,599	—
Additions to property and equipment included in accounts payable	531	217	606
Cash information:			
Interest paid (net of interest capitalized)	$ 6	$ 8	$ 2,230

(In thousands)	Year Ended December 31, 2020	2019	2018
Reconciliation of cash, cash equivalents, and restricted cash reported in the statement of financial position:			
Cash and cash equivalents	$ 33,620	$ 26,889	$ 18,286
Restricted cash, included in other long-term assets	211	89	—
Total cash, cash equivalents, and restricted cash shown in the statement of cash flows	$ 33,831	$ 26,978	$ 18,286

Cash Equivalents

Cash equivalents consist of short-term, highly liquid investments with original maturities of three months or less from the date of purchase and consist primarily of demand deposits, money market funds, overnight repurchase agreements and short duration agency bonds and commercial paper.

Restricted cash

Amounts included in restricted cash represent those required to be set aside to meet contractual terms of a lease agreement held by the Company.

Investments

Investments classified as short-term have maturities of less than one year. Investments classified as long-term are those that: (i) have a maturity of greater than one year, and (ii) we do not intend to liquidate within the next twelve months, although these funds are available for use and, therefore, are classified as available-for-sale. The Company's investment strategy is to buy short-duration marketable securities with a high credit rating. As of December 31, 2020 and 2019, all marketable securities held by the Company had remaining contractual maturities of three years or less.

Unrealized gains are included as a component of accumulated other comprehensive income in the consolidated balance sheets and statements of stockholders' equity and a component of total comprehensive income (loss) in the consolidated statements of comprehensive income (loss), until realized. Unrealized losses are evaluated for impairment under *ASC 326, Financial Instruments - Credit Losses*, to determine if the impairment is credit-related or non credit-related. Credit-related impairment is recognized as an allowance on the balance sheet with a corresponding adjustment to earnings, and non credit-related impairment is recognized in other comprehensive income (loss), net of taxes.

Inventory

Inventories are measured at the lower of cost or net realizable value. Cost is calculated based upon standard-cost which approximates costs determined on the first-in, first-out method. The Company periodically reviews its inventories for excess or obsolescence and writes down obsolete or other unmarketable inventory to its estimated net realizable value. If the actual net realizable value is less than that estimated by the Company, or if it is determined that inventory utilization will further diminish based on estimates of demand, additional inventory write-downs may be required. In all cases, product inventory is carried at the lower of cost or its estimated net realizable value. Amounts written down are charged to cost of sales.

Leases

The Company adopted the new leasing standards using the modified retrospective transition approach, as of January 1, 2019, with no restatement of prior periods. Upon adoption all operating lease commitments with a lease term greater than 12 months that were previously assessed under the prior lease guidance, were recognized as right-of-use assets and liabilities, on a discounted basis on the balance sheet. Leases with an initial term of 12 months or less are not recorded on the balance sheet.

Certain lease agreements include rental payments that are adjusted periodically for inflation or other variables. The leases are initially measured using the projected payments adjusted for the index or rate in effect at the commencement date. In addition to rent, the leases may require the Company to pay additional amounts for taxes, insurance, maintenance and other expenses, which are generally referred to as non-lease components. Variable non-lease components are not measured as part of the right-of-use asset and liability. Only when lease components and their associated non-lease components are fixed are they accounted for as a single lease component and are recognized as part of a right-of-use asset and liability.

Some leases contain clauses for renewal at the Company's option with renewal terms that generally extend the lease term from 1 to 5 years. Certain lease agreements contain options to purchase the leased property and options to terminate the lease. Payments to be made in option periods are recognized as part of the right-of-use lease assets and lease liabilities when it is reasonably certain that the option to extend the lease will be exercised or the option to terminate the lease will not be exercised, or is not at the Company's option. The Company determines whether the reasonably certain threshold is met by considering contract-, asset-, market-, and entity-based factors.

A portfolio approach is applied to certain lease contracts with similar characteristics. The Company's lease agreements do not contain any significant residual value guarantees or material restrictive covenants imposed by the leases.

Accounts Receivable

Accounts receivable are initially recorded at the contractual amount owed by the customer or based on expected payments from the insurance provider, hospital or patient. Allowances for doubtful accounts are established when the facts and circumstances indicate that a receivable may not be collectible. Potential credit risk exposure has been evaluated for the Company's accounts receivable in accordance with *ASC 326, Financial Instruments - Credit Losses.* The Company assesses risk and determines a loss percentage by pooling account receivables based on similar risk characteristics. The loss percentage is calculated through the use of forecasts that are based on current and historical economic and financial information.

Property, Plant and Equipment

Property, plant and equipment are initially measured and recognized at acquisition cost, including any directly attributable cost of preparing the asset for its intended use or, in the case of assets acquired in a business combination, at fair value as at the date of the combination. After initial measurement, property, plant and equipment are carried at cost less accumulated depreciation and impairment. Repair and maintenance costs of property, plant and equipment are expensed as incurred.

The depreciable value of property, plant and equipment, net of any residual value, is depreciated on a straight line basis over the useful life of the asset. The useful life of an asset is usually equivalent to its economic life. The useful lives of property, plant and equipment are as follows:

- Machinery and Equipment: 5 years
- Furniture, fixtures, and office equipment: 3 to 5 years
- Computer equipment and software: 3 years
- Building improvements and leasehold improvements: Shorter of the remaining life of the lease or 10 years

The costs of assets retired or otherwise disposed of and the accumulated depreciation thereon are removed from the accounts, with any gain or loss realized upon sale or disposal credited or charged to operations.

Revenue Recognition and Net Product Sales

MACI, MACI Biopsy Kits, Epicel and NexoBrid

The Company recognizes product revenue from sales to a customer (whether a distributor, or hospital) following the five step model in ASC 606: (i) identify contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenues when (or as) the Company satisfies the performance obligation. Under this revenue standard, the Company recognizes revenue when its customer obtains control of the promised goods, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods. There are no contractual rights of returns, refunds or similar obligations related to MACI, kits, Epicel or NexoBrid as of December 31, 2020; however, in certain limited cases the Company will accept a product return if a surgery is canceled. Revenue is not recognized in certain canceled cases.

For MACI, MACI kits and Epicel there are no variable pricing arrangements related to warranties or rebates offered to customers. The majority of orders are due within 60 to 90 days of delivery. Shipping and handling fees are included as a component of revenue. The Company recognizes any commission fees as an expense when incurred. These fees are included in selling, general, and administrative expenses.

NexoBrid

The U.S. Biomedical Advanced Research and Development Authority (BARDA) has committed to procure NexoBrid from MediWound, under which MediWound will manufacture and supply NexoBrid on a unit price basis, which may be increased pursuant to the terms of the agreement. The Company does not hold a direct contract or distribution agreement with BARDA, or take title to the product. The Company recognizes income from sales of NexoBrid to BARDA upon delivery, at which time BARDA is in control of the product. The Company does not control the specified goods or services before they are transferred to the customer. MediWound has promised to provide the goods to BARDA and has completed all significant compliance aspects of being a contractor for BARDA and continue to be responsible for all compliance. The Company records the NexoBrid revenue based on a specified percentage of the gross profit MediWound recognizes on the sale in accordance with the license agreement.

Research and Development Expense

Research and development activities represent a significant part of the Company's business. These expenditures relate to the development of new products, improvement of existing products, technical support of products and compliance with governmental regulations for the protection of consumers and patients. Research and development expenses are expensed as incurred.

Stock-Based Compensation

The Company's accounting for stock-based compensation requires it to determine the fair value of common stock issued in the form of stock option awards and restricted stock units. The Company uses the value of its common stock at the date of the grant in the calculation of the fair value of its share-based awards. The fair value of restricted stock units held by the employees is determined based on the fair value of the Company's common stock on the date of the grant. The fair value of stock options held by the employees is determined using a Black-Scholes option valuation method, which is a valuation technique that is acceptable for share-based payment accounting. Key assumptions in determining fair value include volatility, risk-free interest rate, dividend yield and expected term. The assumptions used in calculating the fair value of stock options represent the Company's best estimates; however, these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and different assumptions are used, the stock-based compensation expense could be materially different in the future. In addition, the Company estimates the expected forfeiture rate and only recognize expense for those stock options expected to vest over the service period. The estimated forfeiture rate considers the historical experience of the Company's stock-based awards. If the actual forfeiture rate is different from the estimate, expense is adjusted accordingly. For certain non-employee consultants, stock option awards continue to vest post-termination.

The Company also has an Employee Stock Purchase Plan (ESPP) which is a compensatory plan. Compensation expense is recorded based on the fair value of the purchase options at the grant date, which corresponds to the first day of each purchase period, and is amortized over the purchase period.

Comprehensive Loss

Comprehensive loss is the change in stockholders' equity during a period arising from any gain or loss unrealized related to the Company's investments.

Income Taxes

Deferred tax assets are recognized for deductible temporary differences and tax credit carryforwards and deferred tax liabilities are recognized for taxable temporary differences. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized based on the weight of available evidence, that a portion or all of the deferred tax assets will not be realized. When evaluating the realizability of the deferred tax assets, all evidence, both positive and negative, is considered. Items considered when evaluating the need for a valuation allowance include the ability to carry back losses, future reversals of existing temporary differences, tax planning strategies, and expectations of future earnings.

The Company records uncertain tax positions in the consolidated financial statements only if it is more likely than not that the uncertain tax position will be sustained upon examination by the taxing authorities. The Company records interest and penalties related to uncertain tax positions in income tax expense.

Net Income (Loss) Per Share Attributable to Common Shareholders

Basic and diluted earnings (loss) per share is calculated using the two-class method. Basic earnings (loss) per share which is based on an earnings allocation formula that determines earnings (loss) per share for the holders of the Company's common shares. There were no undeclared dividends for the year ended December 31, 2020 or 2019. Diluted earnings (loss) per share includes convertible securities or common equivalent share (stock options and warrants) in addition to the Company's common shares. Common equivalent shares and treasury stock are not included in the diluted per share calculation where the effect of their inclusion would be anti-dilutive.

Financial Instruments

The Company's financial instruments include receivables for which the current carrying amounts approximate market value, based upon their short-term nature and marketable debt securities which are classified as available-for-sale and carried at fair value on a settlement date basis.

Warrants

Warrants that could be cash settled or have anti-dilution price protection provisions are recorded as liabilities at their estimated fair value at the date of issuance, with subsequent changes in estimated fair value recorded in other income (expense) in our statement of operations in each subsequent period. Warrants that meet the requirements for equity classification are recorded at fair value with no subsequent remeasurement. In general, warrants are measured using the Black-Scholes valuation model. The methodology is based, in part, upon inputs for which there is little or no observable market data, requiring the Company to develop its own assumptions. The assumptions used in calculating the estimated fair value of the warrants represent our best estimates; however, these estimates involve inherent uncertainties and the application of management judgment. As a result, if factors change and different assumptions are used, the change in estimated fair value of the warrant liability for those warrants that could be cash settled or have anti-dilution price protection provisions, could be materially different. As of December 31, 2019 and 2020, there were no outstanding warrants.

3. Recent Accounting Pronouncements

Measuring Credit Losses on Financial Instruments

The FASB issued updated guidance on measuring credit losses on financial instruments. The guidance removes the thresholds that companies apply to measure credit losses on financial instruments measured at amortized cost, such as loans, receivables, and held-to-maturity debt securities. Prior to the updated guidance, credit losses were recognized when it was probable that the loss had been incurred. The revised guidance removes all recognition thresholds and requires companies to recognize an allowance for credit losses for the difference between the amortized cost basis of a financial instrument and the amount of amortized cost that a company expected to collect over the instrument's contractual life. The Accounting Standard Update (ASU) 2016-13, *Financial Instruments-Credit Losses (Topic 326)*, became effective for the Company January 1, 2020. See note 4 and note 8 for further discussion.

Fair Value Measurement Disclosure

The FASB issued updated guidance through ASU 2018-13, *Fair Value Measurement (Topic 820) Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement.* The revised guidance created a more consistent disclosure framework that increased clarity and removed, modified and added certain fair value disclosures to improve the effectiveness of the Company's disclosures in the notes of the Consolidated Financial Statements. This guidance became effective for the Company January 1, 2020 and had no impact on its Consolidated Financial Statements.

Simplifying the Accounting for Income Taxes

In December 2019, the FASB issued ASU 2019-12, *Simplifying the Accounting for Income Taxes* (ASC 740). The ASU enhances and simplifies various aspects of the income tax accounting guidance in ASC 740, including requirements related to hybrid tax regimes, the tax basis step-up in goodwill obtained in a transaction that is not a business combination, separate financial statements of entities not subject to tax, the intra-period tax allocation exception to the incremental approach, ownership changes in investments, changes from a subsidiary to an equity method investment, interim-period accounting for enacted changes in tax law, and the year-to-date loss limitation in interim-period tax accounting. This guidance is effective for the Company for annual and interim periods beginning after December 31, 2020; however, early adoption is permitted. The Company is currently in the process of evaluating the impact on its Consolidated Financial Statements.

4. Revenue

Revenue Recognition and Net Product Sales

As disclosed in note 2, the Company recognizes product revenue from sales of MACI biopsy kits, MACI implants, Epicel grafts and other sources following the five-step model in Accounting Standards Codification 606, *Revenue Recognition*, (ASC 606).

MACI Biopsy Kits

MACI biopsy kits are sold directly to hospitals based on contracted rates in an approved contract or sales order. The Company recognizes MACI kit revenue upon delivery of the biopsy kit, at which time the customer (the facility) is in control of the kit. The kit is used by the doctor to provide a sample of cartilage tissue to the Company, which can later be used to manufacture a MACI implant. The ordering of the kit does not obligate the Company to manufacture an implant nor does the receipt of the cartilage tissue. The customer's order of an implant is separate from the process of ordering the biopsy kit. Therefore, the sale of the biopsy kit and any subsequent sale of an implant are distinct contracts and are accounted for separately.

MACI Implants

The Company contracts with two specialty pharmacies, Orsini Pharmaceutical Services, Inc. (Orsini) and AllCare Plus Pharmacy, Inc. (AllCare) to distribute MACI in a manner in which the Company retains the credit and collection risk from the end customer. The Company pays both specialty pharmacies a fee for each patient to whom MACI is dispensed. Both Orsini and AllCare perform collection activities to collect payment from customers. The Company has engaged a third-party to provide services in connection with a patient support program to manage patient cases and to ensure complete and correct billing information is provided to the insurers and hospitals. In addition, the Company also sells MACI directly to DMS Pharmaceutical (DMS) for military patients. The sales directly to DMS are made at a contracted rate.

Prior authorization and confirmation of coverage level by the patient's private insurance plan, hospital or government payer is a prerequisite to the shipment of product to a patient. The Company recognizes product revenues from sales of all MACI implants upon delivery at which time the customer obtains control of the implant and the claim is billable. The total consideration which the Company expects to collect in exchange for MACI implants (the transaction price) may be fixed or variable. Direct sales to hospitals or distributors are recorded at a contracted price, and there are typically no forms of variable consideration.

When the Company sells MACI the patient is responsible for payment; however, the Company is typically reimbursed by a third-party insurer or government payer, subject to a patient co-pay amount. Reimbursements from third-party insurers and government payers vary by patient and payer and are based on either contracted rates, publicly available rates, fee schedules or past payer precedents. Net product revenue is recognized net of estimated contractual allowances, which considers historical collection experience from both the payer and patient, denial rates and the terms of the Company's contractual arrangements. The Company estimates expected collections for these transactions using the portfolio approach. The Company records a reduction to revenue at the time of sale for its estimate of the amount of consideration that will not be collected. In addition, potential credit risk exposure has been evaluated for the Company's accounts receivable in accordance with *ASC 326, Financial Instruments - Credit Losses*. The Company assesses risk and determines a loss percentage by pooling account receivables based on similar risk characteristics. The loss percentage is calculated through the use of forecasts that are based on current and historical economic and financial information. This loss percentage was applied to the accounts receivables as of December 31, 2020. The total allowance for uncollectible consideration was $5.3 million and $3.9 million as of December 31, 2020, and 2019, respectively. Changes to the estimate of the amount of consideration that will not be collected could have a material impact to the revenue recognized. A 0.5% change to the estimated uncollectible percentage could result in approximately a $0.3 million decrease or increase in the revenue recognized for the year ended December 31, 2020.

Changes in estimates of the transaction price are recorded through revenue in the period in which such change occurs. Changes in estimates related to prior period sales resulted in an increase to revenue of $0.7 million, increase of $0.7 million and decrease of $0.2 million for the years ended December 31, 2020, 2019, and 2018, respectively.

Epicel

The Company sells Epicel directly to hospitals based on contracted rates stated in an approved contract or purchase order. Similar to MACI, there is no obligation to manufacture Epicel grafts upon receipt of a skin biopsy, and Vericel has no contractual right to receive payment until the product is delivered to the hospital. The Company recognizes product revenues from sales of Epicel upon delivery to the hospital, at which time the customer is in control of the Epicel grafts and the claim is billable to the hospital.

NexoBrid

The Company entered into exclusive license and supply agreements with MediWound, under which MediWound will manufacture and supply NexoBrid on a unit price basis, which may be increased pursuant to the terms of the agreement. BARDA has committed to procure NexoBrid from MediWound and, as of December 31, 2020, the Company did not hold a direct contract or distribution agreement with BARDA, or take title to the product. The Company recognizes revenue based on a percentage of gross profits for sales of NexoBrid to BARDA upon delivery, at which time BARDA is in control of the product. For the year ended December 31, 2020, the first orders of NexoBrid were delivered and the Company recognized $2.2 million of revenue. See note 16 for further discussion of the NexoBrid license and supply agreements.

Revenue by Product and Customer

The following table and description below shows the products from which the Company generated its revenue:

	Year Ended December 31,		
Revenue by product (in thousands)	**2020**	**2019**	**2018**
MACI and Carticel implants and kits			
Implants based on contracted rate sold through a specialty pharmacy (a)	$ 57,593	$ 56,185	$ 42,926
Implants subject to third-party reimbursement sold through a specialty pharmacy (b)	16,320	17,076	8,621
Implants sold direct based on contracted rates (c)	15,144	13,933	12,122
Implants sold direct subject to third-party reimbursement (d)	2,754	1,529	2,257
Biopsy kits - direct bill	1,908	2,243	1,997
Change in estimates related to prior periods (e)	713	654	(182)
Epicel			
Direct bill (hospital)	27,536	26,230	23,116
NexoBrid (f)	2,211	—	—
Total revenue	$ 124,179	$ 117,850	$ 90,857

(a) Represents implants sold through Orsini and AllCare whereby such specialty pharmacies have a direct contract with the underlying insurance provider. The amount of reimbursement is based on contracted rates at the time of sale supported by the pharmacy's direct contracts.

(b) Represents implants sold through Orsini or AllCare whereby such specialty pharmacy does not have a direct contract with the underlying payer. The amount of reimbursement is established based on a payer or state fee schedule and/or payer history.

(c) Represents implants sold directly from the Company to the facility based on a contract and known price agreed upon prior to the surgery date. Also represents direct sales under a contract to specialty distributor DMS.

(d) Represents implants sold directly from the Company to the facility based on a contract and known price agreed upon prior to the surgery date. The payment terms are subject to third-party reimbursement from an underlying insurance provider.

(e) Primarily represents changes in estimates related to implants sold through Orsini or AllCare in which such specialty pharmacy does not have a direct contract with the underlying payer. The initial estimate of the amount of reimbursement is established based on a payer or state fee schedule and/or payer history. The change in estimates is a result of additional information, changes in collection expectations or actual cash collections received in the current period.

(f) Represents revenue based on a percentage of gross profits for sales of NexoBrid to BARDA, pursuant to the license agreement between the Company and MediWound.

Concentration of Credit Risk

For the year ended December 31, 2018, MACI revenue concentration from its largest customer was 16%. The Company's total revenue and accounts receivable balances for the years ended December 31, 2020 and 2019 from its largest customer of MACI and Epicel did not exceed 10%.

5. Selected Balance Sheet Components

Inventory

Inventory as of December 31, 2020 and 2019:

(In thousands)	2020	2019
Raw materials	$ 8,775	$ 6,085
Work-in-process	537	541
Finished goods	44	190
Inventory	$ 9,356	$ 6,816

Property and Equipment

Property and Equipment, net as of December 31, 2020 and 2019:

(In thousands)	2020	2019
Machinery and equipment	$ 3,672	$ 3,152
Furniture, fixtures and office equipment	809	775
Computer equipment and software	6,846	6,174
Leasehold improvements	5,560	5,256
Construction in process	2,021	859
Financing right-of-use lease	111	148
Total property and equipment, gross	19,019	16,364
Less accumulated depreciation	(11,386)	(9,220)
	$ 7,633	$ 7,144

Depreciation expense for the years ended December 31, 2020, 2019 and 2018 was $2.4 million, $1.7 million and $1.4 million, respectively.

Accrued Expenses

Accrued Expenses as of December 31, 2020 and 2019:

(In thousands)	2020	2019
Bonus related compensation	$ 5,721	$ 5,116
Employee related accruals	3,482	1,785
Other accrued expenses	2,090	1,047
Accrued expenses	$ 11,293	$ 7,948

6. Debt

On December 19, 2018, the Company prepaid in full all outstanding indebtedness under, and terminated, the Loan and Security Agreement dated as of September 9, 2016, by and between the Company, Silicon Valley Bank as Agent and Silicon Valley Bank, MidCap Financial Trust, MidCap Funding III Trust and other lenders listed therein as lenders (SVB Loan Agreement), as amended December 30, 2016, May 9, 2017 and December 6, 2017, which termination was effective December 19, 2018. Warrants were issued to SVB and MidCap in conjunction with the modified debt agreement. On the date of termination, the Company paid in full $17.1 million in outstanding borrowings at the time of termination. In connection with the termination of the SVB Loan Agreement, the Company paid an additional prepayment premium of 1.5% in the amount of $0.2 million and a final payment of 3.6% in the amount of $0.5 million.

The prepayment of the debt in 2018 was accounted for as a debt extinguishment. The Company considered whether creditors remained the same or changed and whether the changes in debt terms were substantial. After performing the assessment in accordance with accounting guidance for the modification of debt arrangements the repayment of both the term loans and revolving credit agreement was accounted for as a debt extinguishment. As a result, the unamortized deferred financing costs, prepayment penalty and the accelerated payment of the final payment was recognized as a loss on extinguishment of debt of $0.8 million for the year ended December 31, 2018.

7. Leases

The Company leases facilities in Ann Arbor, Michigan and Cambridge, Massachusetts. The Ann Arbor facility includes office space, and the Cambridge facility includes clean rooms, laboratories for MACI and Epicel manufacturing and office space. The Company also leases offsite warehouse space, vehicles and computer equipment. Certain of the Company's lease agreements include lease payments that are adjusted periodically for an index or rate. The leases are initially measured using the present value of the projected payments adjusted for the index or rate in effect at the commencement date. The Company's lease agreements do not contain any material residual value guarantees or material restrictive covenants. All operating lease commitments with a lease term greater than 12 months are recognized as right-of-use assets and liabilities, on a discounted basis on the balance sheet. Effective October 21, 2020 the Company entered into an agreement with one of its Cambridge, Massachusetts facility leases. The agreement extended the terms of the lease to expire on February 29, 2032, with monthly contractual lease payments ranging from $0.4 million to $0.6 million. The agreement also provides a tenant improvement allowance of approximately $4.3 million, available through December 31, 2023.

Leases with an initial term of 12 months or less are not recorded on the balance sheet and for the year ended December 31, 2020 and 2019, lease expense of less than $0.1 million was recorded related to short-term leases. The contribution toward the cost of tenant improvements is recorded as a reduction of the operating lease assets. For the years ended December 31, 2020, 2019, the Company recognized $6.3 million and $5.4 million, respectively, and in 2018 (under the prior leasing guidance) the Company recognized $5.2 million of operating lease expense. For the years ended December 31, 2020, 2019 and 2018, the Company recognized less than $0.1 million of financing lease expense. The Company's leases contain non-lease components and activities that do not transfer a good or service to the Company. The Company elected not to combine lease and non-lease components and therefore non-lease costs were not included in the net lease assets or lease liabilities.

Total leased assets and liabilities classified on the balance sheet as of December 31, 2020 and 2019 are as follows:

(In thousands)	Classification	December 31, 2020	2019
Assets			
Operating	Right-of-use assets	$ 50,105	$ 25,103
Finance	Property and equipment, net	111	148
		$ 50,216	$ 25,251
Liabilities			
Current			
Operating	Current portion of operating lease liabilities	$ 4,394	$ 5,461
Finance	Other liabilities	41	41
		$ 4,435	$ 5,502
Non-current			
Operating	Operating lease liabilities	$ 48,789	$ 22,242
Finance	Other long-term liabilities	76	110
		$ 48,865	$ 22,352

Cash paid for amounts included in the measurement of the Company's operating lease liabilities was $5.8 million and $5.0 million for the year ended December 31, 2020 and 2019, respectively.

Maturity of lease liabilities as of December 31, 2020 are as follows:

(In thousands)	Operating Leases	Finance Leases	Total
2021	$ 4,394	$ 41	$ 4,435
2022	4,177	41	4,218
2023	6,973	41	7,014
2024	6,934	—	6,934
2025	6,340	—	6,340
more than 5 years	43,507	—	43,507
Total lease payments	$ 72,325	$ 123	$ 72,448
Less: interest	(19,142)	(7)	(19,149)
Present value of lease liabilities	$ 53,183	$ 116	$ 53,299

An explicit rate is not provided in some of the Company's leases, therefore the Company uses a mix of incremental borrowing rate based on the information available at commencement date through market sources including relevant peer borrowing rates, as well as implicit and explicit rates in determining the present value of lease payments.

The Company has options to renew lease terms for facilities and other assets. The exercise of lease renewal options is generally at the Company's sole discretion. The Company evaluates renewal and termination options at the lease commencement date to determine if it is reasonably certain to exercise the option on the basis of economic factors. For certain leases, the Company's exercise of the renewal option was determined to be probable and the renewal period was accordingly included in the lease term and related calculations. Lease terms and discount rates as of December 31, 2020 are as follows:

	December 31,	
	2020	2019
Weighted-average remaining lease term (years)		
Operating leases	10.6	6.8
Finance leases	2.5	3.5
Weighted-average discount rate		
Operating leases	5.42%	9.44%
Finance leases	5.00%	5.00%

8. Cash Equivalents and Investments

Marketable debt securities held by the Company are classified as available-for-sale pursuant to ASC 320, *Investments – Debt and Equity Securities*, and carried at fair value in the balance sheets on a settlement date basis. The following tables summarize the gross unrealized gains and losses of the Company's marketable securities as of December 31, 2020 and December 31, 2019:

	December 31, 2020				
	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Credit Losses	Estimated Fair Value
Money market funds	$ 3,698	$ —	$ —	$ —	$ 3,698
Commercial paper	8,993	1	—	—	8,994
Corporate notes	35,917	—	—	(6)	35,911
U.S. government securities	12,828	14	—	—	12,842
U.S. government agency bonds	5,000	1	—	—	5,001
U.S. asset-backed securities	3,534	4	—	—	3,538
	$ 69,970	$ 20	$ —	$ (6)	$ 69,984
Classified as:					
Cash equivalents					$ 3,698
Short-term investments					42,187
Long-term investments					24,099
					$ 69,984

	December 31, 2019			
		Gross Unrealized		
(In thousands)	Amortized Cost	Gains	Losses	Estimated Fair Value
Money market funds	$ 5,381	$ —	$ —	$ 5,381
Commercial paper	11,892	—	—	11,892
Corporate notes	18,369	11	—	18,380
U.S. government securities	11,291	4	—	11,295
U.S. asset-backed securities	10,503	6	—	10,509
	$ 57,436	$ 21	$ —	$ 57,457
Classified as:				
Cash equivalents				$ 5,381
Short-term investments				42,829
Long-term investments				9,247
				$ 57,457

As of December 31, 2020, the analysis under ASU 326 and the current macroeconomic impact of the COVID-19 pandemic did not result in material allowances for credit losses. There have been no impairments of the Company's assets measured and carried at fair value as of December 31, 2020.

9. Stock-Based Compensation

Stock Option, Restricted Stock Units and Equity Incentive Plans

The Company has historically had various stock incentive plans and agreements that provide for the issuance of nonqualified and incentive stock options and restricted stock units as well as other equity awards. Such awards may be granted by the Company's Board of Directors to certain of the Company's employees, directors and consultants.

Options and restricted stock units granted to employees and non-employees under these plans expire no later than ten years from the date of grant. Options and restricted stock units generally become exercisable or vest over a four year period, under a graded-vesting methodology for stock options and annually on the anniversary grant date for restricted stock units, following the date of grant. The Company generally issues new shares upon the exercise of stock options or vesting of restricted stock units.

The Amended and Restated 2019 Omnibus Incentive Plan (2019 Plan) was approved on April 29, 2020 and provides incentives through the grant of stock options, stock appreciation rights, restricted stock awards and restricted stock units. The exercise price of stock options granted under the 2019 Plan shall not be less than the fair market value of the Company's common stock on the date of grant. The 2019 Plan replaced the 1992 Stock Option Plan, the 2001 Stock Option Plan, the Amended and Restated 2004 Equity Incentive Plan, the 2009 Second Amended and Restated Omnibus Incentive Plan and the 2017 Omnibus Incentive Plan (Prior Plans), and no new grants have been granted under the Prior Plans after approval. However, the expiration or forfeiture of options previously granted under the Prior Plans will increase the number of shares available for issuance under the 2019 Plan.

As of December 31, 2020, there were 4,544,084 shares available for future grant under the 2019 Plan.

Employee Stock Purchase Plan

Employees are able to purchase stock under the ESPP. The ESPP allows for the issuance of an aggregate of 1,000,000 shares of common stock of which 708,452 have been issued since the inception of the benefit in 2015. Participation in this plan is available to substantially all employees. The ESPP is a compensatory plan accounted for under the expense recognition provisions of the share-based payment accounting standards. Compensation expense is recorded based on the fair market value of the purchase options at the grant date, which corresponds to the first day of each purchase period and is amortized over the purchase period. In January 2021, employees purchased 14,954 shares resulting in proceeds from the sale of common stock of $0.2 million under the ESPP for the fourth quarter of 2020. The total share-based compensation expense for the ESPP for the years ended December 31, 2020, 2019, and 2018 was approximately $0.4 million, $0.3 million, and $0.3 million, respectively.

Service-Based Stock Options

During the year ended December 31, 2020, the Company granted 1,356,540 service-based options to purchase common stock. The exercise price of the options is the fair market value per share of common stock on the grant date, generally vest over four years (other than 78,750 non-employee director options which vest over one year) and have a term of ten years. The weighted-average grant-date fair value of service-based options granted during the years ended December 31, 2020, 2019, and 2018 was $8.86, $12.62 and $6.96, respectively.

The net compensation costs recorded for the service-based stock options related to employees and directors (including the impact of forfeitures) for the years ended December 31, 2020, 2019, and 2018 were $12.1 million, $11.8 million and $6.9 million, respectively.

The fair value of each service-based stock option grant for the reported periods is estimated on the date of the grant using the Black-Scholes option-pricing model using the weighted-average assumptions noted in the following table:

	Year Ended December 31,		
Service-Based Stock Options	**2020**	**2019**	**2018**
Expected dividend rate	—%	—%	—%
Expected stock price volatility	71.1 - 78.7%	77.9 - 85.5%	82.3 – 88.3%
Risk-free interest rate	0.33 - 1.7%	1.4 - 2.7%	2.4 – 3.1%
Expected life (years)	5.3 - 6.3	5.3 - 6.3	5.3 - 6.3

The following table summarizes the activity for service-based stock options for the indicated periods:

Service-Based Stock Options	**Options**	**Weighted-Average Exercise Price**	**Weighted-Average Remaining Contractual Term (Years)**	**Aggregate Intrinsic Value (Thousands)**
Outstanding at December 31, 2019	5,052,950	$ 10.35	7.7	$ 37,974
Granted	1,356,540	13.42		
Exercised	(790,532)	7.06		
Expired	(29,115)	21.38		
Forfeited	(353,799)	13.82		
Outstanding at December 31, 2020	5,236,044	$ 11.34	7.3	$ 102,654
Exercisable at December 31, 2020	2,885,729	$ 9.16	6.4	$ 63,037

As of December 31, 2020, 4,949,912 shares are vested and expected to vest. As of December 31, 2020, there was approximately $13.1 million, of total unrecognized compensation cost related to non-vested service-based stock options granted under the 2019 Plan and the Prior Plans. That cost is expected to be recognized over a weighted-average period of 2.7 years.

The total intrinsic value of stock options exercised for the years ended December 31, 2020, 2019, and 2018 was $10.5 million, $16.1 million and $11.4 million, respectively.

Restricted Stock Units

The restricted stock units vest annually over four years in equal installments commencing on the first anniversary of the grant date (other than non-employee director options which vest over one year from the grant date). The Company issues new shares upon the vesting of restricted stock units. Restricted stock awards are recorded at fair value at the date of grant, which is based on the closing share price on the grant date. Compensation expense is recorded for restricted stock units that are expected to vest based on their fair value at the grant date and is amortized over the expected vesting period.

As restricted stock units vest, a portion of the shares awarded are withheld and net settled by the Company to cover employee tax obligations. As a result of 46,712 units vesting during the year ended December 31, 2020, 13,872 shares were withheld for payment of taxes on the employees' behalf and retired from the 2019 Plan. No shares were withheld for payment of taxes on 10,500 of the vested units, as no shares are withheld at vesting for shares awarded to the Company's Board of Directors.

The following table summarizes the activity for restricted stock awards for the indicated periods:

Restricted Stock Units	Number of Restricted Stock Awards	Weighted-Average Grant Date Fair Value	Weighted-Average Term	Aggregate Intrinsic Value (Thousands)
Outstanding at December 31, 2019	157,030	$ 17.80	1.6	$ 2,732
Granted	196,836	11.41		2,246
Vested	(46,712)	17.59		
Forfeited	(36,515)	15.00		
Unvested at December 31, 2020	270,639	$ 13.57	1.4	$ 8,357

The total grant-date fair value of restricted stock units granted in the year ended December 31, 2020 and 2019 was $2.2 million and $3.3 million, respectively. The net compensation costs recorded for the service-based restricted stock units related to employees and directors (including the impact of forfeitures) for the year ended December 31, 2020, and 2019 was $1.4 million and $1.0 million, respectively.

At December 31, 2020 and 2019, the total unrecognized compensation cost related to the restricted stock awards was $2.1 million and $1.8 million, respectively, and the weighted-average period over which that cost is expected to be recognized was 2.7 and 3.1 years for the same periods, respectively. The total fair value of restricted stock awards vested in the year ended December 31, 2020 was $0.6 million and no awards were vested in the year ended December 31, 2019.

Stock Compensation Expense

Non-cash stock-based compensation expense (employee stock purchase plan, service-based stock options and restricted stock units) included in cost of goods sold, research and development expenses and selling, general and administrative expenses is summarized in the following table:

	Years Ended December 31,		
(in thousands)	2020	2019	2018
Cost of goods sold	$ 1,949	$ 2,029	$ 1,015
Research and development	1,884	2,428	1,672
Selling, general and administrative	10,010	8,722	4,536
Total non-cash stock-based compensation expense	$ 13,843	$ 13,179	$ 7,223

10. Net Income (Loss) Per Common Share

The following reflects the net income (loss) attributable to common shareholders and share data used in the basic and diluted earnings per share computations using the two class method:

(Amounts in thousands, except per share amounts)	Year Ended December 31, 2020	2019	2018
Numerator:			
Net income (loss)	$ 2,864	$ (9,665)	$ (8,137)
Denominator:			
Weighted-average common shares outstanding (basic)	45,221	44,180	40,242
Net income (loss) per share attributable to common shareholders (basic)	$ 0.06	$ (0.22)	$ (0.20)
Weighted-average common shares outstanding (diluted)	47,282	44,180	40,242
Net income (loss) per share attributable to common shareholders (diluted)	$ 0.06	$ (0.22)	$ (0.20)
Anti-dilutive shares excluded from the calculation of diluted earnings per share[(a)] (amounts in millions):			
Stock options	2.2	5.1	4.8
Restricted stock unit awards	—	0.2	—

(a) Common equivalent shares are not included in the diluted per share calculation where the effect of their inclusion would be anti-dilutive.

11. Shareholder's Equity

Public Equity Offering

In June 2018, the Company sold 5,750,000 shares of its common stock in an underwritten public offering at a price of $13.00 per share. The Company received proceeds of $70.1 million, net of $4.7 million of underwriters' discount and issuance costs consisting primarily of legal and accounting fees. The Company recorded these proceeds as a common stock issuance.

12. Stock Purchase Warrants

The Company has historically issued warrants to purchase shares of the Company's common stock in connection with certain of its common stock offerings. The fair value of warrants previously issued were measured using the Black-Scholes valuation model. Inherent in the Black-Scholes valuation model are assumptions related to expected stock-price volatility, expected life, risk-free interest rate and dividend yield. The Company estimates the volatility of its common stock-based on historical volatility that matches the expected remaining life of the warrants. The risk-free interest rate is based on the U.S. Treasury zero-coupon yield curve on the grant date for a maturity similar to the expected remaining life of the warrants. The expected life of the warrants is assumed to be equivalent to their remaining contractual term. The dividend rate is based on the historical rate, which the Company anticipates will remain at zero.

During the year ended December 31, 2019, the Company issued 19,808 shares of common stock upon the exercise of warrants with an exercise price of $4.27. There were no warrants outstanding as of December 31, 2020 or 2019.

13. Fair Value Measurements

The Company's fair value measurements are classified and disclosed in one of the following three categories:

- Level 1: Unadjusted quoted prices in active markets that are accessible at the measurement date for identical, unrestricted assets or liabilities;
- Level 2: Quoted prices in markets that are not active, or inputs which are observable, either directly or indirectly, for substantially the full term of the asset or liability;
- Level 3: Prices or valuation techniques that require inputs that are both significant to the fair value measurement and unobservable (i.e., supported by little or no market activity).

There was no movement between Level 1 and Level 2 or between Level 2 and Level 3 from December 31, 2019 to December 31, 2020. Assets and liabilities measured at fair value are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The commercial paper, corporate notes, U.S. government securities, U.S. government agency bonds and U.S. asset-backed securities are classified as Level 2 as they were valued based upon quoted market prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active and model-based valuation techniques for which all significant inputs are observable in the market or can be corroborated by observable market data for substantially the full term of the assets. The following table summarizes the valuation of the Company's financial instruments that are measured at fair value on a recurring basis:

	December 31, 2020				December 31, 2019			
		Fair value measurement category				Fair value measurement category		
(In thousands)	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Assets:								
Money market funds	$ 3,698	$ 3,698	$ —	$ —	$ 5,381	$ 5,381	$ —	$ —
Commercial paper	8,994	—	8,994	—	11,892	—	11,892	—
Corporate notes	35,911	—	35,911	—	18,380	—	18,380	—
U.S. government securities	12,842	—	12,842	—	11,295	—	11,295	—
U.S. government agency bonds	5,001	—	5,001	—	—	—	—	—
U.S. asset-backed securities	3,538	—	3,538	—	10,509	—	10,509	—
	$ 69,984	$ 3,698	$ 66,286	$ —	$ 57,457	$ 5,381	$ 52,076	$ —

The fair values of the cash equivalents and marketable securities are based on observable market prices. The Company's accounts receivables, accounts payable and accrued expenses are valued at cost which approximates fair value.

14. Income Taxes

Loss before income taxes for U.S and non-U.S operations was as follows:

	Year Ended December 31,		
	2020	2019	2018
U.S. income (loss)	$ 2,767	$ (9,632)	$ (8,056)
Non U.S. income (loss)	97	(33)	(81)
	$ 2,864	$ (9,665)	$ (8,137)

A reconciliation of income taxes computed using the federal statutory rate to the taxes reported in the consolidated statements of operations is as follows:

	Year Ended December 31,		
(In thousands)	2020	2019	2018
Income (loss) before income taxes	$ 2,864	$ (9,665)	$ (8,137)
Federal statutory rate	21 %	21 %	21 %
Taxes computed at federal statutory rate	601	(2,030)	(1,709)
State and local income taxes	200	(484)	(385)
Nondeductible share-based compensation	437	(1,329)	(605)
Federal and state rate change	249	(164)	839
Research and orphan drug credits	(8,827)	—	—
Other	132	(49)	172
Change in valuation allowance	7,388	4,056	1,688
Reported income taxes	$ 180	$ —	$ —

Deferred tax assets (liabilities) consist of the following:

(In thousands)	Year Ended December 31, 2020	2019
Deferred tax assets:		
Net operating loss carryforwards	$ 8,411	$ 10,542
Employee benefits and stock compensation	5,692	4,329
Research and development costs	6,411	7,851
Intangible assets	3,279	4,350
Operating lease liability	13,687	7,245
Inventory reserve	3,813	3,303
Tax credit carryforward	10,085	—
Other, net	38	119
Total deferred tax assets	51,416	37,739
Less: valuation allowance	(37,379)	(29,991)
Total net deferred tax assets	14,037	7,748
Deferred tax liabilities:		
Right of use asset	(13,463)	(7,143)
Fixed assets	(574)	(605)
Total net deferred tax liabilities	(14,037)	(7,748)
Net deferred tax assets and liabilities	$ —	$ —

For the year-ended December 31, 2020, we recorded income tax expense as a result of taxable income in certain states where the net operating loss carryforwards and related deferred tax assets have been fully utilized. As of December 31, 2020, the Company's U.S. federal and state tax net operating loss carryforwards available to offset future profits, after considering the annual Section 382 limit described below, are $32.3 million and $21.3 million, respectively. These net operating loss carryforwards will expire between 2021 and 2039 with the exception of the federal net operating loss generated in 2018. The federal net operating loss of $1.5 million generated in 2018 can be carried forward indefinitely. The projected annual limitation on the use of the net operating losses that existed prior to September 17, 2014 as a result of our change in control in 2014 per Section 382 of the Internal Revenue Code is $0.8 million. As a result, a significant portion of the net operating losses and tax credit carryforwards will expire prior to their utilization, regardless of the level of future profitability. As of December 31, 2020, the Company's U.S. federal tax credit carryforwards available to offset future profits are $10.1 million. During 2020, the Company determined to pursue certain available tax credits and performed a research and development and orphan drug credit tax studies. As a result of completion of these studies it was determined that the Company now has a sufficient basis to claim the credits and has recognized a tax credit carryforward in the current period. These credit carryforwards will expire between 2034 and 2040.

In accordance with the accounting guidance for income taxes, the Company estimated whether recoverability of its deferred tax assets is "more likely than not," based on forecasts of taxable income in the related tax jurisdictions. In this estimate, the Company uses historical results, projected future operating results based upon approved business plans, eligible carry forward periods, tax planning opportunities and other relevant considerations. Based on these factors, including historical losses incurred by the Company, a full valuation allowance for the deferred tax assets, including the deferred tax assets for the aforementioned net operating losses and credits, has been provided since they are not more likely than not to be realized. If the Company continues to achieve profitability, these deferred tax assets may be available to offset future income taxes and the valuation could be released. The change in the valuation allowance was an increase of $7.4 million and $4.1 million for the years ended December 31, 2020 and 2019, respectively.

The Company assesses uncertain tax positions in accordance with the guidance for accounting for uncertain tax positions. This pronouncement prescribes a recognition threshold and measurement methodology for recording within the financial statements uncertain tax positions taken, or expected to be taken, in the Company's income tax returns. To the extent the uncertain tax positions do not meet the "more likely than not" threshold, the Company has derecognized such positions. To the extent the uncertain tax positions meet the "more likely than not" threshold, the Company has measured and recorded the highest probable benefit, and have established appropriate reserves for benefits that exceed the amount likely to be sustained

upon examination. The Company currently has not recorded any uncertain tax positions and does not anticipate that the unrecognized tax benefits will significantly increase or decrease within the next twelve months.

The Company files U.S. federal and state income tax returns with varying statute of limitations. During the year-ended December 31, 2020 examinations by U.S. tax authorities have been completed for 2017 and 2018. Due to the Company's net operating loss carryforwards, federal income tax returns from incorporation are still subject to examination. The Company files in several state tax jurisdictions and are subject to examination in years ranging from incorporation to 2020.

15. Employee Savings Plan

The Company has a 401(k) savings plan that allows participating employees to contribute a portion of their salary, subject to annual limits and minimum qualifications. The Board may, at its sole discretion, approve Company matching contributions to the plan. The Company made contributions of $0.8 million, $0.7 million and $0.6 million for the years ended December 31, 2020, 2019 and 2018, respectively.

16. NexoBrid License and Supply Agreements

On May 6, 2019, the Company entered into exclusive license and supply agreements with MediWound to commercialize NexoBrid and any improvements to NexoBrid in North America. NexoBrid is a topically-administered biological product that enzymatically removes nonviable burn tissue, or eschar. On June 30, 2020, the Company announced the submission of a BLA to the FDA seeking the approval of NexoBrid for eschar removal (debridement) in adults with deep partial-thickness and/or full-thickness thermal burns. Subsequently, on September 16, 2020, the Company announced that the FDA accepted the BLA for review and has assigned a Prescription Drug User Fee Act (PDUFA) target date of June 29, 2021. Pursuant to the terms of the license agreement, if the BLA is approved, MediWound will transfer the BLA to Vericel and Vericel will market NexoBrid in the U.S. Both MediWound and Vericel, under the supervision of a Central Steering Committee comprised of members of both companies will continue to guide the development of NexoBrid in North America. NexoBrid is approved in the European Union and other international markets and has been designated as an orphan biologic in the United States, European Union and other international markets.

In May 2019, the Company paid MediWound $17.5 million in consideration for the license. The $17.5 million upfront payment was recorded to research and development expense during 2019, as the license was considered in process research and development. The Company is also obligated to pay MediWound $7.5 million, which is contingent upon U.S. regulatory approval of the BLA for NexoBrid and up to $125 million contingent upon meeting certain sales milestones. The first sales milestone of $7.5 million would be triggered when annual net sales of NexoBrid or improvements to it in North America exceed $75 million. As of December 31, 2020, the milestone payments are not yet probable and therefore, not considered a liability. The Company also will pay MediWound tiered royalties on net sales ranging from mid-high single-digit to mid-teen percentages, subject to customary reductions. The Company also entered into a supply agreement with MediWound under which MediWound will manufacture NexoBrid for the Company on a unit price basis which may be increased based on a published index. MediWound is obligated to supply the Company with NexoBrid for sale in North America on an exclusive basis for the first five years of the term of the supply agreement. After the exclusivity period or upon supply failure, the Company will be permitted to establish an alternate source of supply.

BARDA has committed to procure NexoBrid directly from MediWound under an emergency use authorization, and under such commitment the Company will receive a percentage of gross profit for sales directly to BARDA. If BARDA procures NexoBrid directly from Vericel, the Company will pay a percentage of gross profits to MediWound on initial committed amounts and a royalty on any additional BARDA purchases of NexoBrid beyond the initial committed amount. As of December 31, 2020, the Company does not hold a direct contract or distribution agreement with BARDA. In 2020, BARDA accepted the first shipments of NexoBrid for emergency use preparedness per the agreement between BARDA and MediWound. As a result, the Company recognized $2.2 million of revenue for the year ended December 31, 2020; see note 4 for further information.

17. Commitments and Contingencies

Manufacturing and Supply Agreements

Matricel — In October 2015, the Company signed a long-term supply agreement with Matricel GmbH for the ACI-Maix collagen membrane used in the manufacture of MACI. The Company and Matricel amended the agreement on March 17, 2018. Under the agreement, the Company has committed to purchase annually approximately $0.6 million per year, the Company has fulfilled this commitment for the years ended December 31, 2020, 2019 and 2018, respectively. The agreement is effective until December 31, 2022 and contains a 5-year renewal option by the Company and an additional 5-year automatic renewal, unless otherwise terminated.

Manufacture, Supply and Other Agreements — The Company has entered into various agreements relating to the manufacture of its products and the supply of certain components. If the manufacturing or supply agreements expire or are otherwise terminated, the Company may not be able to identify and obtain ancillary materials that are necessary to develop its products and such expiration and termination could have a material effect on the Company's business.

The Company's purchase commitments consist of minimum purchase amounts of materials used in the Company's cell manufacturing process to manufacture its marketed cell therapy products. Future minimum purchase commitments related to our contractual obligations are as follows:

		Payments Due by Period					
Contractual Obligations (in thousands)	**Total**	**2021**	**2022**	**2023**	**2024**	**2025**	**More than 5 Years**
Purchase commitments	$ 7,864	$ 7,182	$ 682	$ —	$ —	$ —	$ —

18. Supplementary Quarterly Financial Information (unaudited)

Quarterly earnings per share amounts may not sum to the totals for each of the years, since quarterly computations are based on weighted-average common shares outstanding during each quarter.

In thousands, except per share data	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**	**Year**
2020					
Revenues	$ 26,678	$ 20,014	$ 32,258	$ 45,229	$ 124,179
Gross profit	16,756	11,354	22,471	33,647	84,228
Income (Loss) from operations	(5,076)	(8,358)	3,517	12,289	2,372
Net Income (loss)	(4,705)	(8,269)	3,618	12,220	2,864
Net Income (loss) per share (Basic)	(0.10)	(0.18)	0.08	0.27	0.06
Net Income (loss) per share (Diluted)	(0.10)	(0.18)	0.08	0.25	0.06
2019					
Revenues	$ 21,810	$ 26,151	$ 30,499	$ 39,390	$ 117,850
Gross profit	13,170	17,129	21,175	28,805	80,279
Income (Loss) from operations	(3,358)	(20,200)	3,097	9,210	(11,251)
Net Income (loss)	(2,844)	(19,792)	3,470	9,501	(9,665)
Net Income (loss) per share (Basic)	(0.07)	(0.45)	0.08	0.21	(0.22)
Net Income (loss) per share (Diluted)	(0.07)	(0.45)	0.07	0.20	(0.22)

Item 9. ***Changes in and Disagreements with Accountants on Accounting and Financial Disclosure***

There are none to report.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Management of the Company, with the participation of its certifying officers, evaluated the effectiveness of the Company's disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Based on the evaluation as of December 31, 2020, the Company's Chief Executive Officer and Chief Financial Officer (its "Certifying Officers") concluded that the Company's disclosure controls and procedures were effective.

The Company has established disclosure controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Securities and Exchange Act of 1934, as amended (the "Exchange Act"), is recorded, processed, summarized and reported within the time periods specified in the Commission's rules and forms, and that such information is accumulated and communicated to management of the Company, with the participation of its Certifying Officers, as appropriate, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our internal control over financial reporting is a process designed under the supervision of our Chief Executive Officer and Chief Financial Officer to provide reasonable assurance regarding the reliability of financial reporting and the preparation of our Consolidated Financial Statements for external purposes in accordance with generally accepted accounting principles. Management evaluated the effectiveness of our internal control over financial reporting using the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control - Integrated Framework* (2013). Management concluded our internal control over financial reporting was effective as of December 31, 2020.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2020 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as attested to in their report which appears in Item 8 of this Form 10-K.

Changes in Internal Control over Financial Reporting

During the three months ended December 31, 2020, there were no material changes made in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act).

Item 9B. ***Other Information***

Not applicable.

PART III

Certain information required by Part III is omitted from this Annual Report on Form 10-K, and is incorporated by reference to our definitive Proxy Statement to be filed with the Securities and Exchange Commission pursuant to Regulation 14A in connection with our 2021 Annual Meeting of Shareholders, scheduled for April 28, 2021.

Item 10. ***Directors, Executive Officers and Corporate Governance***

The information relating to our directors is incorporated by reference to the Proxy Statement as set forth under the caption "Election of Directors." Information relating to our executive officers is set forth in Part I of this Report under the caption "Executive Officers."

Information with respect to delinquent filings pursuant to Item 405 of Regulation S-K is incorporated by reference to the Proxy Statement as set forth under the caption "Section 16(a) Beneficial Ownership Reporting Compliance."

Item 11. ***Executive Compensation***

The information relating to executive compensation is incorporated by reference to the Proxy Statement as set forth under the caption "Executive Compensation and Related Information."

Item 12. ***Security Ownership of Certain Beneficial Owners and Management, and Related Shareholder Matters***

The information relating to ownership of our equity securities by certain beneficial owners and management is incorporated by reference to the Proxy Statement as set forth under the caption "Stock Ownership of Certain Beneficial Owners and Management."

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

The information relating to certain relationships and related person transactions is incorporated by reference to the Proxy Statement as set forth under the caption "Certain Relationships and Related Party Transactions."

Item 14. ***Principal Accountant Fees and Services***

The information relating to principal accountant fees and services is incorporated by reference to the Proxy Statement as set forth under the caption "Ratification of Appointment of Independent Registered Public Accounting Firm."

PART IV

Item 15. ***Exhibits and Financial Statement Schedules***

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. Consolidated Financial Statements (see Item 8).
2. All information is included in the Consolidated Financial Statements or Notes thereto.
3. Exhibits:
   See Exhibit Index.

Item 16. ***Form 10-K Summary***

This Annual Report on Form 10-K does not include a summary.

EXHIBIT INDEX

Exhibit No.	Description
3.1	Restated Articles of Incorporation of the Company, filed as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 17, 2009, incorporated herein by reference.
3.2	Certificate of Amendment to Restated Articles of Incorporation of the Company dated February 9, 2010, filed as Exhibit 3.2 to the Company's Post-Effective Amendment No. 1 to Form S-1 filed on March 31, 2010, incorporated herein by reference.
3.3	Certificate of Amendment to Restated Articles of Incorporation of the Company dated March 22, 2011, attached as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on March 25, 2011, incorporated herein by reference.
3.4	Certificate of Amendment to the Restated Articles of Incorporation of the Company, dated November 21, 2014, attached as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on November 24, 2014, incorporated herein by reference.
3.5	Certificate of Designations, Preferences and Rights and Limitations of Series A Convertible Preferred Stock (incorporated herein by reference as Exhibit 3.7 to the Company's Annual Report on Form 10-K, filed March 14, 2016).
3.6	Bylaws, as amended, attached as Exhibit 3.1 to the Company's Current Report on Form 8-K filed on November 12, 2010, incorporated herein by reference.
4.1	Form of Senior Indenture for Senior Debt Securities, filed as Exhibit 4.2 to the Company's Registration Statement on Form S-3 filed on August 16, 2018 and incorporated herein by reference.
4.2	Form of Indenture for Subordinated Debt Securities, filed as Exhibit 4.3 to the Company's Registration Statement on Form S-3 filed on August 16, 2018 and incorporated herein by reference.
4.3	Shareholder Rights Agreement, dated as of August 11, 2011, between the Company and Continental Stock Transfer & Trust Company, as Rights Agent, attached as Exhibit 4.1 to the Company's Current Report on Form 8-A filed on August 12, 2011, incorporated herein by reference.
4.4	Amendment to Shareholder Rights Agreement, dated as of March 9, 2012, between the Company and Continental Stock Transfer & Trust Company, as Rights Agent, attached as Exhibit 4.1 to the Company's Current Report on Form 8-K filed on March 9, 2012, incorporated herein by reference.
4.5**	Amendment 2 to Shareholder Rights Agreement, dated as of February 11, 2021.
4.6	Description of Capital Stock (incorporated herein by reference to Exhibit 4.5 on Form 10-K filed on February 25, 2020).
10.1 #	Form of Indemnification Agreement entered into between the Company and each of its directors, attached as Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 31, 2010, incorporated herein by reference.
10.2 #	Senior Executive Incentive Bonus Plan (incorporated herein by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K, filed on March 25, 2011).

Exhibit No.	Description
10.3 #	Executive Employment Agreement, executed March 4, 2013 and effective March 1, 2013, by and between the Company and Dominick C. Colangelo (incorporated herein by reference to Exhibit 10.1 to the Company's Report on Form 8-K, filed on March 8, 2013).
10.4	Asset Purchase Agreement, dated as of April 19, 2014, by and between the Company and Sanofi (incorporated herein by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on April 23, 2014).
10.5 #	Second Amended and Restated 2009 Omnibus Incentive Plan (previously filed as Appendix II to the Company's definitive proxy statement on Schedule 14A, filed on October 21, 2014 and incorporated herein by reference).
10.6	Lease Agreement, dated November 30, 2005, by and between the Company and Up 64 Sidney Street, LLC, as amended (incorporated herein by reference as Exhibit 10.57 to the Company's Annual Report on Form 10-K, filed March 14, 2016).
10.7**	Lease Agreement, dated October 21, 2020, by and between the Company and Up 64 Sidney Street, LLC, as amended .
10.8	Vericel Corporation 2015 Employee Stock Purchase Plan (incorporated herein by reference to Appendix I of the Company's Proxy Statement on Schedule 14A for the fiscal year ended December 31, 2014, filed on March 25, 2015).
10.9 †	Form of Warrants issued by the Company to the Lenders (incorporated herein by reference to Exhibit 10.1 on Form 8-K filed September 14, 2016, as amended on December 30, 2016).
10.10 †	Form of Warrant issued by the Company to ICT (incorporated herein by reference to Exhibit 10.1 on Form 8-K filed May 15, 2017).
10.11 †	Distribution Agreement by and between Orsini Pharmaceutical Services, Inc. and the Company, dated May 15, 2017 (incorporated herein by reference to Exhibit 10.1 on Form 8-K/A filed June 2, 2017).
10.12 †	License Agreement between the Company and Innovative Cellular Therapeutics CO., LTD., dated May 9, 2017 (incorporated herein by reference to Exhibit 10.2 on Form 8-K/A filed June 2, 2017).
10.13 #	First Amendment to Executive Employment Agreement by and between Dominick C. Colangelo and the Company, dated September 14, 2017 (incorporated herein by reference to Exhibit 10.1 on Form 8-K filed September 19, 2017).
10.14 #	Amended and Restated Employment Agreement by and between Gerard Michel and the Company, dated September 15, 2017 (incorporated herein by reference to Exhibit 10.3 on Form 8-K filed September 19, 2017).
10.15	First Amendment to Distribution Agreement between Orsini Pharmaceutical Services, Inc. and the Company, dated August 10, 2017 (incorporated herein by reference to Exhibit 10.8 on Form 10-Q filed November 7, 2017).
10.16 †	Form of Warrant issued by the Company to each of SVB and MidCap (incorporated herein by reference to Exhibit 10.2 on Form 8-K filed December 8, 2017).
10.17	Warrant issued by the Company to ICT (incorporated herein by reference to Exhibit 10.7 on Form 8-K filed December 28, 2017).

Exhibit No.	Description
10.18 †	Second Amendment to Distribution Agreement between Orsini Pharmaceutical Services, Inc. and the Company, dated October 13, 2017 (incorporated herein by reference to Exhibit 10.56 on Form 10-K filed March 8, 2018).
10.19 †	Third Amendment to Distribution Agreement between Orsini Pharmaceutical Services, Inc. and the Company, dated November 14, 2017 (incorporated herein by reference to Exhibit 10.57 on Form 10-K filed March 8, 2018).
10.20 †	Fourth Amendment to Distribution Agreement between Orsini Pharmaceutical Services, Inc. and the Company, dated July 25, 2018 (incorporated herein by reference to Exhibit 10.1 on Form 10-Q filed November 6, 2018).
10.21 †	Dispensing Agreement by and between AllCare Plus Pharmacy and the Company, dated July 26, 2018 (incorporated herein by reference to Exhibit 10.2 on Form 10-Q, filed November 6, 2018).
10.22 †	Fifth Amendment to Distribution Agreement between Orsini Pharmaceutical Services, Inc. and the Company, dated October 18, 2018 (incorporated herein by reference to Exhibit 10.3 on Form 10-Q filed November 6, 2018).
10.23 #	Amended and Restated Non-employee Director Compensation Guidelines (incorporated herein by reference to Exhibit 10.58 on Form 10-K filed March 5, 2018).
10.24 †	Amended and Restated ACI-Maix Supply Agreement, dated March 17, 2018, as amended, by and between the Company and Matricel GMBH (incorporated herein by reference to Exhibit 10.1 on Form 10-Q filed May 8, 2018).
10.25 #	2017 Omnibus Incentive Plan (previously filed as Appendix I to the Company's definitive proxy statement on Schedule 14A, filed March 20, 2017 and incorporated herein by reference).
10.26 #	Form of New Hire Incentive Stock Option Agreement under the 2017 Omnibus Incentive Plan (incorporated herein by reference to Exhibit 10.48 on Form 10-K filed February 26, 2019).
10.27 #	Form of Incentive Stock Option Award Agreement under the 2017 Omnibus Incentive Plan (incorporated herein by reference to Exhibit 10.49 on Form 10-K filed February 26, 2019).
10.28 #	Form of Non-Employee Director Award Agreement under the 2017 Omnibus Incentive Plan (incorporated herein by reference to Exhibit 10.50 on Form 10-K filed February 26, 2019).
10.29 #	Form of Restricted Stock Unit Award Agreement under the 2017 Omnibus Incentive Plan (incorporated herein by reference to Exhibit 10.51 on Form 10-K filed February 26, 2019).
10.30 #	Vericel Corporation Amended and Restated 2019 Omnibus Incentive Plan (incorporated herein by reference to Exhibit 10.1 on Form 8-K filed May 1, 2020).
10.31 #**	Form of Amended and Restated Incentive Stock Option Agreement for Employees under the 2019 Omnibus Incentive Plan.
10.32 #**	Form of Amended and Restated Incentive Stock Option Agreement for New Hires under the 2019 Omnibus Incentive Plan.
10.33 #**	Form of Amended and Restated Non-Qualified Stock Option Agreement under the 2019 Omnibus Incentive Plan.

Exhibit No.	Description
10.34 #**	Form of Amended and Restated Restricted Stock Unit Award Agreement for Employees under the 2019 Omnibus Incentive Plan.
10.35 #**	Form of Restricted Stock Unit Award Agreement for Non-employee Directors under the 2019 Omnibus Incentive Plan.
10.36	Sixth Amendment to Distribution Agreement between Orsini Pharmaceutical Services, Inc. and the Company, dated April 18, 2019 (incorporated herein by reference to Exhibit 10.1 on Form 10-Q filed August 6, 2019).
10.37 †	First Amendment to Dispensing Agreement by and between AllCare Plus Pharmacy and the Company, dated May 1, 2019 (incorporated herein by reference to Exhibit 10.2 on Form 10-Q, filed August 6, 2019)
10.38 †	License Agreement between the Company and MediWound LTD., dated May 6, 2019 (incorporated herein by reference to Exhibit 10.9 on Form 10-Q filed August 6, 2019).
10.39 †	Supply Agreement between the Company and MediWound LTD., dated May 6, 2019 (incorporated herein by reference to Exhibit 10.10 on Form 10-Q filed August 6, 2019).
10.40 #	Amended and Restated Employment Agreement by and between Michael Halpin and the Company, dated September 14, 2017 (incorporated herein by reference to Exhibit 10.11 on Form 10-Q filed August 6, 2019).
10.41 #	First Amendment to Executive Employment Agreement, executed and effective June 3, 2019, by and between the Company and Michael Halpin (incorporated herein by reference to Exhibit 10.12 on Form 10-Q, filed August 6, 2019).
10.42 #	Employment Agreement, dated January 25, 2021, by and between the Company and Joseph Mara (incorporated herein by reference to Exhibit 10.1 on Form 8-K filed January 25,2021).
10.43 #**	Employment Agreement, dated November 4, 2019 by and between the Company and Sean Flynn.
10.44 #**	Employment Agreement, dated August 20, 2018 by and between the Company and Dr. Jonathan M. Hopper.
21.1**	Subsidiaries of Registrant.
23.1**	Consent of PricewaterhouseCoopers LLP, Independent Registered Public Accounting Firm.
31.1**	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2**	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1**	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS**	XBRL Instance Document
101.SCH**	XBRL Taxonomy Extension Schema Document
101.CAL**	XBRL Taxonomy Extension Calculation Linkbase Document

Exhibit No.	Description
101.LAB**	XBRL Taxonomy Extension Label Linkbase Document
101.PRE**	XBRL Taxonomy Extension Presentation Linkbase Document
101.DEF**	XBRL Taxonomy Extension Definition Linkbase Document
104	Cover Page Interactive Data File (formatted as inline XBRL and contained in Exhibit 101)

Management contract or compensatory plan or arrangement covering executive officers or directors of Vericel.
† Confidential treatment status has been granted as to certain portions thereto, which portions are omitted and filed separately with the Securities and Exchange Commission.
* Furnished herewith.
** Filed herewith.

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.

Date: February 24, 2021

Vericel Corporation

/s/ DOMINICK C. COLANGELO
Dominick C. Colangelo
President and Chief Executive Officer
(Principal Executive Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed on behalf of the registrant on February 24, 2021 by the following persons in the capacities indicated.

Signature	Title
/s/ DOMINICK C. COLANGELO Dominick C. Colangelo	*President and Chief Executive Officer, Director* *(Principal Executive Officer)*
/s/ JOSEPH A. MARA Joseph A. Mara	*Chief Financial Officer* *(Principal Financial Officer)*
/s/ SANDRA L. PENNELL Sandra L. Pennell	*Vice President and Corporate Controller* *(Principal Accounting Officer)*
/s/ ROBERT L. ZERBE, M.D. Robert L. Zerbe, M.D.	*Chairman of the Board of Directors*
/s/ ALAN L. RUBINO Alan L. Rubino	*Director*
/s/ HEIDI M. HAGEN Heidi M. Hagen	*Director*
/s/ STEVEN C. GILMAN Steven C. Gilman	*Director*
/s/ KEVIN F. MCLAUGHLIN Kevin F. McLaughlin	*Director*
/s/ PAUL K. WOTTON Paul K. Wotton	*Director*

AMENDMENT NO. 2
TO
SHAREHOLDER RIGHTS AGREEMENT

This Amendment No. 2 to Shareholder Rights Agreement, dated as of February 11, 2021 (this "Amendment No. 2"), is made between Vericel Corporation, a Michigan corporation (the "Company"), and Continental Stock Transfer & Trust Company (the "Rights Agent").

RECITALS

A. The Company (formerly known as Aastrom Biosciences, Inc.) and the Rights Agent are parties to the Shareholder Rights Agreement, dated as of August 11, 2011, as amended on March 9, 2012 (the "Rights Agreement").

B. The Board of Directors of the Company (the "Board") has determined that it is in the best interests of the Company to amend the Rights Agreement as set forth in this Amendment No. 2.

C. Pursuant to Section 27 of the Rights Agreement, prior to the occurrence of a Section 11(a)(ii) Event, the Company and the Rights Agent shall, if the Board so directs, supplement or amend any provision of the Rights Agreement as the Board may deem necessary or desirable without the approval of any holders of certificates representing shares of Common Stock of the Company.

NOW, THEREFORE, in consideration of the background, agreements and covenants contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereby agree as follows:

Section1. Amendment of Rights Agreement.

(a) Subclause (i) of the first sentence of Section 7(a) of the Rights Agreement is hereby amended and restated to read in its entirety as follows:

"(i) the Close of Business on February 11, 2021 (the "Final Expiration Date"),"

(b) The exhibits to the Rights Agreement shall be deemed to be restated to reflect this Amendment No. 2, including all necessary conforming changes.

Section 2. Direction. By its execution and delivery hereof, the Company directs the Rights Agent to execute this Amendment No. 2.

Section 3. Defined Terms. Unless otherwise defined in this Amendment No. 2, capitalized terms used in this Amendment No. 2 have the respective meanings given to them in the Rights Agreement.

Section 4. No Other Modification. Other than as set forth in this Amendment No. 2, the terms and conditions of the Rights Agreement remain in full force and effect without modification thereto.

Section 5. Counterparts. This Amendment No. 2 may be executed in any number of counterparts. Each counterpart shall for all purposes be deemed to be an original, and all such counterparts shall together constitute but one and the same instrument.

Section 6. Governing Law. This Amendment No. 2 shall be deemed to be a contract made under the laws of the State of Michigan and for all purposes shall be governed by and construed in accordance with the laws of such State applicable to contracts to be made and to be performed entirely within such State. The courts of the State of Michigan and of the United States of America located in the State of Michigan (the "Michigan Courts") shall have exclusive jurisdiction over any litigation arising out of or relating to this Amendment No. 2 and the transactions contemplated hereby, and any Person commencing or otherwise involved in any such litigation shall waive any objection to the laying of venue of such litigation in the Michigan Courts and shall not plead or claim in any Michigan Court that such litigation brought therein has been brought in an inconvenient forum.

Section 7. Descriptive Headings. Descriptive headings of the several sections of this Amendment No. 2 are inserted for convenience only and shall not control or affect the meaning or construction of any of the provisions of this Amendment No. 2.

[*Signatures follow on next page*]

In Witness Whereof, the parties hereto have caused this Amendment No. 2 to be duly executed and delivered as of the day and year first above written.

Vericel Corporation

By: /s/ Sean C. Flynn
Name: Sean C. Flynn
Title: Vice President, General Counsel & Secretary

Continental Stock Transfer & Trust Company,
as Rights Agent

By: /s/ Henry Farrell
Name: Henry Farrell
Title: Vice President

64 Sidney Street

Cambridge, Massachusetts

LANDLORD

UP 64 SIDNEY STREET, LLC

TENANT

VERICEL CORPORATION

Table of Contents

L E A S E

ARTICLE I

RECITALS AND DEFINITIONS

Section 1.1 Recitals.

This Lease (this "**Lease**") is entered into as of October ____, 2020 (the "**Effective Date**"), by and between UP 64 SIDNEY STREET, LLC, a Delaware limited liability company (the "**Landlord**"), and VERICEL CORPORATION, a Michigan corporation (the "**Tenant**").

In consideration of the mutual covenants herein set forth, the Landlord and the Tenant do hereby agree to the terms and conditions set forth in this Lease.

Section 1.2 Definitions.

The following terms shall have the meanings indicated or referred to below:

"**2005 Lease**" means that certain Lease by and between Landlord and Tenant dated as of November 30, 2005, as amended by that certain First Amendment to Lease dated as of May 21, 2010, that certain Second Amendment to Lease dated as of April 24, 2012, that certain Third Amendment to Lease dated as of September 30, 2013, and that certain Assignment and Assumption of Lease Agreement dated as of May 30, 2014.

"**2008 Lease**" means that certain Lease by and between Landlord and Tenant dated as of January 23, 2008, as amended by that certain First Amendment to Lease dated as of May 21, 2010, that certain Second Amendment to Lease dated as of April 24, 2012, that certain Third Amendment to Lease dated as of September 30, 2013, that certain Assignment and Assumption of Lease Agreement dated as of May 30, 2014, and that certain Fourth Amendment to Lease dated as of March 8, 2016.

"**Additional Rent**" means all charges payable by the Tenant pursuant to this Lease other than Annual Fixed Rent, including without implied limitation, the Tenant's parking charges as provided in Section 2.4 and **Exhibit A**; the Tenant's Tax Expense Allocable to the Premises as provided in Section 3.2; the Tenant's Operating Expenses Allocable to the Premises in accordance with Section 3.3; amounts payable for special services pursuant to Section 3.5; the Landlord's share of any sublease or assignment proceeds pursuant to Section 6.8.

"**Annual Fixed Rent**" - See Section 3.1.

"**Building**" means the Richards Building containing office space located at 64 Sidney Street, Cambridge, Massachusetts.

"**Commencement Date**" - See Section 2.5.

"**Common Building Areas**" means those portions of the Building which are not part of the Premises and to which the Tenant has appurtenant rights pursuant to Section 2.2.

"**Existing Leases**" means the 2005 Lease and the 2008 Lease.

"**External Causes**" means, collectively, (i) Acts of God, war, civil commotion, fire, flood or other casualty, pandemics, epidemics or other public health emergency declared by any local, state or federal government, strikes or other extraordinary labor difficulties, shortages of labor or materials or equipment in the ordinary course of trade, government orders, restrictions or regulations enacted or promulgated after the date of this Lease, or other cause not reasonably within the Landlord's or Tenant's control and not due to the fault or neglect of the Landlord or Tenant, and (ii) any act, failure to act or neglect of the Tenant or Landlord or the Tenant's or Landlord's servants, agents, employees, licensees or any person claiming by, through or under the Tenant or Landlord, as the case may be, which delays the Landlord or Tenant, as the case may be, in the performance of any act required to be performed by the Landlord or Tenant, as the case may be, under this Lease.

"**Land**" means the parcel of land situated in Cambridge, Massachusetts, described in **Exhibit B**.

"**Landlord's Original Address**" - See **Exhibit A**.

"**Permitted Uses**" ·See **Exhibit A**.

"**Premises**" - See **Exhibit A** and Section 2.1.

"**Property**" means the Land and the Building.

"**Tenant's Original Address**" - See **Exhibit A**.

"**Term**" shall mean the period commencing on July 1, 2020 and expiring on February 29, 2032, as such initial Term may be extended or earlier terminated as set forth in this Lease.

"**University Park**" means the area· in Cambridge, Massachusetts, bounded on the North side by Massachusetts Avenue, Green and Blanche Streets, on the East side by Landsdowne, Cross and Purrington Streets, on the South side by Pacific Street and on the West side by Brookline Street, as shown on **Exhibit B1**.

Section 1.3 Exhibits.

The Exhibits to this Lease, which are listed herein below, are incorporated herein by this reference and are to be treated as a part of this Lease for all purposes. Undertakings contained in such Exhibits, including any Exhibits not attached but separately delivered to Tenant, are agreements on the part of Landlord and Tenant, as the case may be, to perform the obligations stipulated therein.

EXHIBIT A - Basic Lease Terms

EXHIBIT B - Legal Description
EXHIBIT B-1 - Map of University Park
EXHIBIT B-2 - Depiction of Premises
EXHIBIT C - Work Letter
EXHIBIT D - Standard Services
EXHIBIT E - Rules and Regulations
EXHIBIT F - Roof Equipment
EXHIBIT G - Removal Requirements
EXHIBIT H - Permitted Hazardous Materials

ARTICLE II

PREMISES AND TERM

Section 2.1 Premises.

The Landlord hereby leases to the Tenant, and the Tenant hereby leases from the Landlord, for the Term, the Premises. The Premises shall exclude the office entry and office lobby of the Building, first floor elevator lobby, first floor mail room, atrium, bridges and walkways, the common stairways and stairwells, elevators and elevator wells, boiler room,· sprinklers, sprinkler rooms, elevator rooms, mechanical rooms, loading and receiving areas. electric and telephone closets, janitor closets, loading docks and bays, rooftop mechanical penthouses to the extent they house Building equipment and pipes, ducts, conduits, wires, and appurtenant fixtures and equipment serving exclusively or in common other parts of the Building. If the Premises at any time includes less than the entire rentable floor area of any floor of the Building, the Premises shall also exclude the common corridors, vestibules, elevator lobby and toilets located on such floor. Tenant is currently in possession of the Premises under the Existing Leases and Tenant acknowledges that, except as expressly set forth in this Lease, there have been no representations or warranties made by or on behalf of the Landlord with respect to the Premises, the Building or the Property or with respect to the suitability of any of them for the conduct of the Tenant's business. Tenant accepts the Premises in its AS IS condition and agrees that Landlord makes no representation or warranty with respect to the condition of the Premises or the Building and, except for Landlord's express obligations set forth in this Lease and in **Exhibit C** attached hereto, Landlord shall not be required to perform any work, install any fixtures or equipment, contribute any funds or render any services to make the Building or the Premises ready or suitable for Tenant's use or occupancy under this Lease.

The Existing Leases shall terminate at the close of the day on the day immediately preceding the Commencement Date (the "**Existing Lease Termination Date**") as if the Existing Lease Termination Date was the expiration date of the Existing Leases and shall be superseded by this Lease, except that any obligations or liabilities, including indemnification obligations, that expressly survive the expiration or termination of the Existing Leases shall survive such termination as provided in the Existing Leases.

Section 2.2 Appurtenant Rights.

The Tenant shall have, as appurtenant to the Premises, the nonexclusive right to use in common with others, subject to reasonable rules of general applicability to occupants of the Building from time to time made by the Landlord of which the Tenant is given notice; (i) the office entry, office vestibules and office lobby of the Building, first floor mailroom, the common stairways, elevators, elevator wells, boiler room, elevator rooms, sprinkler rooms, mechanical rooms, electric and telephone closets, janitor closets, loading docks and bays, rooftop mechanical penthouses to the extent they house Building equipment, and the pipes, sprinklers, ducts, conduits, wires and appurtenant fixtures and equipment serving the Premises in common with others, (ii) common walkways and driveways necessary or reasonably convenient for access to the Building, (iii) access to loading area and freight elevator subject to Landlord's reasonable rules and regulations in effect from time to time and applicable to all occupants of-the Building and of which the Tenant is given notice, (iv) if the Premises at any time include less than the entire rentable floor area of any floor, the common toilets, corridors, vestibules, and elevator lobby of such floor, and (v) such other common areas and facilities of the Building and the Land necessary for access to or beneficial use of the Premises. Under the Existing Leases, Tenant has installed equipment on the roof of the Building ("**Roof Equipment**") in the locations marked on **Exhibit F** attached hereto (the "**Tenant Roof Areas**"). Subject to compliance with all applicable Legal Requirements, Landlord hereby approves and consents to Tenant's continued use of the roof in the Tenant Roof Areas for the operation, maintenance and replacement of Tenant's existing Roof Equipment, provided, however, Tenant's use of and access to the roof and Tenant's operation of the Roof Equipment shall be subject to Tenant's obligations under the Lease, including, without limitation, Tenant's repair and maintenance and insurance and indemnification obligations under the Lease.

Section 2.3 Landlord's Reservations.

The Landlord reserves the right from time to time, at reasonable times and upon prior written notice to Tenant (except in emergency situations), without unreasonable interference with the Tenant's use: (i) to install, use, maintain, repair, replace and relocate for service to the Premises and/or other parts of the Building, pipes, ducts, conduits, wires and appurtenant fixtures and equipment, wherever located in the Premises or the Building, and (ii) to alter or relocate any other common facility, provided that substitutions are substantially equivalent or better. Landlord acknowledges that Tenant has or will have socalled "clean rooms" located within the Premises, and Landlord shall not enter Tenant's "clean rooms" without Tenant's prior consent and without accompaniment by a representative of Tenant, except in case of emergency.

Section 2.4 Parking.

The Landlord shall provide and the Tenant shall pay for parking privileges for use by the Tenant's employees, business invitees and visitors in accordance with **Exhibit A**. The Landlord shall operate, or cause to be operated, a parking garage known as the 80 Landsdowne Street Garage (the "**Garage**") to serve the Building and other buildings in University Park. The Tenant's parking privileges shall be initially located in the Garage and shall be on a nonexclusive basis (i.e., no reserved spaces); provided, however, Landlord agrees that the Garage shall be operated so as to maintain therein sufficient spaces to accommodate Tenant's parking privileges

described in **Exhibit A**. However, Tenant's parking privileges may be relocated by Landlord, upon reasonable prior notice to Tenant from Landlord, to another parking garage within University Park. All monthly users will have unlimited access to the Garage twentyfour (24) hours per day, seven days per week.

The Tenant agrees that it and all persons claiming by, through and under it, shall at all times abide by the reasonable rules and regulations promulgated by the Landlord, of which Tenant is given written notice, with respect to the use of the parking facilities provided by the Landlord pursuant to this Lease. If there are any conflicts between the provisions of such rules and regulations and any provisions of this Lease, the provisions of this Lease shall govern.

Charges for Tenant's parking privileges hereunder shall be at the current monthly rate applicable for such spaces and shall constitute Additional Rent and shall be payable monthly to Landlord, during the Term, from and after the Commencement Date at the time and in the fashion in which Annual Fixed Rent under this Lease is payable.

At any time during the Term Landlord shall have the right to assign Landlord's obligations to provide parking, as herein set forth, together with Landlord's right to receive Additional Rent for such parking spaces as herein provided, to a separate entity created for the purpose of providing the parking privileges set forth herein. In such event, Landlord and Tenant agree to execute and deliver appropriate documentation, including documentation with the new entity, reasonably necessary to provide for the new entity to assume Landlord's obligations to provide the parking privileges to Tenant as specified herein and for the Tenant to pay the Additional Rent attributable to the parking privileges directly to the new entity.

Notwithstanding the foregoing, any failure of such assignee to provide to Tenant the parking privileges set forth herein shall be a Landlord default under this Lease.

Section 2.5 Commencement Date.

"**Commencement Date**" shall be the Effective Date of this Lease.

Section 2.6 Extension Option.

Provided that there has been no Event of Default which is uncured and continuing on the part of the Tenant and the Tenant is, as of the date of exercise and as of the commencement date of the Extension Term (as such term is defined below), actually occupying sixty percent (60%) or more of the Premises for its own business purposes, the Tenant shall have the right to extend the Term hereof for one (1) additional period of five (5) years (the "**Extension Term**").

ARTICLE I. Such right to extend the Term shall be exercised by the giving of notice by Tenant to Landlord at least nine (9) months prior to the expiration of the then current Term. Upon the giving of such notice, this Lease and the Term hereof shall be extended for an additional term of five (5)years without the necessity for the execution of any additional documents except a document evidencing the Annual Fixed Rent for the Extension Term to be

determined as set forth below. Time shall be of the essence with respect to the Tenant's giving notice to extend the Term.

(1) The Extension Term shall be upon all the terms, conditions and provisions of this Lease except the Annual Fixed Rent during such five (5) year Extension Term shall be the then Extension Fair Rental Value of the Premises for such Extension Term to be determined under this Section 2.6.

(2) For purposes of the Extension Term described in this Section 2.6, the "**Extension Fair Rental Value**" of the Premises shall mean the then current fair market annual rent for leases of other space similarly improved in the commercial markets that surround the MIT campus (East Cambridge/Kendall Square/Cambridgeport), taking into account the condition to which such premises, have been improved (excluding Tenant Removable Property) and the economic terms and conditions specified in this Lease that will be applicable thereto, including the savings, if any, due to the absence or reduction of brokerage commissions. The Landlord and Tenant shall endeavor to agree upon the Extension Fair Rental Value of the Premises within thirty (30) days after the Tenant has exercised the option for the Extension Term. If the Extension Fair Rental Value of the Premises is not agreed upon by the Landlord and the Tenant within this time frame, each of the Landlord and the Tenant shall retain a real estate professional with at least ten (10) years continuous experience in the business of appraising or marketing (including brokering) similar commercial real estate in the Cambridge, Massachusetts area who shall, within thirty (30) days of his or her selection, prepare a written report summarizing his or her conclusion as to the Extension Fair Rental Value. The Landlord and the Tenant shall simultaneously exchange such reports; provided, however, if either party has not obtained such a report within fortyfive (45) days after the last day of the thirty (30) day period referred to above in this Section 2.6, then the determination set forth in the other party's report shall be final and binding upon the parties. If both parties receive reports within such time and the lower determination is within ten percent (10%) of the higher determination, then the average of these determinations shall be deemed to be the Extension Fair Rental Value for the Premises. If these determinations differ by more than ten percent (10%), then the Landlord and the Tenant shall mutually select a person with the qualifications stated above (the "**Final Professional**") to resolve the dispute as to the Extension Fair Rental Value for the Premises. If the Landlord and the Tenant cannot agree upon the designation of the Final Professional within ten (10) days of the exchange of the first valuation reports, either party may apply to the American Arbitration Association, the Greater Boston Real Estate Board, or any successor thereto, for the designation of a Final Professional. Within ten (10) days of the selection of the Final Professional, the Landlord and the Tenant shall each submit to the Final Professional a copy of their respective real estate professional's determination of the Extension Fair Rental Value for the Premises. The Final Professional shall then, within thirty (30) days of his or her selection, prepare a written report summarizing his or her conclusion as to the Extension Fair Rental Value (the "**Final Professional's Valuation**"). The Final Professional shall give notice of the Final Professional's Valuation to the Landlord and the Tenant and such decision shall be final and binding upon the Landlord and the

Tenant. Each party shall pay the fees and expenses of its real estate professional and counsel, if any, in connection with any proceeding under this paragraph, and one-half of the fees and expenses of the Final Professional. In the event that the commencement of the Extension Term occurs prior to a final determination of the Extension Term Fair Rental Value therefor (the "**Extension Rent Determination Date**"), then the Tenant shall pay the Annual Fixed Rent at the then applicable Fixed Rental Rate (such amount being referred to as the "**Interim Rent**"). If the Annual Fixed Rent as finally determined for the Extension Term is determined to be greater than the Interim Rent, then the Tenant shall pay to the Landlord the amount of the underpayment for the period from the end of the initial term of this Lease until the Extension Rent Determination Date within thirty (30) days of the Extension Rent Determination Date. If the Annual Fixed Rent as finally determined for the Extension Term is determined to be less than the Interim Rent, then the Landlord shall credit the amount of such overpayment against the monthly installments of Annual Fixed Rent coming due after the Extension Rent Determination Date.

Section 2.7 Right of First Offer.

Landlord hereby grants to Tenant during the Term a right of first offer ("**ROFO**") to lease any leaseable space in the Building that becomes Available to lease (the "**ROFO Space**") on the terms set forth below. "**Available**" means that the ROFO space is vacant and free of any present or future possessory right now or, to the extent specified in clause (ii) of the following sentence, hereafter existing in favor of any third party. Anything to the contrary contained herein notwithstanding, Tenant's ROFO is subordinate to (i) any right of offer, right of first refusal, renewal right or similar right or option in favor of any third party existing as of the date of this Lease, and (ii) Landlord's right to (x) extend the term of lease of any now or then existing tenant or occupant, or such tenant's or occupant's affiliate or successor or (y) enter into a new lease with any now or then existing tenant or occupant, or such tenant's or occupant's affiliate or successor, whether or not pursuant to an option to renew. Landlord represents that the only tenant in the Building with superior rights to any ROFO Space pursuant to clause (i) above is Agios Pharmaceuticals, Inc., together with its successors and assigns (such superior right being a right of expansion and extension only). At or before such time as Landlord has decided to commence the marketing of the ROFO Space in anticipation of such space becoming Available, Landlord shall deliver a written notice to Tenant (the "**ROFO Notice**") setting forth the basic business terms on which the ROFO Space is to be marketed. Tenant shall have fifteen (15) days after it has received the ROFO Notice within which to reply to Landlord in writing of its election to lease the ROFO Space upon the terms and conditions in the ROFO Notice (time being of the essence with respect to the giving of such notice by Tenant to Landlord). Tenant shall not have the option to include in the Premises less than the entire ROFO Space described in the ROFO Notice. If Tenant accepts Landlord's offer, then upon the date on which Landlord delivers vacant possession of the ROFO Space to Tenant the ROFO Space shall become part of the Premises upon the terms set forth in the ROFO Notice and otherwise upon all of the terms and conditions of this Lease. Promptly after any such election by Tenant, Landlord and Tenant shall confirm the occurrence thereof and the inclusion of the ROFO Space in the Premises as aforesaid by executing an amendment to this Lease in form and substance reasonably satisfactory to

Landlord and Tenant; provided, that failure by Landlord or Tenant to execute the same shall not affect the inclusion of the ROFO Space in the Premises in accordance with this Section 2.7.

If Tenant refuses the ROFO Space or fails to respond to Landlord's ROFO Notice within such 15day period, then (i) Landlord may enter into one or more leases of the applicable ROFO Space with third parties on such terms and conditions as Landlord shall determine, and (ii) the ROFO with respect to such ROFO Space shall be null and void and of no further force and effect; provided, however, that Landlord shall not enter into any such lease on "terms and conditions more favorable to a prospective tenant" without first re-offering such ROFO Space to Tenant as hereinafter provided. As used herein, "terms and conditions not more favorable to a prospective tenant" shall mean total rent of ninetytwo and one-half percent (92.5%) or less than the total rent stated in the ROFO Notice for the ROFO Space and under similar other terms and conditions as proposed in the ROFO Notice. If Landlord wishes to lease the ROFO Space on terms and conditions more favorable to a prospective tenant, Landlord shall first re-offer the ROFO Space to Tenant on such more favorable terms and conditions in accordance the procedures set forth in the first paragraph of this Section 2.7 ("**Additional ROFO Notice**"). Tenant shall have one and only one further right to exercise such ROFO pursuant to and in accordance with the terms of this Section but must make such election within five (5) days after it has received the Additional ROFO Notice (time being of the essence with respect to the giving of such notice by Tenant to Landlord).

ARTICLE III

RENT AND OTHER PAYMENTS

Section 3.1 Annual Fixed Rent.

From and after the Commencement Date, the Tenant shall pay, without notice or demand, monthly installments of onetwelfth (1/12) of the Annual Fixed Rent in effect and applicable to the Premises, in advance, on the first day of each calendar month of the Term and of the corresponding fraction of said onetwelfth (1/12) for any fraction of a calendar month at the Commencement Date or end of the Term. The Annual Fixed Rent applicable to the Premises during the Term shall be as set forth below:

RENTAL PERIOD	ANNUAL FIXED RENT	MONTHLY PAYMENT	PER RSF
July 1, 2020 through February 28, 2021	$4,434,395.22	$369,532.94	$77.58
March 1, 2021 through February 28, 2022	$4,567,575.69	$380,631.31	$79.91
March 1, 2022 – February 28, 2023	$5,830,218.00	$485,851.50	$102.00
March 1, 2023 - February 29, 2024	$6,005,124.54	$500,427.05	$105.06
March 1, 2024 – February 28, 2025	$6,185,278.28	$515,439.86	$108.21
March 1, 2025 – February 28, 2026	$6,370,836.62	$530,903.05	$111.46
March 1, 2026 – February 28, 2027	$6,561,961.72	$546,830.14	$114.80
March 1, 2027 – February 29, 2028	$6,758,820.57	$563,235.05	$118.25
March 1, 2028 – February 28, 2029	$6,961,585.19	$580,132.10	$121.79
March 1, 2029 – February 28, 2030	$7,170,432.75	$597,536.06	$125.45
March 1, 2030 – February 28, 2031	$7,385,545.73	$615,462.14	$129.21
March 1, 2031 – February 29, 2032	$7,607,112.10	$633,926.01	$133.09

Section 3.2 Real Estate Taxes.

From and after the Commencement Date, during the Term, the Tenant shall pay to the Landlord, as Additional Rent, the Tenant's Tax Expenses Allocable to the Premises (as such term is hereinafter defined) in accordance with this Section 3.2. The following terms shall have the meanings indicated or referred to below:

(3) "**Tax Year**" means the 12month period beginning July 1 each year or if the appropriate governmental tax fiscal period shall begin on any date other than July 1, such other date.

(4) "**Tenant's Tax Expense Allocable to the Premises**" means that portion of the Landlord's Tax Expenses for a Tax Year which bears the same proportion thereto as the rentable floor area of the Premises (from time to time) bears to the total rentable floor area of the Building; provided, however, in the event that retail space in the Building is valued by the assessing authorities differently than the office space in the Building due solely on the basis of its use as retail space, the Tenant's Tax Expense Allocable to the Premises with respect to any Tax Year will be adjusted as is appropriate so that the Tenant is responsible for the portion of the Real Estate Taxes which are properly allocable to the Premises, a reasonably determined by Landlord based on information with respect to the assessment process made available by the assessing authorities.

(5) "**The Landlord's Tax Expenses**" with respect to any Tax Year means the aggregate Real Estate Taxes on the Property with respect to that Tax Year, reduced by any abatement or other tax refunds or credits received with respect to that Tax Year, plus any fees paid to third party consultants used by Landlord in connection with the calculation, abatement or refunding of Real Estate Taxes.

(6) "**Real Estate Taxes**" means (i) all taxes and special assessments of every kind and nature assessed by any governmental authority on the Property; and (ii) reasonable expenses of any proceedings for abatement of such taxes or special assessments. Any special assessments to be included within the definition of "**Real Estate Taxes**" for any Tax Year shall be limited to the amount of the installment (plus any interest thereon) of such special assessment (which shall be payable over the longest period permitted by law) required to be paid during such Tax Year. There shall be excluded from Real Estate Taxes all income, estate, succession, inheritance, excess profit, franchise and transfer taxes; provided, however, that if at any time during the Term the present system of ad valorem taxation of real property shall be changed so that in lieu of the whole or any part of the ad valorem tax on real property, there shall be assessed on the Landlord a capital levy or other tax on the gross rents received with respect to the Property, or a federal, state, county, municipal or other local income, franchise, excise or similar tax, assessment, levy or charge (distinct from any now in effect) based, in whole or in part, upon any such gross rents, then any and all of such taxes, assessments, levies or charges, to the extent so based, shall be deemed to be included within the term "**Real Estate Taxes**."

Payments by the Tenant on account of the Tenant's Tax Expenses Allocable to the Premises shall be made monthly at the time and in the fashion herein provided for the payment of Annual Fixed Rent and shall be in the amount of onetwelfth (1/12) of the Tenant's Tax Expenses Allocable to the Premises for the current Tax Year as reasonably estimated by the Landlord.

Not later than one hundred twenty (120) days after the end of each Tax Year, the Landlord shall render the Tenant a statement in reasonable detail showing for the preceding Tax Year or fraction thereof, as the case may be, Real Estate Taxes for such Tax Year, and any abatements or refunds of such Real Estate Taxes. Expenses incurred in obtaining any tax abatement or refund may be charged against such tax abatement or refund before the adjustments are made for the Tax Year. If at the time such statement is rendered it is determined with respect to any Tax Year, that the Tenant has paid (i) less than the Tenant's Tax Expenses Allocable to the Premises or (ii) more than the Tenant's Tax Expenses Allocable to the Premises, then, in the case of clause "(i)" the Tenant shall pay to the Landlord, as Additional Rent, within thirty (30) days of such statement the amount of such underpayment and, in the case of clause "(ii)" the Landlord shall credit the amount of such overpayment against the next monthly installments of the Tenant's Tax Expenses Allocable to the Premises next thereafter coming due (or refund such overpayment if the Term has expired or earlier terminated within thirty (30) days after such expiration or termination).

To the extent that Real Estate Taxes shall be payable to the taxing authority in installments with respect to periods other than a Tax Year, the statement to be furnished by the Landlord shall be rendered and payments made on account of such installments. Notwithstanding the foregoing provisions, no decrease in Landlord's Tax Expenses with respect to any Tax Year shall result in a reduction of the amount otherwise payable by Tenant if and to the extent any such decrease is attributed by the assessing authority solely to the vacant space in the Building based on information with respect to the assessment process made available by the assessing authorities to Landlord; provided, however, that in no event shall Landlord collect and retain more than one hundred percent (100%) of the Landlord's Tax Expenses for the Property.

Section 3.3 Operating Expenses.

From and after the Commencement Date, during the Term, the Tenant shall pay to the Landlord, as Additional Rent, the Tenant's Operating Expenses Allocable to the Premises, as hereinafter defined, in accordance with this Section 3.3. The following terms shall have the meanings indicated or referred to below:

(7) "**Tenant's Operating Expenses Allocable to the Premises**" means that portion of the Operating Expenses for the Property which bears the same proportion thereto as the rentable floor area of the Premises bears to the total rentable floor area of the Building.

(8) "**Operating Expenses for the Property**" means Landlord's cost of operating, cleaning, maintaining and repairing the Property, the roads, driveways and walkways for providing access to the Building, and shall include without limitation the

cost of services on **Exhibit D**; premiums for insurance carried pursuant to Section 7.4; deductible amounts from any fire or other casualty insurance claim of the Landlord (not to exceed $25,000.00, and which amount may be increased during the Term and any Extension Term provided such increase is reasonable and customary); reasonable compensation and all fringe benefits, worker's compensation insurance premiums and payroll taxes paid to, for or with respect to all persons (University Park/Building general manager and below) directly engaged in the managing, operating, maintaining or cleaning of the Property; interior landscaping and maintenance; steam, water, sewer, gas, oil, electricity, telephone and other utility charges (excluding such utility charges which are either separately metered or separately chargeable to Tenant or other Building tenants); cost of building and cleaning supplies used in cleaning and disinfecting the common areas of the Property; the costs of providing conditioned air for HVAC purposes (excluding such costs which are either separately metered or separately chargeable to tenants for additional or special services and those charges related to the cost of operating base Building equipment not used by Tenant)); the costs of routine environmental management programs operated by Landlord (including, but not limited to, periodic testing of air quality, temperature and humidity and the proper operation of the HVAC system); rental costs for equipment used in the operating, cleaning, maintaining or repairing of the common areas of the Property, or the applicable fair market rental charges in the case of equipment owned by Landlord; cost of cleaning, including disinfecting; cost of maintenance, repairs and replacements (other than repairs and replacements reimbursed from contractors under guarantees or made by the Landlord pursuant to the Work Letter, or otherwise reimbursed from any tenant of the Property or for which Landlord otherwise receives reimbursement); cost of snow removal; cost of landscape, streetscape, graphics, signage and banner maintenance; security services (security shall be building standard security. Tenant shall be responsible for the cost of any additional security services it may require due to its business operations); payments under service contracts with independent contractors; management fees at reasonable rates consistent with the type of occupancy and the service rendered; the cost of any capital improvement either required by law or regulation or which reduces the Operating Expenses for the Property or which improves the management and operation of the Property in a manner acceptable to Tenant shall be amortized in accordance with generally accepted accounting principles, together with interest on the unamortized balance at the base lending rate announced by a major commercial bank designated by the Landlord (the "**Prime Rate**"), or such higher rate (not to exceed the Prime Rate plus three percent [3%]) as may have been paid by the Landlord on funds actually borrowed for the purpose of constructing such capital improvements; charges reasonably allocated to the Building on a prorata basis for the cost of operating, cleaning, maintaining and repairing of University Park common areas, facilities, amenities and open spaces; and all other reasonable and necessary expenses paid in connection with the operation, cleaning, maintenance, repair and administration of the Property. If, for any reason, portions of the rentable area of the Building not included in the Premises were not occupied by tenants or any tenants in the Building were supplied with a different level of standard services than those supplied to the Tenant under this Lease. Landlord's Operating Expenses for the Property shall include the amounts reasonably determined by Landlord which would have

been incurred if all of the rentable area in the Building were occupied and were supplied with the same level of standard services as supplied to the Tenant under this Lease. Additionally, if certain services or facilities supplied under this Lease by Landlord do not from time to time, in Landlord's reasonable judgment, serve all of the users in the Building (i.e.. office, retail, banking, restaurant, etc.), then the costs associated therewith shall be equitably allocated by Landlord, in its reasonable judgment, exclusively or proportionately to and among only those portions of the total rentable floor area of the Building that are benefiting from such services or facilities.

Operating Expenses for the Property shall not include the following: the Landlord's Tax Expense; cost of repairs or replacements (i) resulting from eminent domain takings, (ii) to the extent reimbursed by insurance, (iii) resulting from correcting defects in the work for which the Landlord is obligated pursuant to agreement with any other tenant in the Building, or those covered by builder's or contractor's warranties or guaranties, (iv) required, above and beyond ordinary periodic maintenance, to maintain in serviceable condition the major structural elements of the Building, including the roof, exterior walls and floor slabs; replacement or contingency reserves; cost of capital improvements except to the extent permitted in the preceding paragraph; ground lease rents or payment of debt obligations; accounting, legal and other professional fees for matters not relating to the normal administration and operation of the Property; promotional, advertising, public relations or brokerage fees and commissions paid in connection with services rendered for securing or renewing leases; services provided for the exclusive use or benefit of retail tenants in the Building; costs of renovating or otherwise improving space for tenants or other occupants of the Building; any cost of reconstruction or other work occasioned by fire, windstorm, or by any other casualty except as specifically permitted in the preceding paragraph; or by the exercise of the right of eminent domain; interest and principal payments on loans or any rental payments on any ground leases or legal fees or other costs of defending or prosecuting any lawsuits or disputes with any mortgagee or ground lessor; advertising expenses and leasing commissions and any other cost in connection with leasing of space in the Building; any cost or expenditure for which the Landlord is reimbursed, whether by insurance proceeds or otherwise; the cost of constructing and maintaining the 20 Sidney Street Garage or any temporary parking area provided to the Tenant pursuant to Section 2.4. The Landlord's Operating Expenses shall be reduced by the amount of any proceeds, payments, credits or reimbursements which the Landlord receives from sources other than tenants and which are applicable to such Operating Expenses for the Property.

Payments by the Tenant on account of Tenant's Operating Expenses Allocable to the Premises shall be made monthly at the time and in the fashion herein provided for the payment of Annual Fixed Rent. The amount so to be paid to the Landlord shall be an amount from time to time reasonably estimated by the Landlord to be sufficient to aggregate a sum equal to the Tenant's share of the Operating Expenses for the Property for each fiscal year of Landlord.

Not later than ninety (90) days after the end of each fiscal year of Landlord or fraction thereof during the Term or fraction thereof at the end of the Term, the Landlord shall render the Tenant a statement ("**Landlord's Statement**") in reasonable detail and according to usual accounting practices certified by a representative of the Landlord, showing for the preceding

fiscal year of Landlord or fraction thereof, as the case may be, the Operating Expenses for the Property and the Tenant's Operating Expenses Allocable to the Premises. Said statement to be rendered to the Tenant also shall show for the preceding fiscal year of Landlord or fraction thereof, as the case may be, the amounts of Operating Expenses already paid by the Tenant. If at the time such statement is rendered it is determined with respect to any fiscal year, that the Tenant has paid (i) less than the Tenant's Operating Expenses Allocable to the Premises or (ii) more than the Tenant's Operating Expenses Allocable to the Premises, then, in the case of clause "(i)" the Tenant shall pay to the Landlord, as Additional Rent, within thirty (30) days of such statement the amounts of such underpayment and, in the case of clause "(ii)" the Landlord shall credit the amount of such overpayment against the next monthly installment of the Tenant's Additional Rent (or refund such overpayment if the Term has expired or earlier terminated within thirty (30) days after such expiration or termination).

Section 3.4 Other Utility Charges.

During the Term, the Tenant shall pay directly to the provider of the service all separately metered charges for electrical service in the Premises (including, but not limited to, lights, electrical outlets, VAV boxes and any other special equipment exclusively servicing the Premises, whether located within or outside of the Premises), and shall pay to Landlord as Additional Rent its allocable share of the actual costs charged to Landlord by the providers of water, sewer and other services and utilities which are based on submetered usage.

Section 3.5 Above-standard Services.

If the Tenant requests and the Landlord elects to provide any services to the Tenant in addition to those described in **Exhibit D**, the Tenant shall pay to the Landlord, as Additional Rent, the amount billed by Landlord for such services at Landlord's rates as are from time to time in effect, which rates shall reflect the actual cost to Landlord of providing such services, including reasonable actual out-of-pocket costs to third parties and reasonable costs associated with the use of internal staff of either Landlord or affiliated entities of Landlord (but only to the extent such costs are not included in Operating Expenses by Landlord). If the Tenant has requested that such services be provided on a regular basis, the Tenant shall, if requested by the Landlord, pay for such services at the time and in the fashion in which Annual Fixed Rent under this Lease is payable. Otherwise, the Tenant shall pay for such additional services within thirty (30) days after receipt of an invoice from the Landlord. Landlord shall have the right from time to time to inspect Tenant's utility meters and to install timers or submeters thereon for purposes of monitoring above-standard service usage.

Section 3.6 No Offsets.

Annual Fixed Rent and Additional Rent shall be paid by the Tenant without offset, abatement or deduction except as specifically permitted herein.

Section 3.7 Tenant's Audit Right.

Landlord agrees to make its books and records relating to the Operating Expenses for the Property and the Landlord's Tax Expenses available for examination during normal business hours at Landlord's principal office in Cleveland, Ohio upon reasonable notice by Tenant; provided that any such examination or audit shall be by an employee of Tenant or an accounting firm or property management firm the fees of which are not determined on a contingency fee basis (as applicable, the "**Examiner**"), and such examination shall be at Tenant's sole cost and expense and may be conducted only if a written notice is sent by Tenant requesting the same not later than ninety (90) days following delivery of Landlord's Statement. In making such examination, Tenant agrees, and shall cause its designated Examiner to agree, to keep confidential any and all information contained in such books and records and any dispute or settlement between Landlord and Tenant arising out of such examination.

If the parties agree or it is finally determined that a discrepancy which involves an overcharge of Tenant's Operating Expenses Allocable to the Premises or the Tenant's Tax Expense Allocable to the Premises for the period covered by such Landlord's Statement, Landlord shall provide Tenant with a credit against the next installment(s) of Tenant's Additional Rent in the amount of the overpayment by Tenant. If such discrepancy as so agreed upon or determined involves an overcharge to Tenant of more than five percent (5%) in the aggregate for such year, then Landlord shall be responsible for the reasonable hourly fees of the accounting firm or auditing firm conducting the audit.

ARTICLE IV

ALTERATIONS

Section 4.1 Consent Required for Tenant's Alterations.

The Tenant may make interior alterations and additions of a decorative or cosmetic nature (as defined below), the cost of which does not exceed $50,000 in the aggregate in any twelve (12) month period, without the need of any approval from Landlord but after not less than ten (10) days prior written notice and evidence of insurance for such alterations has been delivered to Landlord ("**Cosmetic Alterations**"). The Tenant shall not make alterations or additions to the Premises except in accordance with the University Park Tenant Design and Construction Manual from time to time in effect and the plans and specifications therefor first approved by the Landlord, which approval shall not be unreasonably withheld, conditioned or delayed. Tenant shall be responsible for Landlord's reasonable out-of-pocket costs for any third party architectural, engineering or other consulting services reasonably required by Landlord in connection with Landlord's review and approval of Tenant's plans and specifications. The Landlord shall not be deemed unreasonable for withholding approval of any alterations or additions which (i) would adversely affect any structural or exterior element of the Building, any area or element outside of the Premises, or any facility serving any area of the Building outside of the Premises or any publicly accessible major interior features of the Building, (ii) will require unusual expense to readapt the Premises to normal use unless the Tenant first gives assurance reasonably acceptable to the Landlord that such readaptation will be made prior to the expiration of the Term without expense to the Landlord, or (iii) which would not be compatible

with existing mechanical or electrical, plumbing, HVAC or other systems in the Building, or use more than Tenant's prorata share of Building capacities, in each case, as reasonably determined by the Landlord.

Section 4.2 Ownership of Alterations.

All alterations and additions (including any alterations, installations, equipment and systems identified on **Exhibit G** attached hereto as "Landlord Retained Property") shall become part of the Building and owned by the Landlord except for the items listed as "Tenant Removable Property" on **Exhibit G**, as such **Exhibit G** may be amended upon the written agreement of Landlord and Tenant. The Tenant Removable Property shall be removed by Tenant upon the expiration or earlier termination of this Lease. If Tenant fails to inform Landlord, in writing, at least ten (10) days prior to the installation of the alteration or addition, thereby preventing Landlord from making a determination as to whether it will want such addition or alteration removed from the Premises prior to its installation, then Landlord may require such removal without exception. All movable equipment and furnishings not attached to the Premises shall remain the property of the Tenant and shall be removed by the Tenant upon termination or expiration of this Lease. The Tenant shall repair any damage caused by the removal of any alterations, additions or personal property from the Premises, including the Tenant Removable Property.

Section 4.3 Construction Requirements for Alterations.

All construction work by the Tenant shall be done in a good and workmanlike manner employing only firstclass materials and in compliance with Landlord's construction rules and regulations then in effect and with all applicable laws and all lawful ordinances, regulations and orders of governmental authority and insurers of the Building. The Landlord or Landlord's authorized agent may (but without any implied obligation to do so) inspect the work of the Tenant at reasonable times and shall give notice of observed defects. All of the Tenant's alterations and additions and installation of furnishings shall be coordinated with any work being performed by the Landlord and in such manner as to maintain harmonious labor relations and not to damage the Building or interfere with Building construction or operation and, except for installation of furnishings, shall be performed by contractors or workmen first approved by the Landlord, which approval the Landlord agrees not to unreasonably withhold or delay. The Tenant, before starting any work, shall receive and comply with the University Park Tenant Design and Construction Manual from time to time in effect and any of Landlord's other construction rules and regulations for the Building and shall cause Tenant's contractors to comply therewith, shall secure all licenses and permits necessary therefor, shall deliver to the Landlord a statement of the names of all its contractors and subcontractors and the estimated cost of all labor and material to be furnished by them, and shall deliver to Landlord security satisfactory to the Landlord protecting the Landlord against liens arising out of the furnishing of such labor and material; and cause each contractor to carry worker's compensation insurance in statutory amounts covering all the contractors' and subcontractors' employees and comprehensive general public liability insurance with such limits as the Landlord may require reasonably, but in no event less than $5,000,000 (per occurrence)/$10,000,000 (general

aggregate) or in such other amounts as Landlord may reasonably require covering personal injury and death and property damage (all such insurance to be written in companies approved reasonably by the Landlord and insuring the Landlord, Landlord's managing agent, ground lessor and first mortgagee, and the Tenant as well as the contractors and to contain a requirement for at least thirty (30) days' notice to the Landlord prior to cancellation, nonrenewal or material change), and to deliver to the Landlord certificates of all such insurance.

Section 4.4 Payment for Tenant Alterations.

The Tenant agrees to pay promptly when due the entire cost of any work done on the Premises by the Tenant, its agents, employees or independent contractors, and not to cause or permit any liens for labor or materials performed or furnished in connection therewith to attach to the Premises or the Property and promptly to discharge any such liens which may so attach.

If any such lien shall be filed against the Premises or the Property as a result of any work done on the Premises by Tenant, its agents, employees or independent contractors, and the Tenant shall fail to cause such lien to be discharged within ten (10) days after the filing thereof, the Landlord may cause such lien to be discharged by payment, bond or otherwise without investigation as to the validity thereof or as to any offsets or defenses which the Tenant may have with respect to the amount claimed. The Tenant shall reimburse the Landlord, as Additional Rent, for any reasonable cost so incurred and shall indemnify and hold harmless the Landlord from and against any and all claims, costs, damages, liabilities and expenses (including reasonable attorneys' fees) which may be incurred or suffered by the Landlord by reason of any such lien or its discharge.

ARTICLE V

RESPONSIBILITY FOR CONDITION OF BUILDING AND PREMISES

Section 5.1 Maintenance of Building and Common Areas by Landlord.

Except as otherwise provided in Article VIII, the Landlord shall make such repairs to all structural elements of the Building, including without limitation, the roof, exterior and other loadbearing walls and floor and floor slabs as may be necessary to keep and maintain the same in good order, condition and repair, and maintain and make, or cause to be maintained and made, such repairs to the Common Building Areas as may be necessary to keep them in good order, condition and repair, including without limitation, the glass in the exterior walls of the Building, and all mechanical systems and equipment serving the Building tenants generally and not exclusively serving the Premises. The Landlord shall further perform the services set forth on **Exhibit D** attached hereto. The Landlord shall in no event be responsible to the Tenant for any condition in the Premises or the Building to the extent caused by an act or neglect of the Tenant, or any invitee or contractor of the Tenant. Tenant, its employees, agents and contractors, shall reasonably cooperate in the ongoing conduct of any environmental management programs conducted by Landlord, and shall participate and comply with the reasonable requirements of such programs to the extent Tenant is notified of same in writing and such requirements and recommendations pertain to the operations or maintenance responsibilities of the Tenant under

this Lease, such requirements do not unreasonably interfere with Tenant's use of the Premises. Except as otherwise provided in this Lease. Landlord's costs in performing the obligations contained in this Section 5.1 shall be reimbursed by the Tenant to the extent provided in Section 3.3.

Landlord covenants that it shall use reasonable efforts to operate, clean, repair, maintain and manage the Property efficiently and economically.

Section 5.2 Maintenance of Premises by Tenant.

The Tenant shall keep neat and clean and maintain in good order, condition and repair the Premises and every part thereof, including mechanical equipment and other systems exclusively serving the Premises, reasonable wear and tear excepted, and further excepting those repairs for which the Landlord is responsible pursuant to (i) Section 5.1 and (ii) Article 8 with respect to damage by fire or other casualty and/or as a consequence of the exercise of the power of eminent domain, and shall surrender the Premises at the end of the Term in such condition, first removing all goods and effects of the Tenant (including all Tenant Removable Property) and, to the extent specified by the Landlord by notice to the Tenant pursuant to Section 4.2, all specialized alterations and additions, and repairing any damage caused by such removal and restoring the Premises and leaving them clean and neat. The Tenant shall be responsible for the cost of repairs which may be made necessary by reason of damages to the Building by the Tenant, or any of the Tenant's agents, employees, contractors, vendors, subtenants, licensees or invitees of the Tenant or any party claiming by, through or under Tenant (the "**Tenant Parties**"). All of Tenant's data, networking, security and other systems and equipment shall be maintained by Tenant. Tenant shall, upon request, provide evidence reasonably satisfactory to Landlord that it has available the necessary expertise to properly conduct and carry out this responsibility, either through persons employed by the Tenant or through contracts with independent service organizations, or a combination thereof.

Section 5.3 Delays in Landlord's Services.

The Landlord shall not be liable to the Tenant for any compensation or reduction of rent by reason or inconvenience or annoyance or for loss of business arising from the necessity of the Landlord or its agents entering the Premises in accordance with Section 2.3 hereof for any purposes authorized in this Lease, or for repairing the Premises as required or permitted herein or any portion of the Building. In case the Landlord is prevented or delayed from making any repairs, alterations or improvements, or furnishing any services or performing any other covenant or duty to be performed on the Landlord's part, by reason of any External Cause, the Landlord shall not be liable to the Tenant therefor, nor, except as expressly otherwise provided in this Lease, shall the Tenant be entitled to any abatement or reduction of rent by reason thereof, nor shall the same give rise to a claim in the Tenant's favor that such failure constitutes actual or constructive, total or partial, eviction from the Premises provided, however, Landlord shall use reasonable, good faith efforts not to interfere with Tenant's conduct of its business on the Premises.

The Landlord reserves the right to stop any service or utility system when necessary by reason of accident or emergency, until necessary repairs have been completed; provided, however, that in each instance of stoppage, the Landlord shall exercise diligent efforts to eliminate the cause thereof. Except in case of emergency repairs, the Landlord will give the Tenant reasonable advance notice of any contemplated stoppage and will use diligent efforts to avoid unnecessary inconvenience to the Tenant by reason thereof. In no event shall the Landlord have any liability to the Tenant for the unavailability of heat, light or any utility or service to be provided by the Landlord to the extent that such unavailability is caused by External Causes, provided, however, that the Landlord is obligated to exercise diligent efforts to restore the services or utility systems' operation.

Notwithstanding anything contained herein to the contrary, in the event Landlord shall fail to provide the services it is required to provide to Tenant pursuant to **Exhibit D** (a "Service Failure") other than as a result of Tenant's acts or omissions or External Causes or as a result of a casualty or condemnation (which events shall be governed solely by Article VIII), and as a result thereof, Tenant is reasonably unable to use or conduct its operations on part or all of the Premises for more than three (3) business days, Tenant shall be entitled to proportionate abatement of rent for the period Tenant is reasonably unable to use or conduct its operations in part or all of the Premises. If a Service Failure is a result of any cause other than Tenant's acts or omissions, and results in a loss of service to the Premises and to more than fifty percent (50%) of the Building, Tenant shall have the right to terminate this Lease if Landlord fails or is unable to restore such services within six (6) months from the date of interruption and Tenant is reasonably unable to use or conduct its operations in a substantial part or all of the Premises. If a Service Failure is a result of any cause other than Tenant's acts or omissions, and results in a loss of service to the Premises but to less than fifty percent (50%) of the Building, Tenant shall have the right to terminate this Lease if Landlord fails or is unable to restore such services within three (3) months from the date of interruption and Tenant is reasonably unable to use or conduct its operations in a substantial part or all of the Premises. Tenant shall have the right to terminate this Lease as aforesaid by written notice to Landlord at any time after the expiration of such six (6) month period, and such termination shall be effective as of the date of Tenant's notice.

ARTICLE VI

TENANT COVENANTS

The Tenant covenants during the Term and for such further time as the Tenant occupies any part of the Premises:

Section 6.1 Permitted Uses.

The Tenant shall occupy the Premises only for the Permitted Uses, and shall not injure or deface the Premises or the Property, nor permit in the Premises any auction sale. The Tenant shall comply with all requirements of public authorities and of the Massachusetts Fire Code in connection with methods of storage, use and disposal thereof. The Tenant shall not permit in the Premises any nuisance, or the emission from the Premises of any objectionable noise, odor or vibration, nor use or devote the Premises or any part thereof for any purpose which is contrary to

law or ordinance or liable to invalidate or increase premiums for any insurance on the Building or its contents or liable to render necessary any alteration or addition to the Building. Tenant shall not commit or permit any waste in or with respect to the Premises, nor use, generate, store or dispose of any oil, toxic substances, hazardous wastes, or hazardous materials (each a "**Hazardous Material**"), or permit the same in or on the Premises or any parking areas provided for under this Lease, unless first giving Landlord notice thereof.

Notwithstanding the foregoing, Landlord agrees that Tenant may use, store and properly dispose of commonly available office cleaners and chemicals to maintain the Premises and Tenant's routine office operations (such as printer toner and copier toner) and necessary and reasonable quantities of the storage and use of the Hazardous Materials which are used in or incidental to the operation of Tenant's business and research uses (and at no greater amounts and/or quantities than specified on **Exhibit H** (which shall be consistent with the Maximum Allowable Quantity of Hazardous Materials per Control Area contained in Table 60.4.2.1.1.3 of the Massachusetts Fire Code) and within the control area limits set by the Massachusetts Building Code (the "**Code**")) (such materials referred to as the "**Permitted Hazardous Materials**"), provided that the receipt, storage, use, generation, release, transportation, treatment or disposal of such Permitted Hazardous Materials by the Tenant Parties shall at all times comply with and be subject to all provisions of this Lease and all applicable Legal Requirements, including the Code and compliance with all insurance requirements for the Building, (ii) the requirements of the 2013 Edition of NFPA 13, Standard for the Installation of Sprinkler Systems and the 2012 Edition of NFPA 30, Flammable and Combustible Liquids Code, and (iii) approval of Tenant's usage, storage, containment, ventilation and disposal policies and practices by the City of Cambridge Fire Department and the State Fire Marshall and any other applicable governmental entities. The Permitted Hazardous Materials used by Tenant at the Premises as of the date hereof are listed on **Exhibit H**. Within thirty (30) days following Tenant's receipt of a request from Landlord given not more frequently than once per year unless Landlord has a reasonable basis to require more frequent updates, Tenant shall (I) provide all information requested by Landlord's insurer with respect to such Permitted Hazardous Materials, and (II) provide Landlord with an updated Permitted Hazardous Materials list required under this Section 6.4(C). Tenant shall be solely responsible for the safe usage, storage, containment, ventilation and security of the Permitted Hazardous Materials. Tenant may use radioactive materials and experiment with laboratory animals on the Premises so long as Tenant complies, at all times during the Term, with any and all applicable Legal Requirements and other terms of this Lease. The Tenant shall not dump, flush or in any way introduce any Hazardous Materials into septic, sewage or other waste disposal systems serving the Premises or any parking areas provided for under this Lease, except in accordance with all applicable Legal Requirements or as permitted by government license or permit obtained by the Tenant. Tenant shall indemnify, defend and hold harmless the Landlord and its successors and assigns against all claims, loss, cost, and expense, including reasonable attorneys' fees, incurred as a result of any release, discharge or contamination of the Building or the Property or any other portion of University Park with Hazardous Materials by the Tenant or any of the Tenant Parties. With respect to any Permitted Use, Tenant shall provide to Landlord certified copies of all regulatory filings, licenses and permits Tenant has been required by law to obtain prior to handling any such Hazardous Materials, together with evidence reasonably satisfactory to Landlord that such licenses and/or

permits are valid and in full force and effect. Tenant shall first obtain all such licenses and/or permits prior to commencement of its operations in the Premises. From time to time hereafter, upon thirty (30) days advance notice from Landlord, Tenant will provide Landlord with Exhibit H and such updated certified copies of licenses and/or permits as the Landlord may reasonably request. Upon written request by the Landlord, Tenant shall immediately remove any material or substances which are not in compliance with this Section 6.1. The terms of this Section 6.1 shall survive the expiration or earlier termination of this Lease.

Section 6.2 Laws and Regulations.

The Tenant shall comply with all federal, state and local laws, regulations, ordinances, executive orders, federal guidelines, and similar requirements in effect from time to time, including, without limitation, any such requirements pertaining to employment opportunity, anti-discrimination, affirmative action and traffic mitigation, as the same may be amended from time to time (the "**Legal Requirements**").

Section 6.3 Rules and Regulations; Signs.

The Tenant shall not obstruct in any manner any portion of the Property not hereby leased; shall not permit the placing of any signs, curtains, blinds, shades, awnings, aerials or flagpoles, or the like, visible from outside the Premises; and shall comply with all reasonable rules and regulations of uniform application to all occupants of the Building now or hereafter made by the Landlord, of which the Tenant has been given notice, for the care and use of the Property and the parking facilities relating thereto. The Landlord shall not be liable to the Tenant for the failure of other occupants of the Building to conform to any such rules and regulations, but Landlord shall make reasonable efforts to enforce such rules and regulations on a uniform basis.

The Landlord shall provide a Building directory in the office lobby with Tenant's name and floor locations within the Building listed therein and Building standard signage at the entry of the Premises.

Section 6.4 Safety Compliance.

The Tenant shall keep the Premises equipped with all safety appliances required by applicable Legal Requirements because of any nonoffice use made by the Tenant (as opposed to major safety appliances required generally for the Property and the Building, for which the Landlord shall be responsible) and to procure all licenses and permits so required because of such use and, if requested by the Landlord, do any work so required because of such use, it being understood that the foregoing provisions shall not be construed to broaden in any way the Tenant's Permitted Uses. Tenant shall conduct such periodic tests, evaluations or certifications of safety appliances and equipment as are required or recommended in accordance with generally accepted standards to ensure that such safety appliances and equipment remain in good working order, and shall provide to Landlord copies of such reports, evaluations and certifications as requested by Landlord.

Section 6.5 Landlord's Entry.

The Tenant shall permit the Landlord and its agents, after reasonable notice (except in the case of emergencies) and with accompaniment by a representative of Tenant to enter the Premises at all reasonable hours for the purpose of inspecting or of making repairs as required or permitted to be made herein to the same, and for the purpose of showing the Premises to prospective purchasers and mortgagees at all reasonable times after reasonable prior notice to Tenant and to prospective tenants during the last twelve (12) months of the Term provided that in connection with such entry, Tenant may provide procedures reasonably designed so as not to jeopardize Tenant's trade secrets, proprietary technology or critical business operations. Except in case of an emergency, Landlord shall not enter Tenant's so-called "clean rooms" without Tenant's prior consent and without accompaniment by a representative of Tenant. Landlord shall not be responsible for any obligations under this Lease or applicable Legal Requirements to the extent Landlord is not permitted reasonable and timely access by Tenant to the necessary areas of the Premises to inspect the same and/or to perform such obligations.

Section 6.6 Floor Load.

The Tenant shall not place a load upon any floor in the Premises exceeding the floor load per square foot of area which such floor was designed to carry and which is allowed by law. Further, Tenant shall not move any safe, vault or other heavy equipment in, about or out of the Premises except in such manner, in such areas and at such time as the Landlord shall in each instance reasonably authorize. The Tenant's machines and mechanical equipment shall be placed and maintained by the Tenant at the Tenant's expense in settings sufficient to absorb or prevent vibration or noise that may be transmitted to the Building structure or to any other space in the Building.

Section 6.7 Personal Property Tax.

The Tenant shall pay promptly when due all taxes which may be imposed upon personal property (including, without limitation, fixtures and equipment) in the Premises to whomever assessed. Tenant shall have the right to contest the validity or amount of any such taxes by appropriate proceedings diligently conducted in good faith.

Section 6.8 Assignment and Subleases.

The Tenant shall not assign, mortgage, pledge, hypothecate or otherwise transfer this Lease, or sublet (which term, without limitation, shall include granting of concessions, licenses and the like) the whole or any part of the Premises without, in each instance, having first received the consent of the Landlord which consent shall not be unreasonably withheld or delayed. Except as specifically permitted herein, any assignment or sublease made without such consent shall be void. If Tenant (or any subtenant) is a corporation, the provisions of this **Section 6.8** shall apply to a direct or indirect transfer (however accomplished, whether in a single transaction or in a series of related or unrelated transactions) of stock (or any other mechanism such as, by way of example, the issuance of additional stock, a stock voting agreement or change in class(es) of stock) which results in a change of control of Tenant (or such subtenant) as if such

transfer of stock (or other mechanism) which results in a change of control of Tenant (or such subtenant) were an assignment of this Lease except that the transfer of the outstanding capital stock of Tenant or any subtenant by persons or parties through the "over the counter market" or through any recognized stock exchange, (other than those deemed "insiders" within the meaning of the Securities Exchange Act of 1934, as amended) shall not be deemed an assignment of this Lease. If Tenant (or such subtenant) is a partnership, joint venture or limited liability company (herein called a "**LLC**"), the provisions of this **Section 6.8** shall apply with respect to a direct or indirect transfer (however accomplished, whether in a single transaction or in a series of related or unrelated transactions) of an interest in the distributions of profits and losses of such partnership, joint venture or LLC (or other mechanism, such as, by way of example, the creation of additional general partnership or limited partnership interests) which results in a change of control of such partnership, joint venture or LLC, as if such transfer of an interest in the distributions of profits and losses of such partnership, joint venture or LLC which results in a change of control of such partnership, joint venture or LLC were an assignment of this Lease.

Notwithstanding anything to the contrary contained in this Section, upon not less than thirty (30) days' prior notice to Landlord, Tenant shall have the right to assign this Lease or sublease all or any portion of the Premises, without obtaining the prior consent of Landlord, (a) to the purchaser of all or substantially all of Tenant's assets, or to any entity into which the Tenant may be merged or consolidated (along with all or substantially all of its assets), (b) to a successor to Tenant if such succession takes place by a merger, consolidation, reorganization, stock sale, asset purchase, act of legislature or otherwise, and (c) any Affiliate (as defined below) so long as such Affiliate remains in such relationship to Tenant (the transferee in each subsections (a) through (c) hereinafter referred to as the "**Acquiring Company**"); provided that (i) the Acquiring Company continues to operate the business conducted in the Premises for the Permitted Uses described in Exhibit A hereto, (ii) the Acquiring Company shall assume in writing, in form acceptable to Landlord, all of Tenant's obligations under this Lease, (iii) the Acquiring Company is a reputable entity of good character and has a net worth computed in accordance with generally accepted accounting principles at least equal to the net worth of Tenant immediately prior to such merger, consolidation or transfer and proof satisfactory to Landlord of such net worth shall have been delivered to Landlord at least ten (10) days prior to the effective date of any such transaction, (iv) Tenant shall provide to Landlord such additional information regarding the Acquiring Company as Landlord shall reasonably request; and (v) Tenant shall pay Landlord's reasonable expenses actually incurred in connection therewith. An "**Affiliate**" shall mean any entity which is directly or indirectly through one or more intermediaries controls, is under common control with or is controlled by Tenant. For purposes of the preceding sentence, the term "control" (including the terms "controlled by" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management and policies of such Person, whether through ownership of voting securities, by contract or otherwise. Unless Landlord shall have objected to an assignment or transfer by Tenant within ten (10) business days following Landlord's receipt of the information or items described in subsections (ii) and (iii) above, Landlord shall be deemed to have waived its right to object thereto. The transfers described in this paragraph are referred to hereinafter as "**Permitted Transfers**."

Whether or not the Landlord consents, or is required to consent, to any assignment or subletting, the Tenant named herein shall remain fully and primarily liable for the obligations of the tenant hereunder, including, without limitation, the obligation to pay Annual Fixed Rent and Additional Rent provided under this Lease. The Tenant shall give the Landlord notice of any proposed sublease or assignment, whether or not the Landlord's consent is required hereunder, specifying the provisions of the proposed subletting or assignment, including (x) the name and address of the proposed subtenant or assignee, (y) a copy of the proposed subtenant's or assignee's most recent annual financial statement, and (z) all of the terms and provisions upon which the proposed subletting or assignment is to be made and such other information concerning the proposed subletting or assignment is to be made and such other information concerning the proposed subtenant or assignee as the Tenant has obtained in connection with the proposed subletting or assignment. Only in the event that Landlord, in its sole and absolute discretion, has agreed in writing to release Tenant from all liability under this Lease upon the assignment of this Lease or sublease of all or any portion of the Premises or as otherwise is required in connection with a Permitted Transfer, may Landlord require evidence to the reasonable satisfaction of Landlord that the net assets of the proposed assignee or subtenant are not less than the assets of Tenant at the time of the signing of the Lease.

The Tenant shall reimburse the Landlord promptly after receiving a written invoice thereof for reasonable legal and other expenses actually incurred by the Landlord in connection with any request by the Tenant for consent to any assignment or subletting. If this Lease is assigned, and Tenant is in default beyond any grace or cure period under the Lease, the Landlord may, upon prior written notice to Tenant, at any time and from time to time, collect rent and other charges from the assignee, sublessee or occupant and apply the net amount collected to the rent and other charges herein reserved, but no such assignment, subletting, occupancy or collection shall be deemed a waiver of the prohibitions contained in this Section 6.8 or the acceptance of the assignee, sublessee or occupant as a tenant, or a release of the Tenant from the further performance by the Tenant of covenants on the part of the Tenant herein contained.

The Tenant shall pay to the Landlord fifty percent (50%) of any amounts the Tenant actually receives from any subtenant or assignee as rent, additional rent or other forms of compensation or reimbursement for the sublease, assignment or occupancy of the Premises, after deducting therefrom (1) the then due and payable proportionate monthly share of Annual Fixed Rent, Additional Rent and all other monies due to Landlord pursuant to this Lease (allocable in the case of a sublease to that portion of the Premises being subleased), and (2) all reasonable and customary sublease expenses (including but not limited to bona fide brokerage fees, fit up expenses, free rent periods, marketing costs and attorney's fees) incurred by Tenant. The preceding sentence shall not apply to any Permitted Transfers. The consent by the Landlord to an assignment or subletting shall not be construed to relieve the Tenant from obtaining the express consent in writing of the Landlord to any further assignment or subletting.

Notwithstanding anything to the contrary contained herein, Tenant shall be permitted to allow the occupancy of the Premises or portions thereof by companies, firms or other entities who are members of a group with whom Tenant has a contractual or other relationship providing for cooperative or collaborative research or development work, who are or typically would be

located by Tenant in one of its facilities (each, a "**Collaborative User**"), without the prior written consent of Landlord, provided, however, that Tenant shall provide Landlord with written notice of such situations if such occupancy involves more than ten (10) people for a period of greater than six (6) months. Tenant shall be fully responsible for ensuring that any such parties comply with the terms of the Lease and Tenant shall at all times remain primarily liable under the Lease.

ARTICLE VII

INDEMNITY AND INSURANCE

Section 7. 1 Indemnity.

To the maximum extent this agreement may be made effective according to law, the Tenant agrees to defend, indemnify and save harmless the Landlord and its members, partners, directors, officers, principals, shareholders, agents, employees and any Additional Named Insureds, as hereinafter defined (the "**Landlord Parties**"), from and against all claims, loss, or damage of whatever nature arising from (i) any breach by Tenant of any obligation of Tenant under this Lease beyond applicable notice and cure periods; or (ii) any act, omission or negligence of the Tenant, or the Tenant's contractors, licensees, invitees, agents, servants or employees; or (iii) any accident, injury or damage whatsoever caused to any person or property, occurring after the date that possession of the Premises was first delivered to Tenant and until the end of the Term and thereafter, so long as the Tenant is in occupancy of any part of the Premises, in or about the Premises or arising from any accident, injury or damage occurring outside the Premises but within the Building, on the Land, on the access roads and ways, in the parking facilities provided pursuant to the Lease, within University Park or any adjacent area maintained by Landlord or any individual or entity affiliated with Landlord, where such accident, injury or damage results from an act or omission on the part of the Tenant or the Tenant's agents or employees, licensees, invitees, servants or contractors, provided that the foregoing indemnity shall not include any cost or damage arising from any act, omission or negligence of the Landlord, or the Landlord's contractors, licensees, invitees, agents, servants or employees.

Landlord agrees to defend, indemnify and save harmless Tenant from legal action, damages, loss, liability and any other expense in connection with loss of life, bodily or personal injury or property damage, arising from or out of the intentional or willful misconduct or gross negligence of Landlord, its agents, employees, licensees, servants, invitees or contractors, which occur in or about the Premises, outside the Premises but within the Building, on the Land, on the access roads and ways, in the parking facilities provided pursuant to the Lease, within University Park or any adjacent area maintained by Landlord, except to the extent that such loss of life, bodily or personal injury or property damage is due to the willful misconduct or act, omission or neglect of Tenant, its agents, contractors, employees, licensees, invitees or servants.

The foregoing indemnities and hold harmless agreements shall include indemnity against reasonable attorneys' fees and all other costs, expenses and liabilities incurred in connection with any such claim or proceeding brought thereon; and the defense thereof. The terms of this Section 7.1 shall survive the expiration or earlier termination of this Lease.

Section 7.2 Liability Insurance.

The Tenant agrees to maintain in full force from the date upon which the Tenant first enters the Premises for any reason, throughout the Term, and thereafter, so long as the Tenant is in occupancy of any part of the Premises, a policy of commercial general liability insurance under which the Landlord, the Building's managing agent, any ground lessor and any holder of a first mortgage on the Property of whom the Tenant is notified in writing by the Landlord (collectively, the "**Additional Named Insureds**") are named as additional insureds, and under which the insurer provides a contractual liability endorsement insuring against all cost, expense and liability arising out of or based upon any and all claims, accidents, injuries and damages described in Section 7.1, in the broadest form of such coverage from time to time available. Each such policy shall be noncancelable and nonamendable (to the extent that any proposed amendment reduces the limits or the scope of the insurance required in this Lease) with respect to the Landlord and such ground lessor and first mortgagee without· thirty (30) days' prior notice to the Landlord and the Additional Named Insureds and a certificate of insurance shall be delivered to the Landlord.

The minimum limits of liability of such insurance as of the Commencement Date shall be Three Million Dollars ($3,000,000.00) per occurrence and Five Million Dollars ($5,000.000.00) in the aggregate for combined bodily injury (or death) and damage to property, and from time to time during the Term such limits of liability shall be increased to reflect such higher limits as are customarily required pursuant to new leases of space in the Boston/Cambridge area with respect to similar properties and similar uses.

Section 7.3 Alterations, Improvements and Betterments; Personal Property at Risk.

The Tenant agrees to maintain in full force at all times throughout the Term, policy(s) of all risk property damage insurance, naming Landlord (and the Additional Named Insureds) and the Tenant as insureds as their interests may appear, covering all present and future Tenant Removable Property, Landlord Retained Property, and all present and future alterations, leasehold improvements and betterments in the Premises to the extent of their full replacement costs as updated from time to time during the Term, such insurance to include a replacement cost endorsement.

The Tenant agrees that all of the furnishings, fixtures, equipment, effects and property of every kind, nature and description of the Tenant and of all persons claiming by, through or- under the Tenant which, during the continuance of this Lease or any occupancy of the Premises by the Tenant or anyone claiming under the Tenant which, during the continuance of this Lease or any occupancy of the Premises by the Tenant or anyone claiming under the Tenant may be on the Premises or elsewhere in the Building or on the Land or parking facilities provided hereby, shall be at the sole risk and hazard of the Tenant, and if the whole or any part thereof shall be destroyed or damaged by fire, water or otherwise, or by the leakage or bursting of water pipes, steam pipes, or other pipes, by theft or from any other cause, no part of said loss or damage is to be charged to or be borne by the Landlord, except that the Landlord shall in no event be exonerated from any liability to the Tenant (subject to Section 7.5 hereof) for any injury, loss,

damage or liability to the extent same is caused by Landlord's, or its agents', employees', servants' or contractors' negligence or willful misconduct.

Section 7.4 Landlord's Insurance.

The Landlord shall carry, or cause to be carried, such casualty and liability insurance upon and with respect to operations at the Building as may from time to time be deemed reasonably prudent by the Landlord or required by any mortgagee holding a mortgage thereon or any ground lessor of the Land, and in any event, insurance against loss by fire and the risks now covered by extended coverage endorsement No. 4 in an amount at least equal to the full replacement cost of the Building, exclusive of foundations, excavations and footings.

Section 7.5 Waiver of Subrogation.

Any property insurance carried by either party, or required to be carried by either party, with respect to the Building, Land, Premises, parking facilities or any property therein or occurrences thereon shall, without further request by either party, include a clause or endorsement denying to the insurer rights of subrogation against the other party to the extent rights have been waived by the insured prior to occurrence of any claim, damage, injury or loss. Each party, notwithstanding any provisions of this Lease to the contrary, hereby waives any claims or rights of recovery against the other for injury or loss, including, without limitation, injury or loss caused by negligence of such other party to the extent covered by property insurance actually carried or required to be carried hereunder.

ARTICLE VIII

CASUALTY AND EMINENT DOMAIN

Section 8.1 Restoration Following Casualties.

If, during the Term, the Building or the Premises shall be damaged by fire or casualty, subject to the exceptions and limitations provided below, the Landlord shall proceed promptly to exercise diligent efforts to restore, or cause to be restored, the Building and the core and shell of the Premises (excluding alterations, improvements and betterments and the property which Tenant is obligated to insure under the Lease), as the case may be, to substantially the condition thereof just prior to time of such damage, but the Landlord shall not be responsible for delay in such restoration which may result from External Causes or due to any act, failure to act or neglect of Tenant or Tenant's servants, agents, employees or licensees. The Landlord shall have no obligation to expend in the reconstruction of the Building more than the actual amount of insurance proceeds made available to the Landlord by its insurer and not retained by the Landlord's mortgagee or ground lessor. Tenant shall, promptly following Landlord's restoration of the core and shell of the Premises, restore the alterations, improvements, betterments and property in the Premises.

Any restoration of the Building or the Premises shall be altered to the extent necessary to comply with then current laws and applicable codes.

Section 8.2 Landlord's Termination Election.

If the Landlord reasonably determines that the amount of insurance proceeds available to the Landlord is insufficient to cover the cost of restoring the Building or if in the reasonable opinion of the Landlord the Building has been so damaged that it is appropriate for the Landlord to raze or substantially reconstruct the Building, then the Landlord may terminate this Lease by giving notice to the Tenant within ninety (90) days after the date of the casualty or such later date as is required to allow the Landlord a reasonable time to make either such determination, but in no event later than one hundred twenty (120) days from the date of the casualty. Any such termination shall be effective on the date designated in such notice from the Landlord, but in any event, not later than ninety (90) days after such notice, and if no date is specified, effective upon the delivery of such notice.

Section 8.3 Tenant's Termination Election.

After any casualty which materially impairs the use of a material portion of the Premises, unless the Landlord has earlier advised the Tenant of the Landlord's election to terminate this Lease pursuant to Section 8.2, or to restore the Premises and maintain this Lease in effect pursuant to Section 8.1, the Tenant shall have the right, after the expiration of the ninety (90) day period provided in Section 8.2 above, to give a written notice to the Landlord requiring the Landlord within ten (10) days thereafter to exercise or waive any right of the Landlord to terminate this Lease pursuant to Section 8.2 as a result of such casualty and if the Landlord fails to give timely notice to the Tenant waiving any right under Section 8.2 to terminate this Lease based on such casualty, the Tenant shall be entitled, at any time until the Landlord has given notice to the Tenant waiving such termination right, to give notice to the Landlord terminating this Lease.

Where the Landlord is obligated to restore the Premises, unless such restoration is completed within two (2) months following the date estimated by Landlord for restoration completion in a written notice to Tenant delivered within ninety (90) days following the date of the casualty, such period to be subject, however, to extension where the delay in completion of such work is due to External Causes (not to exceed an additional two (2) months on account of such External Causes) or due to any act, failure to act or neglect of Tenant or Tenant's servants, agents, employees or licensees, the Tenant shall have the right to terminate this Lease at any time after the expiration of such period until the restoration is substantially completed, such termination to take effect as of the date of the Tenant's notice.

Tenant shall be solely responsible for (A) the amount of any deductible under the policy insuring Tenant's improvements and betterments and (B) the amount, if any, by which the cost of repairing and restoring Tenant's improvements and betterments exceeds the available insurance proceeds therefor.

Except as expressly provided in this Article VIII, Tenant shall not be entitled to terminate this Lease and Landlord shall have no liability to Tenant for inconvenience, loss of business or annoyance arising from any repair or restoration of any portion of the Premises or of the Building pursuant to this Article VIII.

Section 8.4 Casualty at Expiration of Lease.

If the Premises shall be damaged by fire or casualty in such a manner that the Premises cannot, in the ordinary course, reasonably be expected to be repaired within one hundred twenty (120) days from the commencement of repair work and such damage occurs within the last two (2) years of the Term (as the same may have been extended prior to such fire or casualty), either party shall have the right, by giving notice to the other not later than sixty (60) days after such damage, to terminate this Lease, whereupon this Lease shall terminate as of the date of such notice.

Section 8.5 Eminent Domain.

Except as hereinafter provided, if the Premises, or such portion thereof as to render the balance (if reconstructed to the maximum extent practicable in the circumstances) unsuitable for the Tenant's purposes, shall be taken by condemnation or right of eminent domain, the Landlord or the Tenant shall have the right to terminate this Lease by notice to the other of its desire to do so, provided that such notice is given not later than thirty (30) days after the effective date of such taking. If so much of the Building shall be so taken that the Landlord reasonably determines that it would be appropriate to raze or substantially alter the Building, the Landlord shall have the right to terminate this Lease by giving notice to the Tenant of the Landlord's desire to do so not later than thirty (30) days after the effective date of such taking.

Should any part of the Premises be so taken or condemned during the Term, and should this Lease be not terminated in accordance with the foregoing provisions, the Landlord agrees to use reasonable efforts to put what may remain of the Premises into proper condition for use and occupation as nearly like the condition of the Premises prior to such taking as shall be practicable, subject, however, to applicable laws and codes then in existence and to the availability of sufficient proceeds from the eminent domain taking not retained by any mortgagee or ground lessor.

Section 8.6 Rent After Casualty or Taking.

If the Premises shall be damaged by fire or other casualty, the Annual Fixed Rent and Additional Rent shall be justly and equitably abated and reduced according to the nature and extent of the loss of use thereof suffered by the Tenant from the date of the casualty through the date that Landlord substantially completes Landlord's restoration work to the Premises. In the event of a taking which reduces the area of the Premises, a just proportion of the Annual Fixed Rent shall be abated for the period of such taking.

Section 8.7 Taking Award.

The Landlord shall have and hereby reserves and accepts, and the Tenant hereby grants and assigns to the Landlord, all rights to recover for damages to the Building and the Land, and the leasehold interest hereby created, and to compensation accrued or hereafter to accrue by reason of such taking, damage or destruction, as aforesaid, and by way of confirming the foregoing, the Tenant hereby grants and assigns to the Landlord, all rights to such damages or

compensation. Nothing contained herein shall be construed to prevent the Tenant from prosecuting in any condemnation proceedings a claim for relocation expenses and Tenant's trade fixtures and equipment in the Premises, provided that such action shall not affect the amount of compensation otherwise recoverable by the Landlord from the taking authority pursuant to the preceding sentence.

ARTICLE IX

DEFAULT

Section 9.1 Tenant's Default.

Each of the following shall constitute an "Event of Default":

(9) Failure on the part of the Tenant to pay the Annual Fixed Rent, Additional Rent or other charges for which provision is made herein on or before the date on which the same become due and payable, if such condition continues for ten (10) days after written notice from the Landlord that the same are past due; provided, however, an Event of Default shall occur hereunder without any obligation of Landlord to give any notice, if Landlord has given Tenant written notice under this Section 9.1(a) on more than two (2) occasions during the twelve (12) month interval preceding such failure to pay by Tenant.

(10) Failure on the part of the Tenant to perform or observe any other term or condition contained in this Lease if the Tenant shall not cure such failure within thirty (30) days after notice from the Landlord to the Tenant thereof, provided that in the case of breaches of obligations under this Lease which cannot be cured within thirty (30) days through the exercise of due diligence, so long as the Tenant commences such cure within thirty (30) days, and the Tenant diligently pursues such cure, such breach shall not be deemed to create an Event of Default.

(11) The taking of the estate hereby created on execution or by other process of law; or a judicial declaration that the Tenant is bankrupt or insolvent according to law; or any assignment of the property of the Tenant for the benefit of creditors, or the appointment of a receiver, guardian, conservator, trustee in bankruptcy or other similar officer to take charge of all or any substantial part of the Tenant's property by a court of competent jurisdiction; or the filing .of an involuntary petition against the Tenant under any provisions of the bankruptcy act now or hereafter enacted if the same is not dismissed within ninety (90) days; the filing by the Tenant of any voluntary petition for relief under provisions of any bankruptcy law now or hereafter enacted.

If an Event of Default shall occur, then, in any such case, whether or not the Term shall have begun, the Landlord lawfully may, immediately or at any time thereafter, give notice to the Tenant specifying the Event of Default and this Lease shall come to an end on the date specified therein as fully and completely as if such date were the date herein originally fixed for the expiration of the Lease Term, and the Tenant will then quit and surrender the Premises to the Landlord, but the Tenant shall remain liable as hereinafter provided.

Section 9.2 Damages.

In the event that this Lease is terminated pursuant to Section 9.1 above, Tenant covenants to pay punctually to Landlord all the sums ("**Periodic Payments**") and perform all the obligations which Tenant covenants in this Lease to pay and to perform in the same manner and to the same extent and at the same time as if this Lease had not been terminated. In calculating the amounts to be paid by Tenant under the foregoing covenant, Tenant shall be credited with the net proceeds of any rent obtained by reletting the Premises, after deducting all of Landlord's reasonable expenses in connection with such reletting, including, without limitation, all repossession costs, brokerage commissions, fees for legal services and expenses for preparing the Premises for reletting. The Landlord may (i) relet the Premises, or any part or parts thereof, for a term or terms which may, at the Landlord's option, exceed or be equal to or less than the period which would otherwise have constituted the balance of the Term, and may grant such concessions and free rent as the Landlord in its reasonable commercial judgment considers advisable or necessary to relet the same, and (ii) make such alterations, repairs and improvements in the Premises as the Landlord in its reasonable commercial judgment considers advisable or necessary to relet the same. Landlord agrees to use diligent, good faith efforts to relet the Premises, but the Landlord may, at its option, seek to rent other properties of the Landlord prior to reletting the Premises. Subject to the obligations of Landlord in the preceding sentence, no action of the Landlord or failure to relet in accordance with the foregoing shall operate to release or reduce the Tenant's liability hereunder.

At any time following the termination of this Lease, Landlord may elect to receive, in lieu of receiving further Periodic Payments, an amount (the "**Lump Sum Payment**") equal to the excess, if any, of the discounted present value of the total rent reserved for the remainder of the Term after such election over the then discounted present fair rental value of the Premises for the remainder of the Term after such election. In calculating the rent reserved, there shall be included, in addition to the Annual Fixed Rent and all Additional Rent (assuming that Real Estate Taxes and Operating Expenses for the Property will increase annually by a reasonable amount), the value of all other considerations agreed to be paid or performed by Tenant over the remainder of the Term.

Section 9.3 Cumulative Rights.

The specific remedies to which the Landlord may resort under the terms of this Lease are cumulative and are not intended to be exclusive of any other remedies or means of redress to which it may be lawfully entitled in case of any breach or threatened breach by the Tenant of any provisions of this Lease. In addition to the other remedies provided in this Lease, the Landlord shall be entitled to the restraint by injunction of the violation or attempted or threatened violation of any of the covenants, conditions or provisions of this Lease or to a decree compelling specific performance of any such covenants, conditions or provisions. Nothing contained in this Lease shall limit or prejudice the right of the Landlord to prove for and obtain in proceedings for bankruptcy, insolvency or like proceedings by reason of the termination of this Lease, an amount equal to the maximum allowed by any statute or rule of law in effect at the time when, and

governing the proceedings in which, the damages are to be proved, whether or not the amount be greater, equal to, or less than the amount of the loss or damages referred to above.

Section 9.4 Landlord's Self-help.

If the Tenant shall at any time default in the performance of any obligation under this Lease, the Landlord shall have the right, but not the obligation, after expiration of any applicable notice and grace period, upon reasonable, but in no event more than ten (10) days' notice to the Tenant (except in case of emergency in which case no notice need be given), to perform such obligation. The Landlord may exercise its rights under this Section without waiving any other of its rights or releasing the Tenant from any of its obligations under this Lease.

Section 9.5 Enforcement Expenses.

If either party hereto fails to perform any of its obligations under this Lease or if any dispute arises between the parties hereto concerning the meaning or interpretation of any provision of this Lease, then the defaulting party or the party not prevailing in such dispute, as the case may be, shall pay any and all costs and expenses reasonably incurred by the other party on account of such default and/or in enforcing or establishing its rights hereunder, including, but not limited to, court costs, expert fees and costs and attorneys' fees and disbursements. A party shall be deemed to have prevailed in any such action if such action is dismissed upon the payment by the other party of the sums allegedly due or the performance of obligations allegedly not complied with, or if such party obtains substantially the relief sought by it in the action, irrespective of whether such action is prosecuted to judgment. If either party hereto be made or becomes a party to any litigation commenced by or against the other party by or against a third party, or incurs costs or expenses related to such litigation, involving any part of the Property and the enforcement of any of the rights, Obligations or remedies of such party, then the party becoming involved in any such litigation because of a claim against such other party hereto shall receive from such other party hereto all costs and reasonable attorneys' fees incurred by such party in such litigation.

Section 9.6 Late Charges and Interest on Overdue Payments.

In the event that any payment of Annual Fixed Rent or Additional Rent shall remain unpaid for a period of ten (10) days after the same are due, there shall become due to the Landlord from the Tenant, as Additional Rent and as compensation for the Landlord's extra administrative costs in investigating the circumstances of late rent, a late charge of two percent (2%) of the amount overdue. In addition, any Annual Fixed Rent and Additional Rent not paid when due shall bear interest from the date due to the Landlord until paid at the variable rate (the "**Default Interest Rate**") equal to the higher of (i) the rate at which interest accrues on amounts not paid when due under the terms of the Landlord's financing for the Building, as from time to time in effect, and (ii) one hundred and twentyfive percent (125%) of the Prime Rate (as defined in Section 3.3(b) hereof).

Section 9.7 Landlord's Right to Notice and Cure.

The Landlord shall in no event be in default in the performance of any of the Landlord's obligations hereunder unless and until the Landlord shall have failed to perform such obligations within thirty (30) days, or such additional time as is reasonably required to correct any such default, after notice by the Tenant to the Landlord expressly specifying wherein the Landlord has failed to perform any such obligation.

ARTICLE X

MORTGAGEES' AND GROUND LESSORS' RIGHTS

Section 10.1 Subordination and Attornment.

This Lease shall be subject and subordinate to any and all mortgages or ground leases on the Property, so that the lien of any such mortgage or ground lease shall be superior to all rights hereby or hereafter vested in the Tenant, provided that such mortgagee or ground lessor shall have entered into a nondisturbance and attornment agreement with Tenant, the form of which shall be furnished by the mortgagee or ground lessor, as the case may be, with such reasonable modifications as Tenant shall request within a reasonable time period, Tenant hereby agrees that Tenant will recognize as its landlord under this Lease and shall attorn to any person succeeding to the interest of Landlord in respect of the land and the buildings on or in which the Premises is contained, upon any foreclosure of any mortgage upon such land or buildings or upon the execution of any deed in lieu of such foreclosure in respect of such mortgage. If requested, Tenant shall execute and deliver an instrument or instruments confirming its attornment as provided herein; provided, however, that no successorininterest shall be bound by any payment of rent for more than one (1) month in advance, or any amendment or modification of this lease made without the express written consent of the mortgagee under such mortgage. Any action for the foreclosure of an existing mortgage on the Property shall not terminate this Lease or cause this Lease to be terminable by Tenant by reason of the termination of any such ground lease unless Tenant is specifically named and joined in any such action and unless a judgment is obtained therein against Tenant resulting in a termination of this Lease.

Section 10.2 Prepayment of Rent not to Bind Mortgagee.

No Annual Fixed Rent, Additional Rent, or any other charge payable to the Landlord shall be paid more than thirty (30) days prior to the due date thereof under the terms of this Lease and payments made in violation of this provision shall (except to the extent that such payments are actually received by a mortgagee or ground lessor) be a nullity as against such mortgagee or ground lessor and the Tenant shall be liable for the amount of such payments to such mortgagee or ground lessor.

Section 10.3 Tenant's Duty to Notify Mortgagee; Mortgagee's Ability to Cure.

No act or failure to act on the part of the Landlord which would entitle the Tenant under the terms of this Lease, or by law, to be relieved of the Tenant's obligations to pay Annual Fixed Rent or Additional Rent hereunder or to terminate this Lease, shall result in a release or termination of such obligations of the Tenant or a termination of this Lease unless (i) the Tenant

shall have first· given written notice of the Landlord's act or failure to act to the Landlord's mortgagees and ground lessors of record, if any, of whose identity and address the Tenant shall have been given notice, specifying the act or failure to act on the part of the Landlord which would give basis to the Tenant's rights; and (ii) such mortgagees and ground lessors, after receipt of such notice, have failed or refused to correct or cure the condition complained of within a reasonable time thereafter, which shall include a reasonable time for such mortgagee and ground lessor, (but in no event more than thirty (30) days after receipt of such notice) to obtain possession of the Property if possession is necessary for the mortgagee or ground lessor to correct or cure the condition and if the mortgagee or ground lessor notifies the Tenant of its intention to take possession of the Property and correct or cure such condition.

Section 10.4 Estoppel Certificates.

The Tenant shall from time to time, upon not less than fifteen (15) days' prior written request by the Landlord, which such request shall include a copy of such estoppel certificate, execute, acknowledge and deliver to the Landlord a statement in writing certifying to the Landlord or an independent third party, with a true and correct copy of this Lease attached thereto, to the extent such statements continue to be true and accurate, (i) that this Lease is unmodified and in full force and effect (or, if there have been any modifications, that the same is in full force and effect as modified and stating the modifications); (ii) that the Tenant has no knowledge of any defenses, offsets or counterclaims against its obligations to pay the Annual Fixed Rent and Additional Rent and to perform its other covenants under this Lease (or if there are any defenses, offsets, or counterclaims, setting them forth in reasonable detail); (iii) that there are no known uncured defaults of the Landlord or the Tenant under this Lease (or if there are known defaults, setting them forth in reasonable detail); (iv) the dates to which the Annual Fixed Rent, Additional Rent and other charges have been paid; (v) that the Tenant has accepted, is satisfied with, and is in full possession of the Premises, including all improvements, additions, and alterations thereto required to be made by Landlord under the Lease; (vi) that the Landlord has satisfactorily complied with all of the requirements and conditions precedent to the commencement of the Term of the Lease as specified in the Lease; (vii) the Term, the Commencement Date, and any other relevant dates, and that the Tenant has been in occupancy since the Commencement Date and paying rent since the specified dates; (viii) that no monetary or other considerations, including, but not limited to, rental concessions for Landlord, special tenant improvements or Landlord's assumption of prior lease obligations of Tenant have been granted to Tenant by Landlord for entering into Lease, except as specified; (ix) that Tenant has no notice of a prior assignment, hypothecation, or pledge of rents or of the Lease; (x) that the Lease (as same may be amended) represents the entire agreement between Landlord and Tenant; and (xi) such other matters with respect to the Tenant and this Lease as the Landlord may reasonably request in writing. On the Commencement Date, the Tenant shall, at the request of the Landlord, promptly execute, acknowledge and deliver to the Landlord a statement in writing that the Commencement Date has occurred, that the Annual Fixed Rent has begun to accrue and that the Tenant has taken occupancy of the Premises. Any statement delivered pursuant to this Section may be relied upon by any prospective purchaser, mortgagee or ground lessor of the Premises and shall be binding on the Tenant, but any such statement shall not amend this Lease and shall not be binding on the Tenant against Landlord. Landlord shall from time to time, upon

not less than fifteen (15) days' prior written request by the Tenant, execute, acknowledge and deliver to the Tenant a statement in writing certifying to the Tenant or an independent third party, with a true and correct copy of this Lease attached thereto, to the extent such statements continue to be true and accurate (i) that this Lease is unmodified and in full force and effect (or, if there have been any modifications, that the same is in full force and effect as modified and stating the modifications); (ii) that the Landlord has no knowledge of any defenses, offsets or counterclaims against its obligations to perform its covenants under this Lease (or if there are any defenses, offsets, or counterclaims, setting them forth in reasonable detail); (iii) that there are no known uncured defaults of the Tenant or the Landlord under this Lease (or if there are known defaults, setting them forth in reasonable detail); (iv) the dates to which the Annual Fixed Rent, Additional Rent and other charges have been paid; (v) that the Tenant is in full possession of the Premises, including all improvements, additions and alterations thereto required to be made by Landlord under the Lease; (vi) that the Tenant has satisfactorily complied with all of the requirements and conditions precedent to the commencement of the Term of the Lease as specified in the Lease; (vii) that the Tenant has been in occupancy since the Commencement Date and paying rent since the specified dates; (viii) that no monetary or other considerations, including, but not limited to, rental concessions for Landlord, special tenant improvements or Landlord's assumption of prior lease obligations of Tenant have been granted to Tenant by Landlord for entering into the Lease, except as specified; (ix) that Landlord has no notice of a prior assignment, hypothecation, or pledge of rents or of the Lease; (x) that the Lease represents the entire agreement between Landlord and Tenant; and (xi) such other matters with respect to the Tenant and this Lease as the Tenant may reasonably request. Any statement delivered pursuant to this Section may be relied upon by any prospective lender of Tenant and shall be binding on the Landlord.

ARTICLE XI

MISCELLANEOUS

Section 11.1 Notice of Lease.

The Tenant agrees not to record this Lease, but upon request of either party, both parties shall execute and deliver a Notice of Lease in form appropriate for recording or registration acknowledging the Commencement Date, and if this Lease is terminated before the Term expires, an instrument in such form acknowledging the date of termination.

Section 11.2 Notices.

Whenever any notice, approval, consent, request, election, offer or acceptance is given or made pursuant to this Lease, it shall be in writing. Communications and payments shall be addressed, if to the Landlord, at the Landlord's Address for Notices as set forth in Exhibit A or at such other address as may have been specified by prior notice to the Tenant; and if to the Tenant, at the Tenant's Address for Notices as set forth in **Exhibit A** or at such other address as may have been specified by prior notice to the Landlord. Any communication so addressed shall be deemed duly given on the earlier of (i) the date received if hand-delivered by either party or mailed by a reputable same-day delivery service, (ii) the day following the day of mailing if

mailed by a reputable overnight delivery service, or (iii) on the third business day following the day of mailing if mailed by registered or certified mail, return receipt requested. If the Landlord by notice to the Tenant at any time designates some other person to receive payments or notices, all payments or notices thereafter by the Tenant shall be paid or given to the agent designated until notice to the contrary is received by the Tenant from the Landlord.

Section 11.3 Successors and Limitation on Liability on the Landlord.

The obligations of this Lease shall run with the land, and this Lease shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns, except that the original Landlord named herein and each successor Landlord shall be liable only for obligations accruing during the period of its ownership. The obligations of the Landlord shall be binding upon the assets of the Landlord consisting of an equity ownership of the Property (and including any proceeds realized from the sale of such Property) but not upon other assets of the Landlord and neither the Tenant, nor anyone claiming by, under or through the Tenant, shall be entitled to obtain any judgment creating personal liability on the part of the Landlord or enforcing any obligations of the Landlord against any assets of the Landlord other than an equity interest in the Property.

Section 11.4 Waivers by the Landlord or Tenant.

The failure of the Landlord or the Tenant to seek redress for violation of, or to insist upon strict performance of, any covenant or condition of this Lease, shall not be deemed a waiver of such violation nor prevent a subsequent act, which would have originally constituted a violation from having all the force and effect of an original violation. The receipt by the Landlord of Annual Fixed Rent or Additional Rent with knowledge of the breach of any covenant of this Lease shall not be deemed a waiver of such breach.

No provision of this Lease shall be deemed to have been waived by the Landlord or the Tenant, unless such waiver be in writing signed by the waiving party. No consent or waiver, express or implied, by the Landlord or the Tenant to or of any breach of any agreement or duty shall be construed as a waiver or consent to or of any other breach of the same or any other agreement or duty.

Section 11.5 Acceptance of Partial Payments of Rent.

No acceptance by the Landlord of a lesser sum than the Annual Fixed Rent and Additional Rent then due shall be deemed to be other than a partial installment of such rent due, nor shall any endorsement or statement on any check or any letter accompanying any check or payment as rent be deemed an accord and satisfaction, and the Landlord may accept such check or payment without prejudice to the Landlord’s right to recover the balance of such installment or pursue any other remedy in this Lease provided. The delivery of keys to any employee of the Landlord or to the Landlord’s agent or any employee thereof shall not· operate as a termination of this Lease or a surrender of the Premises.

Section 11.6 Interpretation and Partial Invalidity.

If any term of this Lease, or the application thereof to any person or- circumstances, shall to any extent be invalid or unenforceable, the remainder of this Lease, or the application of such term to persons or circumstances other than those as to which it is invalid or unenforceable, shall not be affected thereby, and each term of this Lease shall be valid and enforceable to the fullest extent permitted by law. The titles of the Articles are for convenience only and not to be considered in construing this Lease. This Lease contains all of the agreements of the parties with respect to the subject matter thereof and supersedes all prior dealings between them with respect to such subject matter.

Section 11.7 Quiet Enjoyment.

So long as the Tenant pays Annual Fixed Rent and Additional Rent, performs all other Tenant covenants of this Lease and observes all conditions hereof, the Tenant shall peaceably and quietly have, hold and enjoy the Premises free of any claims by, through or under the Landlord.

Section 11.8 Brokerage.

Each party represents and warrants to the other that it has had no dealings with any broker or agent in connection with this Lease other than Cushman & Wakefield, CBRE and JLL New England, LLC and shall indemnify and hold harmless the other from claims for any brokerage commission by any other broker or agent claiming same by, through or under the indemnifying party. The terms of this Section 11.8 shall survive the expiration or earlier termination of this Lease.

Section 11.9 Surrender of Premises and Holding Over.

The Tenant shall surrender possession of the Premises on the last day of the Term and the Tenant waives the right to any notice of termination or notice to quit. The Tenant covenants that upon the expiration or sooner termination of this Lease, it shall, without notice, deliver up and surrender possession of the Premises in the same condition in which the Tenant has agreed to keep the same during the continuance of this Lease and in accordance with the terms hereof, including the decommissioning requirements of this Section 11.9, reasonable wear and tear and damage by fire or other casualty or eminent domain taking and damage by the negligence or willful misconduct of Landlord or its agents, contractors or employees excepted, first removing therefrom all goods and effects of the Tenant and the Tenant Removable Property and any leasehold improvements Landlord specified for removal pursuant to Section 4.2, and repairing all damage caused by such removal. Upon the expiration of this Lease or if the Premises should be abandoned by the Tenant, or this Lease should terminate for any cause, and at the time of such expiration, vacation, abandonment or termination, the Tenant or Tenant's agents, subtenants or any other person should leave any property of any kind or character on or in the Premises, the fact of such leaving of property on or in the Premises shall be conclusive evidence of intent by the Tenant, and individuals and entities deriving their rights through the Tenant, to abandon such property so left in or upon the Premises, and such leaving shall constitute abandonment of the property. Landlord shall have the right and authority without notice to the Tenant or anyone else, to remove and destroy, or to sell or authorize disposal of such property, or any part thereof,

without being in any way liable to the Tenant therefor and the proceeds thereof shall belong to the Landlord as compensation for the removal and disposition of such property. Notwithstanding anything to the contrary contained in this Lease, Tenant shall not be obligated to restore the Premises or remove any alterations or additions to the Premises at the end of the Term, except for any new items installed after the Commencement Date of this Lease which Landlord identified in written notice delivered prior to Landlord approving Tenant's plans for any alterations or improvements as items which Tenant must remove prior to the expiration of the Lease. Tenant shall not be required to remove its computer and telecommunications wiring, cable and other equipment; provided, however, that to the extent that Tenant replaces any such wiring and cable during the Term or any other extension thereof then it shall, as part of that installation pull and remove from the Premises any wiring and cable that it no longer uses from the specific portion of the Premises in which Tenant is replacing such wiring or cabling. Tenant will yield-up the Premises to Landlord in broom swept condition, reasonable wear and tear and damage resulting from casualty excepted.

At least three (3) months prior to the surrender of the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any governmental authority) to be taken by Tenant in order to surrender the Premises (including any alterations permitted by Landlord to remain in the Premises, and the Landlord Retained Property) and any ductwork or other areas or systems of the Building requiring decommissioning at the expiration or earlier termination of the Term, free from any residual impact from Tenant's use of Hazardous Materials and otherwise released for unrestricted use and occupancy (the "**Surrender Plan**"). Tenant's Surrender Plan shall state that (a) all laboratory space in the Premises and other areas of the Building used by Tenant, including (i) all floors, walls, ceilings, counters, piping, supply lines, waste lines and plumbing in or exclusively serving the Premises, and (ii) all exhaust or other ductwork in or exclusively serving the Premises or in the Building used exclusively by or for the Premises will be de-commissioned to the extent required by, and in accordance with, applicable Legal Requirements and in accordance with best industry practice; (b) the interior surfaces of the Premises (including floors, walls, ceilings, and counters), piping, supply lines, waste lines and plumbing, and all such exhaust or other ductwork in the Premises, may be released for unrestricted use and occupancy or disposed of in compliance with applicable Legal Requirements without: (y) incurring special costs on account of uncompleted de-commissioning work; or (z) undertaking special procedures for demolition, disposal, investigation, assessment, cleaning or removal of such Hazardous Materials related to the former laboratory and clinical use areas of the Premises; and (c) the Premises may be occupied for office and laboratory use, or demolished or renovated. The final report shall also include reasonable detail concerning the clean-up measures that were taken, the clean-up locations, the tests run and the analytic results. If Tenant fails to perform its obligations under this 11.9 without limiting any other right or remedy, Landlord may, on five (5) business fays' prior written notice to Tenant, perform such obligations at Tenant's expense, and Tenant shall within ten (10) days of demand reimburse Landlord for all out-of-pocket costs and expenses incurred by Landlord in connection with such work. Tenant's obligations under this Section 11.9 shall survive the expiration or earlier termination of this Lease.

On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Surrender Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant laboratory operations. Tenant shall reimburse Landlord, within ten (10) days of demand as Additional Rent, for the expense incurred by Landlord for Landlord's environmental consultant to review and approve the Surrender Plan and to visit the Premises and verify satisfactory completion of the same. Landlord shall have the unrestricted right to deliver such Surrender Plan and any report by Tenant's or Landlord's environmental consultants with respect to the surrender of the Premises to third parties; provided, however, that such Surrender Plan may be accompanied by a statement alerting any other recipient (other than Landlord Parties) that said other recipient shall not be entitled to rely on the Surrender Plan. Notwithstanding the foregoing, upon receipt of a written request from Landlord, Tenant will exercise reasonable efforts (at no additional cost to Tenant) to obtain a reliance letter from the issuer that such Surrender Plan may be relied upon by the subsequent tenant of the Premises (but not any tenants beyond that).

If the Tenant fails to surrender possession of the Premises upon the expiration or sooner termination of this Lease, the Tenant shall pay to Landlord, as rent for any period after the expiration or sooner termination of this Lease an amount equal to one hundred fifty percent (150%) of the Annual Fixed Rent and the Additional Rent required to be paid under this Lease as applied to any period in which the Tenant shall remain in possession. Acceptance by the Landlord of such payments shall not constitute a consent to a holdover hereunder or result in a renewal or extension of the Tenant's rights of occupancy. Such payments shall be in addition to and shall not affect or limit the Landlord's right of reentry, Landlord's right to collect such damages as may be available at law, or any other rights of the Landlord under this Lease or as provided by law.

Section 11.10 Ground Lease.

This Lease is in all respects subject to the ground lease (the "**Ground Lease**") between the Landlord's predecessor in interest as lessee and the Massachusetts Institute of Technology ("**MIT**") as lessor dated April 20, 1986, as amended by that certain First Amendment to Construction and Lease Agreement dated as of December 15, 1997, and that certain Second Amendment to Construction and Lease Agreement dated as of June 12, 2000. If the Ground Lease shall terminate during the Term for any reason whatsoever, except as may otherwise be agreed in a non-disturbance agreement between Tenant and MIT, this Lease shall be terminable by Landlord in its sole discretion with the same force and effect as if such termination date had been named herein as the date of expiration hereof.

Section 11.11 Security Deposit.

INTENTIONALLY OMITTED

Section 11.12 Financial Reporting.

Tenant shall from time to time·(but at least annually) on the anniversary of the Lease provide Landlord with financial statements of Tenant, together with related statements of Tenant's operations for Tenant's most recent fiscal year then ended, certified by an independent certified public accounting firm.

Section 11.13 Cambridge Employment Plan.

The Tenant agrees to sign an agreement with the Employment and Training Agency designated by the City Manager of the City of Cambridge as provided in subsections (a) - (g) of Section 244 of Ordinance Number 1005 of the City of Cambridge, adopted April 23, 1984.

Section 11.14 Parking and Transportation Demand Management.

Tenant covenants and agrees to work cooperatively with Landlord to develop a parking and transportation demand management ("**PTDM**") program that comprises part of a comprehensive PTDM for University Park. In connection therewith, the use of single occupant vehicle commuting will be discouraged and the use of alternative modes of transportation and/or alternative work hours will be promoted. Without limitation of the foregoing, Tenant agrees that its PTDM program {and Tenant will require in any sublease or occupancy agreement permitting occupancy in the Premises that such occupant's PTDM program) will include offering a subsidized MBTA transit pass, either constituting a full subsidy or a subsidy in an amount equal to the maximum deductible amount therefore allowed under the federal tax code, to any employee working in the Premises requesting one. Tenant agrees to comply with the traffic mitigation measures required by the City of Cambridge, and Tenant shall otherwise comply with all legal requirements of the City of Cambridge pertaining thereto.

Section 11.15 REIT Savings.

If Landlord or any affiliate of Landlord has elected to qualify as a real estate investment trust (a "**REIT**"), any service required or permitted to be performed by Landlord pursuant to the Lease or this Agreement, the charge or cost of which may be treated as impermissible tenant service income under the laws governing a REIT, may be performed by a taxable REIT subsidiary that is affiliated with either Landlord or Landlord's property manager, an independent contractor of Landlord or Landlord's property manager (the "**Service Provider**"). If Tenant is subject to a charge under the Lease or this Agreement for any such service, then, at Landlord's direction, Tenant will pay such charge either to Landlord for further payment to the Service Provider or directly to the Service Provider, and, in either case, (i) Tenant's actual costs for such service shall not increase, (ii) Landlord will credit such payment against any charge for such service made by Landlord to Tenant under the Lease, and (iii) such payment to the Service Provider will not relieve Landlord from any obligation under the Lease concerning the provisions of such service.

IN WITNESS WHEREOF, this Lease has been executed and delivered as of the date first above written as a sealed instrument.

LANDLORD:

UP 64 SIDNEY STREET, LLC,
a Delaware limited liability company

By: ____/s/ Michael Farley_____
Name: _____Michael Farley_____
Title: __Vice President_____

TENANT:

VERICEL CORPORATION,
a Michigan corporation

By:__/s/ Michael G. Halpin
Name: ____Michael G. Halpin _____
Title: ___Chief Operating Officer

EXHIBIT A

Basic Lease Terms

Security Deposit:	Intentionally Omitted
Landlord's Address for Notices:	UP 64 SIDNEY STREET, LLC c/o Brookfield Properties 350 Massachusetts Avenue Cambridge, Massachusetts 02139 Attention: General Manager with copies to: UP 64 SIDNEY STREET, LLC c/o Brookfield Properties 250 Vesey Street, 15th Floor New York, NY 10281 Attention: General Counsel and: UP 64 SIDNEY STREET, LLC c/o Brookfield Properties 250 Vesey Street, 15th Floor New York, NY 10281 Attention: Executive Vice President, Leasing
Tenant's Address for Notices:	Vericel Corporation 64 Sidney Street Cambridge, MA 02139 Attn: Chief Operating Officer With copies in like manner to: Vericel Corporation 64 Sidney Street Cambridge, MA 02139 Attn: Vice President, Legal Affairs
Premises:	57,159 total rentable square feet (rsf) comprising that portion of the 1st, 2nd and 3rd floors of the Building depicted on Exhibit B-2 to the Lease.

Parking Privileges:	During the Term, Landlord shall provide, and Tenant shall pay for, one hundred seven (107) parking passes. During the Term the Tenant shall pay the market rate from time to time in effect for parking passes provided by Landlord as aforesaid. Market rate shall be reasonably determined by Landlord based on comparable parking spaces and usage rights available in the Kendall Square/Cambridge Center area. Tenant shall have the right to lease additional parking passes, as available, on a month to month basis. Visitor parking will also be available within the parking garage at standard hourly rates. Should Tenant expand the Premises in the future, the Parking Privileges shall be increased on the basis of one and one half parking passes per each one thousand square feet of space leased.
Permitted Uses:	Research and development and general office use, together with ancillary manufacturing associated therewith to the extent permitted under applicable laws.

EXHIBIT B

Legal Description

A parcel of land situated in the City of Cambridge, Middlesex County, Commonwealth of Massachusetts, being more particularly bounded and described as follows:

Beginning at the intersection of the relocated southeasterly street line of Sidney Street and the southwesterly street line of a private way (formerly Auburn Street);

Thence running S 51° 25’ 00” E along said southwesterly line of a private way, a distance of 131.51 feet, to a point;

Thence running along the line of a private way on the following three (3) courses:

S 38° 25’ 13” W, a distance of 176.99 feet to a point;

Westerly on a curve to the left having a radius of 60.00 feet, an arc length of 62.88 feet to a point;

and N 51° 34’ 47” W, a distance of 91.97 feet to a point on the aforesaid relocated southeasterly street line of Sidney Street;

Thence running N 38° 25’ 13” E, along said southeasterly line, a distance of 17.52 feet, to a point;

Thence running S 51° 34’ 47” E, along a jog in said southeasterly line, a distance of 4.00 feet, to a point;

Thence running N 38° 25’ 13” E, along said southeasterly line, a distance of 201.18 feet, to the point of beginning.

The above-described parcel contains 27,580 square feet, more or less, or 0.6332 acres, more or less and is shown as Lot 4(A) on a plan entitled “Plan of Land in Cambridge, Massachusetts, 64 Sidney Street” prepared by Cullinan Engineering Co., Inc., which plan is recorded with the Middlesex S.D. Registry of Deeds in Book 19753, Page 54.

Included within the above-described property are the following parcels of registered land:

a. That parcel of land shown on Land Court Plan 7631A;
b. A portion of the land shown as Lot Bl on Land Court Plan 3993C; and
c. A portion of the land shown as Lot C on Land Court Plan 3993B.

EXHIBIT B-1

Map of University Park

EXHIBIT B - 1


350 Mass Ave
300 Mass Ave
Kennedy Biscuit Lofts
23 Sidney
20 Sidney Hotel @ MIT Star Market
55 Franklin St. Parking Garage
45 Sidney
38 Sidney
35 Landsdowne
40 Landsdowne
75 Sidney
64 Sidney
65 Landsdowne
80 Landsdowne Parking
91 Sidney
Pilgrim Parking
88 Sidney
100 Landsdowne
FRANKLIN STREET
SIDNEY STREET
LANDSDOWNE STREET

EXHIBIT B-2

Depiction of Premises


Brookfield Properties
64 Sidney St
Cambridge MA
3rd Floor
Vertical

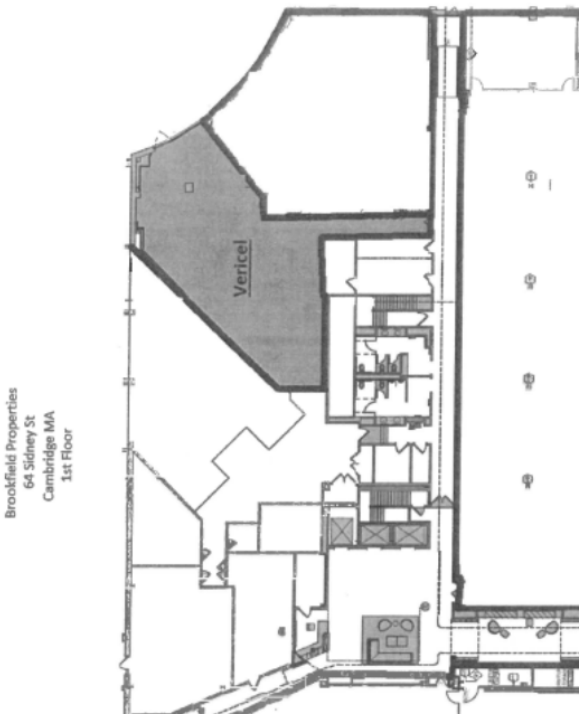

Brookfield Properties
64 Sidney St
Cambridge MA
1st Floor
Vericel

EXHIBIT C

Work Allowance

1. Landlord shall provide to Tenant an allowance (the "**Refurbishment Allowance**") equal to Four Million Two Hundred Eighty-Six Thousand Nine Hundred Twenty-Five and 00/100 Dollars ($4,286,925.00), for application to the costs and expenses, more particularly set forth below, incurred by or on behalf of Tenant. If Tenant incurs costs in excess of the Refurbishment Allowance, then all such costs shall be born solely by Tenant.

2. The application of the Refurbishment Allowance by Landlord shall be limited to payment of the following costs and expenses incurred by or on behalf of Tenant in connection with leasehold improvements to the Premises; the actual documented and verified cost pursuant to Tenant's design and construction contracts, including without limitation the associated contractor's overhead and profit and general conditions incurred in the construction of the leasehold improvements to the Premises, except for the making of improvements, installation of items which are moveable rather than permanent improvements.(but excluding cabling), examples of which may include furniture, telephone communications and security equipment, and bench-top laboratory equipment items such as microscopes.

3. During the construction of any leasehold improvements with respect to which Tenant desires to have the Refurbishment Allowance applied, and in accordance with the commercially reasonable terms and conditions typically imposed upon a landlord pursuant to a construction loan agreement, such as, without limitation, retainage, lien waiver, and other requisition conditions. Tenant shall, on a monthly basis (as the Tenant's contractor submits to Tenant its application for payment), deliver to Landlord a requisition for payment showing the costs of the leasehold improvements in question and the amount of the current payment requested from Landlord for disbursement from the Refurbishment Allowance within thirty (30) days after receipt of Tenant's requisition. Payments made on account of Tenant's requisitions shall be made from the Refurbishment Allowance provided Tenant has complied with Landlord's disbursement requirements and there is no Event of Default in existence and continuing. Following the completion of any such leasehold improvements, Tenant shall deliver to the Landlord, within ninety (90) days of completion, a statement showing the final costs of such leasehold improvements, the amounts paid to date, or on behalf of the Tenant, and any amounts available for release of retainage. The Refurbishment Allowance shall be available for disbursement to Tenant at any time following the Commencement Date of this Lease for any work that commences after the execution of this Lease. Landlord shall have no obligation to pay any portion of the Refurbishment Allowance to Tenant with respect to any requisition first submitted by Tenant to Landlord after December 31, 2023.

4. There shall be no construction oversight fee paid to Landlord, however, Landlord shall be reimbursed by Tenant for any reasonable and actual third-party, out-of-pocket expenses incurred by Landlord in the review and approval of Tenant's plans, specifications, improvements and construction, but in no event shall such reimbursement be greater than $5,000 in the aggregate.

EXHIBIT D

STANDARD SERVICES

Landlord shall provide, or cause to be provided, the following standard services throughout the Term, which services may be modified from time to time by Landlord:

A. Regular maintenance of interior plants and exterior landscaping of the Building and all University Park common areas.

B. Regular maintenance, sweeping and snow removal of exterior areas around the Building, parking areas and throughout University Park.

C. Complete interior and exterior cleaning of all windows two times per year.

D. Daily, weekday maintenance of hallways, passenger elevators, common area bathrooms, lobby areas and· vestibules.

E. Periodic cleaning of stairwells, freight elevators, and back of house areas.

F. Daily, weekday rubbish removal of all common area trash receptacles.

G. Intentionally Omitted.

H. Maintenance and repair of all base Building mechanical, electrical, plumbing and life safety systems and all other building systems serving the common areas.

I. Operation and maintenance of Building surveillance and alarm systems, links to the University Park command center, and security officer services in the Building and throughout University Park as appropriate in Landlord's reasonable determination.

J. Conditioned air for HVAC purposes shall be provided to the Premises from central mechanical equipment and shall be available 24 hours per day, 7 days per week: provided, however, Landlord reserves the right, pursuant to Section 3.5 of this Lease, to charge for conditioned air provided after normal business hours (8am - 6pm) if Landlord reasonably determines that demand for such conditioned air is not consistently needed throughout the Building during such non-business hours. Any charges for conditioned air shall include Landlord's reasonable estimate of the cost of energy, additional equipment maintenance and wear and tear associated with such afterhours use, but shall not include a surcharge or profit to Landlord.

K. All utilities for all interior common areas and exterior building lighting.

L. Regular maintenance of banners, building directories and other building standard directional signage and amenities.

M. Reasonably adequate water and sewer service to the Premises.

Tenant is responsible to perform, at Tenant's expense, daily, weekday cleaning of the Premises in a manner comparable to similar first-class office space in the Cambridge area.

EXHIBIT E

RULES AND REGULATIONS

DEFINITIONS

Wherever in these Rules and Regulations the word “Tenant” is used, it shall be taken to apply to and include the Tenant and its agents, employees, invitees, licensees, contractors, any subtenants and is to be deemed of such number and gender as the circumstances require. The word “Premises” is to be taken to include the space covered by the Lease. The word “Landlord” shall be taken to include the employees and agents of Landlord. Other capitalized terms used but not defined herein shall have the meanings set forth in the Lease. Any consents or approvals required of Landlord herein shall not be unreasonably withheld or delayed.

GENERAL USE OF BUILDING

A. Space for admitting natural light into any public area or tenanted space of the Building shall not be covered or obstructed by Tenant except in a manner reasonably approved by Landlord.

B. Toilets, showers and other like apparatus shall be used only for the purpose for which they were constructed.

C. Intentionally Omitted.

D. No sign, advertisement, notice or the like, shall be used in the Building by Tenant (other than at its office or as permitted in the Lease). If Tenant violates the foregoing, Landlord may remove the violation without liability and may charge all costs and expenses incurred in so doing to Tenant.

E. Tenant shall not throw or permit to be thrown anything out of windows or doors or down passages or elsewhere in the Building, or bring or keep any pets therein, or commit or make any indecent or improper acts or noises. In addition, Tenant shall not do or permit anything which will obstruct, injure, annoy or interfere with other tenants or those having business with them, or affect any insurance rate on the Building or violate any provision of any insurance policy on the Building.

F. Unless expressly permitted by the Landlord in writing:

(1) Except for the special key to Tenant’s irradiator room, no additional locks or similar devices shall be attached to any door or window and no keys other than those provided by the Landlord shall be made for any door. If more than two keys for one lock are desired by the Tenant, the Landlord may provide the same upon payment by the Tenant. Upon termination of this lease or of the Tenant’s possession, the Lessee shall surrender all keys to the Premises and shall explain to the Landlord all combination locks on safes, cabinets and vaults.

(2) In order to insure proper use and care of the Premises Tenant shall not install any shades, blinds, or awnings or any interior window treatment without consent of Landlord. Blinds must be building standard.

(3) All doors to the Premises are to be kept closed at all times except when in actual use for entrance to or exit from such Premises. The Tenant shall be responsible for the locking of doors and the closing of any transoms and windows in· and to the Premises. Any damage or loss resulting from violation of this rule shall be paid for by the Tenant.

(4) The Tenant shall not install or operate any steam or internal combustion engine, boiler, machinery in or about the Premises, or carry on any mechanical business therein. All equipment of any electrical or mechanical nature shall be placed in settings which absorb and prevent any vibration, noise or annoyance.

G. Landlord shall designate the time when and the method whereby freight, small office equipment, furniture, safes and other like articles may be brought into, moved or removed from the Building or Premises, and to designate the location for temporary disposition of such items.

H. The Premises shall not be defaced in any way. No changes in the HVAC, electrical fixtures or other appurtenances of said Premises shall be made without the prior approval of Landlord and in accordance with Landlord's construction rules and regulations.

I. For the general welfare of all tenants and the security of the Building. Landlord may require all persons entering and/or leaving the Building on weekends and holidays and between the hours of 6:00 p.m. and 8:00 a.m. to register with the Building attendant or custodian by signing his name and writing his destination in the Building, and the time of entry and actual or anticipated departure, or other procedures deemed necessary by Lessor. Landlord may deny entry during such hours to any person who fails to provide satisfactory identification.

J. No animals, birds, pets, and no bicycles or vehicles of any kind shall be brought into or kept in or about said Premises or the lobby or halls of the Building. Tenant shall not cause or permit any unusual or objectionable odors, noises or vibrations to be produced upon or emanate from said Premises.

K. Unless specifically authorized by Landlord, employees or agents of landlord shall not perform for nor be- asked by Tenant to perform work other than their regularly assigned duties.

L. Landlord shall have the right to prohibit any advertising by Tenant which, in Landlord's reasonable opinion tends to impair the reputation of the Building or its desirability as an office building and, upon written notice from Landlord, Tenant shall promptly discontinue such advertising.

M. Canvassing, soliciting and peddling in the Building is prohibited and Tenant shall cooperate to prevent the same from occurring.

N. All parking, Building operation, or construction rules and regulations which may be established from time to time by Landlord on a uniform basis shall be obeyed.

O. Tenant shall not place a load on any floor of said Premises exceeding the floor load limits for the Building. Landlord reserves the right to prescribe the weight and position of all safes and heavy equipment.

P. Tenant shall not install or use any air conditioning or heating device or system other than those approved by Landlord.

Q. Landlord shall have the right to make such other and further reasonable rules and regulations as in the judgment of Landlord, may from time to time be needful for the safety, appearance, care and cleanliness of the Building and for the preservation of good order therein, and Tenant shall be given reasonable notice of same.

R. The access road and loading areas, parking areas, sidewalks, entrances, lobbies, halls, walkways, elevators, stairways and other common area provided by Landlord shall not be obstructed by Tenant, or used for other purpose than for ingress and egress.

S. In order to insure proper use and care of the Premises Tenant shall not install any call boxes or communications systems or wiring of any kind without Landlord's permission and direction.

T. In order to insure proper use and care of the Premises Tenant shall not manufacture any commodity, or prepare or dispense for sale, except through vending machines for the benefit of employees and invitees of Tenant, any foods or beverages, tobacco, flowers, or other commodities or articles without the written consent of Landlord.

U. In order to insure use and care of the Premises Tenant shall not enter any janitors' closets, mechanical or electrical areas, telephone closets, loading areas, roof or Building storage areas without the written consent of Landlord.

V. In order to insure proper use and care of the Premises Tenant shall not place doormats in public corridors without consent of Landlord.

EXHIBIT F

Roof Equipment

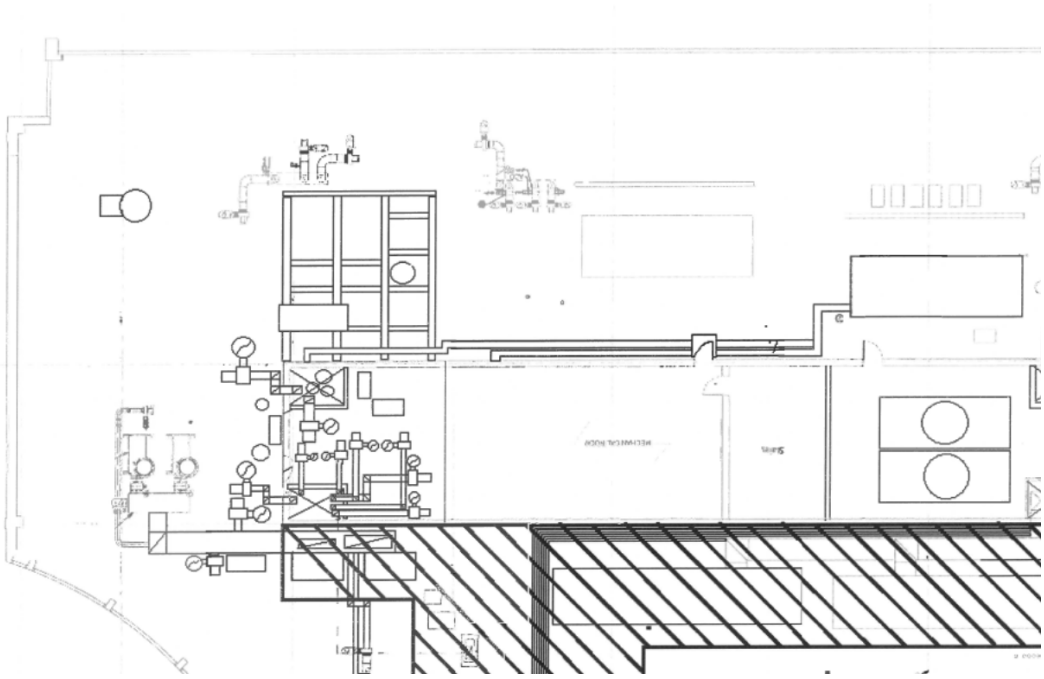


EXHIBIT G

Removal Requirements

Landlord Retained Property: All built-in surfaces, lab benches, built-in wooden cubicles and casework, elevators, dumbwaiters, lifts piping and instrumentation for utilities, built-in autoclaves (which does not need to be in working order), HVAC equipment, fume hoods, cold rooms, utility generation equipment including RO/DI water, plant steam boiler, hot water boilers, vacuum pump skid, compressed air skid, hot water circulation pumps, the Roof Equipment, or other similar additions, equipment, property or improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in or walk-in cold rooms, built-in or walk-in warm rooms, deionized water systems, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any back-up generator and transfer switch, if any, installed by Tenant.

Tenant Removable Property: All movable shelving and racks, all carts, all medical gas tanks, all movable office furniture and equipment not attached to the Premises, movable autoclave, biological safety cabinets, all modular cubicles, all freezers, refrigerators, cryostorage equipment, snorkels, incubators, centrifuges, microscopes, balances, glasswashers, analytical equipment, computers, telephone and computer rack and hubs, security and access control systems exclusively serving the Premises and all tel/data cabling and wiring exclusively serving the Premises.

Notwithstanding anything to the contrary in the Lease but subject to Section 11.9 of this Lease, including this Exhibit G, Landlord may require removal by the Tenant of all or any portion of any specialized alterations and additions made to the Premises, provided, however, Landlord agrees that none of the alterations or additions in the Premises as of the Commencement Date of this Lease constitute specialty alterations and additions that must be removed at the expiration or earlier termination of the Term of this Lease. For purposes of the foregoing, “specialized alterations and additions” shall mean any alterations or additions which, as reasonably determined by the Landlord, (i) would adversely affect the general utility of the Building for use by existing tenants or prospective future tenants thereof, or (ii) will require unusual expense to readapt the Premises to normal office/laboratory use.

EXHIBIT H

Permitted Hazardous Materials

Vericel Chemical Inventory List

Chemical Name	Total
0.5M EDTA pH 8.0	
10% Neutral Buffered Formalin	
10% Sodium Dodecyl Sulfate (SDS) solution	
1-9 Dimethyl Methylene Blue	
1-Butanol	
2-Propanol	
520 Foam Adhesive	
70% Isopropyl Alcohol (sterile spray bottles)	
Acetic Acid, Glacial	
Acetone	
Advance	
Advanced Hand Sanitizer	
Aerokroil	
Agarose	
Agarose, Low Gelling Temperature	
Air Duct Sealant	
Ajax Cleaner	
Alex Fast Dry Caulking	
All-Purpose Cleaner	
Ammonium Hydroxide (28-30%)	
BCA Protein Assay Kit	
BD FACSClean	
Bleach	
Brilliant Blue R concentrate	
Bromophenol Blue	
Busch R-590 Vacuum Oil	
Cacodylic Acid, sodium salt Sln 0.2M	
Calcium Chloride, Dihydrate	
Calcium Lime Rust (CLR)	
Cholera Enterotoxin	
CIP 100	
Clear & Mild Hand Wash	
Contact Cement	
Continuous Air Freshener Refill	
Corotech High Performance	
Coverage Plus NPD	
Cucumber Melon TCELL	

Floor Tile Adhesive
Folin & Ciocalteu's Phenol reagent 2N
Formaldehyde (methanol free)
Fragrance Urinal Screen
Gentamicin Reagent Solution
Harris' Alum Hematoxylin
Harris' Hematoxylin Sln
Healthcare Bleach Germicidal
Hematoxylin
Hematoxylin Stain
HEPES Free Acid
Hexamethyldisisazane (HMDS)
High Gloss Acrylic
High Performance Enamel
Hydrochloric Acid Solution 0.01 N
Hydrochloric Acid Solution 0.1 N
Hydrochloric Acid Solution 1.0 N
Hydrochloric Acid Solution 2 N
Hydrocortisone
Isopropyl Alcohol 70%
Kilz 2 Latex
Larcoloid Acrylic Latex
Latex Dryfall
Lemon Oil Furniture Polish
Liquid Defoamer
Lysol Wipes
Magic Eraser
MaxxLife Food Grade Grease
Megaloc
Mineral Oil
N,N-Dimethylformamide
Neutral Buffered Formalin (10%)
Nile blue stain
Non-Acid Bowl Cleaner
Non-Acid DI Bathroom Cleaner
Non-Ammoniated Glass Cleaner
Odorless Mineral Spirit
One Shot Enriched Foam Hand Soap
Paint Thinner
Paraformaldehyde powder

Safranin O
samples in 10% buffered formalin
SaniZide Plus
Saponin (20-30%)
Saponin, from Quillaja Bark
SF F720 BL
Silicone II
Simply Clean
Snapback Spray Buff
Sodium Bicarbonate
Sodium Chloride
Sodium Citrate Tribasic
Sodium Citrate Tribasic Dihydrate
Sodium Hydroxide
Sodum Chloride
Spor Klenz RTU
Spor-klenz (EPA reg # 1043-119)
Sterile 70% Isopropanol
Steris Coverage Plus NPD (EPA reg # 6836-139-1043)
Steris Coverage Plus NPD (EPA reg # 6836-139-1043)
Steris LpHse (EPA reg # 1043-92)
Steris LpHse (EPA reg # 1043-92)
Stride Citrus HC 3 Neutral Cleaner
Super Spec Interior Latex
Thin Set Mortar
Tough Guy Food Contact Sanitizer
Trizma Hydrochloride Solution
Truck Bed Coating
Trypan Blue Stain
Trypan Blue Stain 0.4%
Ultra Pure Glycerol

Vericel Corporation 2019 Omnibus Incentive Plan
Incentive Stock Option Award Agreement

AWARD AGREEMENT (the "Agreement"), effective as of [[GRANTDATE]] (the "Grant Date"), is entered into by and between Vericel Corporation, a Michigan corporation (the "Company"), and [[FIRSTNAME]] [[LASTNAME]] (the "Participant").

1. Grant of Option. The Company hereby grants to the Participant a stock option (the "Option") to purchase [[SHARESGRANTED]] shares of common stock of the Company, no par value (the "Shares"), at the exercise price of [[GRANTPRICE]] per Share (the "Exercise Price").

2. Subject to the Plan. This Agreement is subject to and governed by the terms and provisions of the Vericel Corporation 2019 Omnibus Incentive Plan (the "Plan"), and, unless the context requires otherwise, terms used herein shall have the same meaning as in the Plan. In the event of a conflict between the provisions of the Plan and this Agreement, the Plan shall control.

3. Term of Option. Unless the Option terminates earlier pursuant to the provisions of this Agreement, the Option shall expire on the tenth anniversary of the Grant Date.

4. Vesting. Subject to the discretion of the Committee to accelerate the exercisability of the Option, the Option shall become vested and exercisable in equal quarterly installments over four years commencing on the Grant Date, provided that the Participant is employed by the Company or an Affiliate on the applicable date. In addition, upon termination of the Participant's employment due to the Participant's death or Disability, this Option shall become vested and exercisable in full. For purposes of this Option, "Disability" shall have the meaning set forth in Treas. Reg. Section 1.409A3(i)(4).

5. Exercise of Option.

(a) Manner of Exercise. To the extent vested, the Option may be exercised, in whole or in part, by delivering written notice to the Company in such form as the Company may require from time to time. Such notice shall specify the number of Shares subject to the Option as to which the Option is being exercised, and shall be accompanied by full payment of the Exercise Price of such Shares in a manner permitted under the terms of Section 5.5 of the Plan**.** The Option may be exercised only in multiples of whole Shares and no fractional Shares shall be issued.

(b) Status of the Option. This Stock is intended to qualify as an "incentive stock option" under Section 422 of Code, but the Company does not represent or warrant that this Option qualifies as such. The Participant should consult with his or her own tax advisors regarding the tax effects of this Option and the requirements necessary to obtain favorable income tax treatment under Section 422 of the Code, including, but not limited to, holding period requirements. To the extent any portion of this Option does not so qualify as an "incentive stock option," such portion shall be deemed to be a non-qualified stock option.

(c) Issuance of Shares. As soon as practicable following the exercise of the Option, payment of the Exercise Price for the Shares as to which the Option is exercised and compliance to the satisfaction of the Committee with all requirements under applicable laws or regulations in connection with such transfer and with the requirements hereof and of the Plan, the Company shall issue to the Participant the applicable number of Shares in the form of fully paid and nonassessable Shares. The determination of the Committee as to such compliance shall be final and binding on the Participant.

(d) Capitalization Adjustments. The number of Shares subject to the Option and the Exercise Price shall be equitably and appropriately adjusted, if applicable, as provided in Section 11.2 of the Plan.

(e) Notice of Disposition. The Participant agrees to notify the Company in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of the Option that occurs before the later of two (2) years after the Grant Date or one (1) year after such Shares are transferred to the Participant.

(f) Withholding. The provisions of this paragraph will apply only to the extent that the Option is not treated as an incentive stock option pursuant to paragraph (b) of this Section. No Shares will be issued on exercise of the Option unless and until the Participant pays to the Company, or makes satisfactory arrangements with the Company for payment of, any federal, state or local taxes required by law to be withheld in respect of the exercise of the Option. The Participant hereby agrees that the Company may withhold from the Participant's wages or other remuneration the applicable taxes. At the discretion of the Company, the applicable taxes may be withheld from the Shares otherwise deliverable to the Participant on exercise of the Option, up to the Participant's minimum required withholding rate or such other rate that will not trigger a negative accounting impact.

6. Termination of Option. To the extent that an Option is vested, it may be exercised at any time specified in this Agreement, provided that, except as set forth in the following provisions of this Section 6, the Participant is still employed by the Company at the time of exercise. In all other cases, the Option shall terminate as set forth in the following subsections. Except as provided herein and subject to the discretion of the Committee to permit continued vesting of the Option, any portion of this Option that has not vested as of the date of termination of employment shall immediately terminate and be of no further force or effect.

(a) Death**.** Upon the death of an Optionee while employed by the Company or an Affiliate, this Option shall be exercisable in full by the person or persons entitled to do so under the will of the Participant, or, if the Participant shall fail to make testamentary disposition of the Option, or if the Participant shall die intestate, by the Participant's executor or personal representative, at any time prior to the expiration date of this Option or within one (1) year of the Participant's date of death, whichever is the shorter period.

(b) Disabled Participant**.** Upon the termination of employment by the Company or an Affiliate of a Disabled Participant for reasons other than Cause, the unexercised, vested portion of this Option shall be exercisable by the Participant at any time prior to the

expiration date of such Option or within one year of the Participant's date of termination of employment, whichever is the shorter period. For purposes of this Agreement, a "Disabled Participant" shall mean the Participant is disabled within the meaning of Section 22(e)(3) of the Code, or as otherwise determined by the Committee in its discretion. The Committee may require such proof of disability as the Committee in its sole and absolute discretion deems appropriate and the Committee's determination as to whether the Participant is a Disabled Participant shall be final and binding on all parties concerned.

(c) Termination without Cause**.** Upon the termination of employment by the Company or an Affiliate of a Participant other than a Disabled Participant, for reasons other than death or Cause, the unexercised, vested portion of this Option shall be exercisable by the Participant at any time prior to the expiration date of such Option or within three (3) months of the Participant's date of termination of employment, whichever is the shorter period.

(d) Termination for Cause. Upon the termination of the Participant's employment with the Company or an Affiliate for Cause, unless the Option has earlier terminated, the Option shall immediately terminate in its entirety and shall thereafter not be exercisable to any extent whatsoever. For purposes of this Agreement, except as otherwise provided in a written employment or severance agreement between the Participant and the Company or an Affiliate or a severance plan of the Company or an Affiliate covering the Participant, "Cause" shall mean a determination by the Committee that the Participant has (i) materially breached his or her employment or service contract with the Company, (ii) been engaged in disloyalty to the Company or an Affiliate, including, without limitation, fraud, embezzlement, theft, commission of a felony or proven dishonesty in the course of his or her employment or service, which will materially harm the interests of the Company or the Affiliate, (iii) disclosed trade secrets or confidential information of the Company to persons not entitled to receive such information, (iv) breached any written noncompetition or nonsolicitation agreement between the Participant and the Company or an Affiliate in a manner which the Committee determines will cause material harm to the interests of the Company or an Affiliate, or (v) engaged in such other behavior materially detrimental to the interests of the Company, in each case as the Committee determines.

The Committee's determination of the reason for termination of the Participant's employment shall be conclusive and binding on the Participant and his or her representatives or legatees.

(e) Extension of Exercise Period. Notwithstanding any provisions of paragraphs (a), (b), (c) or (d) of this Section to the contrary, if exercise of the Option following termination of employment during the time period set forth in the applicable paragraph or sale during such period of the Shares acquired on exercise would violate any of the provisions of the federal securities laws (or any Company policy related thereto), the time period to exercise the Option shall be extended until the later of (i) forty-five (45) days after the date that the exercise of the Option or sale of the Shares acquired on exercise would not be a violation of the federal securities laws (or a related Company policy), or (ii) the end of the time period set forth in the applicable paragraph.

7. Change in Control.

(a) Effect on Option. In the event of a Change in Control, to the extent the successor company (or a subsidiary or parent thereof) does not assume or substitute for the Option on substantially the same terms and conditions, the Option shall (i) vest and become exercisable on the day prior to the date of the Change in Control if the Participant is then employed by the Company or an Affiliate and (ii) terminate on the date of the Change in Control. In the event of a Change in Control, to the extent the successor company (or a subsidiary or parent thereof) assumes or substitutes for the Option on substantially the same terms and conditions (which may include providing for settlement in the common stock of the successor company (or a subsidiary or parent thereof)), if within twelve (12) months following the date of the Change in Control the Participant's employment is terminated by the Company or an Affiliate (or the successor company or a subsidiary or parent thereof) without Cause or by the Participant for Good Reason, the Option shall become fully vested and exercisable, and may be exercised by the Participant at any time prior to the expiration date of such Option or within three months of the Participant's date of termination of employment, whichever is the shorter period.

Notwithstanding the foregoing, if on the date of the Change in Control the Fair Market Value of one Share is less than the Exercise Price, then the Option shall terminate as of the date of the Change in Control, except as otherwise determined by the Committee.

(b) Good Reason. For purposes of this Agreement, except as otherwise provided in paragraph (c) of this Section, "Good Reason" shall mean (i) a reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of more than 10% in Participant's rate of annual base salary as in effect immediately prior to such Change in Control; (ii) a reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of more than 10% of the Participant's individual annual target or bonus opportunity, except under circumstances where the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) implement changes to the bonus structure of similarly situated employees, including but not limited to changes to the bonus structure designed to integrate the Company's or Affiliate's personnel with other personnel of the successor company (or an subsidiary or parent thereof); (iii) a significant and substantial reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of the Participant's responsibilities and authority, as compared with the Participant's responsibilities and authority in effect immediately preceding the Change in Control; or (iv) any requirement of the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) that Participant be based anywhere more than fifty (50) miles from Participant's primary office location at the time of the Change in Control.

(c) Other Agreement or Plan. The provisions of this Section (including the definitions of Cause and Good Reason), shall be superseded by the specific provisions, if any, of a written employment or severance agreement between the Participant and the Company or a severance plan of the Company covering the Participant, including a change in control severance agreement or plan, to the extent such a provision provides a greater benefit to the Participant.

8. Miscellaneous.

(a) No Rights of Stockholder. The Participant shall not have any of the rights of a stockholder with respect to the Shares subject to this Option until such Shares have been issued to him or her upon the due exercise of the Option.

(b) Nontransferability of Option. The Option shall be nontransferable otherwise than by will or the laws of descent and distribution, and during the lifetime of the Participant, the Option may be exercised only by the Participant or, during the period the Participant is under a legal disability, by the Participant's guardian or legal representative. Notwithstanding the foregoing, the Participant may, by delivering written notice to the Company, in a form provided by or otherwise satisfactory to the Company, designate a third party who, in the event of the Participant's death, shall thereafter be entitled to exercise the Option.

(c) Severability. If any provision of this Agreement shall be held unlawful or otherwise invalid or unenforceable in whole or in part by a court of competent jurisdiction, such provision shall (i) be deemed limited to the extent that such court of competent jurisdiction deems it lawful, valid and/or enforceable and as so limited shall remain in full force and effect, and (ii) not affect any other provision of this Agreement or part thereof, each of which shall remain in full force and effect.

(d) Governing Law. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of Michigan, other than its conflict of laws principles.

(e) Headings. The headings in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

(f) Notices. All notices required or permitted under this Agreement shall be in writing and shall be sufficiently made or given if hand delivered or mailed by registered or certified mail, postage prepaid. Notice by mail shall be deemed delivered on the date on which it is postmarked.

Notices to the Company should be addressed to:

Vericel Corporation
64 Sidney Street
Cambridge, MA 02139
Attention: Chief Financial Officer

Notice to the Participant should be addressed to the Participant at the Participant's address as it appears on the Company's records.

The Company or the Participant may by writing to the other party, designate a different address for notices. If the receiving party consents in advance, notice may be transmitted and received via telecopy or via such other electronic transmission mechanism as may be available to the parties. Such notices shall be deemed delivered when received.

(g) No Obligation to Continue Employment. Neither the Company nor any subsidiary is obligated by or as a result of the Plan or this Agreement to continue the Participant in employment and neither the Plan nor this Agreement shall interfere in any way with the right of the Company or any subsidiary to terminate the employment of the Participant at any time.

(h) Data Privacy Consent. In order to administer the Plan and this Agreement and to implement or structure future equity grants, the Company, its subsidiaries and Affiliates and certain agents thereof (together, the "Relevant Companies") may process any and all personal or professional data, including but not limited to Social Security or other identification number, home address and telephone number, date of birth and other information that is necessary or desirable for the administration of the Plan and/or this Agreement (the "Relevant Information"). By entering into this Agreement, the Participant (i) authorizes the Company to collect, process, register and transfer to the Relevant Companies all Relevant Information; (ii) waives any privacy rights the Participant may have with respect to the Relevant Information; (iii) authorizes the Relevant Companies to store and transmit such information in electronic form; and (iv) authorizes the transfer of the Relevant Information to any jurisdiction in which the Relevant Companies consider appropriate. The Participant shall have access to, and the right to change, the Relevant Information. Relevant Information will only be used in accordance with applicable law.

(i) Entire Agreement; Modification. The Agreement contains the entire agreement between the parties with respect to the subject matter contained herein and may not be modified, except as provided in the Plan or in a written document signed by each of the parties hereto, and may be rescinded only by a written agreement signed by both parties.

Vericel Corporation 2019 Omnibus Incentive Plan
Incentive Stock Option Award Agreement

AWARD AGREEMENT (the "Agreement"), effective as of [[GRANTDATE]] (the "Grant Date"), is entered into by and between Vericel Corporation, a Michigan corporation (the "Company"), and [[FIRSTNAME]] [[LASTNAME]] (the "Participant").

1. Grant of Option. The Company hereby grants to the Participant a stock option (the "Option") to purchase [[SHARESGRANTED]] shares of common stock of the Company, no par value (the "Shares"), at the exercise price of [[GRANTPRICE]] per Share (the "Exercise Price").

2. Subject to the Plan. This Agreement is subject to and governed by the terms and provisions of the Vericel Corporation 2019 Omnibus Incentive Plan (the "Plan"), and, unless the context requires otherwise, terms used herein shall have the same meaning as in the Plan. In the event of a conflict between the provisions of the Plan and this Agreement, the Plan shall control.

3. Term of Option. Unless the Option terminates earlier pursuant to the provisions of this Agreement, the Option shall expire on the tenth anniversary of the Grant Date.

4. Vesting. Subject to the discretion of the Committee to accelerate the exercisability of the Option, the Option shall become vested and exercisable over four years, with 25% of the Shares vesting on the first anniversary of the Grant Date and 6.25% of the Shares vesting quarterly thereafter, provided that the Participant is employed by the Company or an Affiliate on the applicable date. In addition, upon termination of the Participant's employment due to the Participant's death or Disability, this Option shall become vested and exercisable in full. For purposes of this Award, "Disability" shall have the meaning set forth in Treas. Reg. Section 1.409A3(i)(4).

5. Exercise of Option.

(a) Manner of Exercise. To the extent vested, the Option may be exercised, in whole or in part, by delivering written notice to the Company in such form as the Company may require from time to time. Such notice shall specify the number of Shares subject to the Option as to which the Option is being exercised, and shall be accompanied by full payment of the Exercise Price of such Shares in a manner permitted under the terms of Section 5.5 of the Plan. The Option may be exercised only in multiples of whole Shares and no fractional Shares shall be issued.

(b) Status of the Option. This Stock is intended to qualify as an "incentive stock option" under Section 422 of Code, but the Company does not represent or warrant that this Option qualifies as such. The Participant should consult with his or her own tax advisors regarding the tax effects of this Option and the requirements necessary to obtain favorable income tax treatment under Section 422 of the Code, including, but not limited to, holding period

requirements. To the extent any portion of this Option does not so qualify as an "incentive stock option," such portion shall be deemed to be a non-qualified stock option.

(c) Issuance of Shares. As soon as practicable following the exercise of the Option, payment of the Exercise Price for the Shares as to which the Option is exercised and compliance to the satisfaction of the Committee with all requirements under applicable laws or regulations in connection with such transfer and with the requirements hereof and of the Plan, the Company shall issue to the Participant the applicable number of Shares in the form of fully paid and nonassessable Shares. The determination of the Committee as to such compliance shall be final and binding on the Participant.

(d) Capitalization Adjustments. The number of Shares subject to the Option and the Exercise Price shall be equitably and appropriately adjusted, if applicable, as provided in Section 11.2 of the Plan.

(e) Notice of Disposition. The Participant agrees to notify the Company in writing within fifteen (15) days after the date of any disposition of any of the Shares issued upon exercise of the Option that occurs before the later of two (2) years after the Grant Date or one (1) year after such Shares are transferred to the Participant.

(f) Withholding. The provisions of this paragraph will apply only to the extent that the Option is not treated as an incentive stock option pursuant to paragraph (b) of this Section. No Shares will be issued on exercise of the Option unless and until the Participant pays to the Company, or makes satisfactory arrangements with the Company for payment of, any federal, state or local taxes required by law to be withheld in respect of the exercise of the Option. The Participant hereby agrees that the Company may withhold from the Participant's wages or other remuneration the applicable taxes. At the discretion of the Company, the applicable taxes may be withheld from the Shares otherwise deliverable to the Participant on exercise of the Option, up to the Participant's minimum required withholding rate or such other rate that will not trigger a negative accounting impact.

6. Termination of Option. To the extent that an Option is vested, it may be exercised at any time specified in this Agreement, provided that, except as set forth in the following provisions of this Section 6, the Participant is still employed by the Company at the time of exercise. In all other cases, the Option shall terminate as set forth in the following subsections. Except as provided herein and subject to the discretion of the Committee to permit continued vesting of the Option, any portion of this Option that has not vested as of the date of termination of employment shall immediately terminate and be of no further force or effect.

(a) Death**.** Upon the death of an Optionee while employed by the Company or an Affiliate, this Option shall be exercisable in full by the person or persons entitled to do so under the will of the Participant, or, if the Participant shall fail to make testamentary disposition of the Option, or if the Participant shall die intestate, by the Participant's executor or personal representative, at any time prior to the expiration date of this Option or within one (1) year of the Participant's date of death, whichever is the shorter period.

(b) Disabled Participant**.** Upon the termination of employment by the Company or an Affiliate of a Disabled Participant for reasons other than Cause, the unexercised, vested portion of this Option shall be exercisable by the Participant at any time prior to the expiration date of such Option or within one year of the Participant's date of termination of employment, whichever is the shorter period. For purposes of this Agreement, a "Disabled Participant" shall mean the Participant is disabled within the meaning of Section 22(e)(3) of the Code, or as otherwise determined by the Committee in its discretion. The Committee may require such proof of disability as the Committee in its sole and absolute discretion deems appropriate and the Committee's determination as to whether the Participant is a Disabled Participant shall be final and binding on all parties concerned.

(c) Termination without Cause**.** Upon the termination of employment with the Company or an Affiliate of a Participant other than a Disabled Participant, for reasons other than death or Cause, the unexercised, vested portion of this Option shall be exercisable by the Participant at any time prior to the expiration date of such Option or within three (3) months of the Participant's date of termination of employment, whichever is the shorter period.

(d) Termination for Cause. Upon the termination of the Participant's employment by the Company or an Affiliate for Cause, unless the Option has earlier terminated, the Option shall immediately terminate in its entirety and shall thereafter not be exercisable to any extent whatsoever. For purposes of this Agreement, except as otherwise provided in a written employment or severance agreement between the Participant and the Company or an Affiliate or a severance plan of the Company or an Affiliate covering the Participant, "Cause" shall mean a determination by the Committee that the Participant has (i) materially breached his or her employment or service contract with the Company, (ii) been engaged in disloyalty to the Company or an Affiliate, including, without limitation, fraud, embezzlement, theft, commission of a felony or proven dishonesty in the course of his or her employment or service, which will materially harm the interests of the Company or the Affiliate, (iii) disclosed trade secrets or confidential information of the Company to persons not entitled to receive such information, (iv) breached any written noncompetition or nonsolicitation agreement between the Participant and the Company or an Affiliate in a manner which the Committee determines will cause material harm to the interests of the Company or an Affiliate, or (v) engaged in such other behavior materially detrimental to the interests of the Company, in each case as the Committee determines.

The Committee's determination of the reason for termination of the Participant's employment shall be conclusive and binding on the Participant and his or her representatives or legatees.

(e) Extension of Exercise Period. Notwithstanding any provisions of paragraphs (a), (b), (c) or (d) of this Section to the contrary, if exercise of the Option following termination of employment during the time period set forth in the applicable paragraph or sale during such period of the Shares acquired on exercise would violate any of the provisions of the federal securities laws (or any Company policy related thereto), the time period to exercise the Option shall be extended until the later of (i) forty-five (45) days after the date that the exercise

of the Option or sale of the Shares acquired on exercise would not be a violation of the federal securities laws (or a related Company policy), or (ii) the end of the time period set forth in the applicable paragraph.

7. Change in Control.

(a) Effect on Option. In the event of a Change in Control, to the extent the successor company (or a subsidiary or parent thereof) does not assume or substitute for the Option on substantially the same terms and conditions, the Option shall (i) vest and become exercisable on the day prior to the date of the Change in Control if the Participant is then employed by the Company or an Affiliate and (ii) terminate on the date of the Change in Control. In the event of a Change in Control, to the extent the successor company (or a subsidiary or parent thereof) assumes or substitutes for the Option on substantially the same terms and conditions (which may include providing for settlement in the common stock of the successor company (or a subsidiary or parent thereof)), if within twelve (12) months following the date of the Change in Control the Participant's employment is terminated by the Company or an Affiliate (or the successor company or a subsidiary or parent thereof) without Cause or by the Participant for Good Reason, the Option shall become fully vested and exercisable, and may be exercised by the Participant at any time prior to the expiration date of such Option or within three months of the Participant's date of termination of employment, whichever is the shorter period.

Notwithstanding the foregoing, if on the date of the Change in Control the Fair Market Value of one Share is less than the Exercise Price, then the Option shall terminate as of the date of the Change in Control, except as otherwise determined by the Committee.

(b) Good Reason. For purposes of this Agreement, except as otherwise provided in paragraph (c) of this Section, "Good Reason" shall mean (i) a reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of more than 10% in Participant's rate of annual base salary as in effect immediately prior to such Change in Control; (ii) a reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of more than 10% of the Participant's individual annual target or bonus opportunity, except under circumstances where the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) implement changes to the bonus structure of similarly situated employees, including but not limited to changes to the bonus structure designed to integrate the Company's or Affiliate's personnel with other personnel of the successor company (or an subsidiary or parent thereof); (iii) a significant and substantial reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of the Participant's responsibilities and authority, as compared with the Participant's responsibilities and authority in effect immediately preceding the Change in Control; or (iv) any requirement of the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) that Participant be based anywhere more than fifty (50) miles from Participant's primary office location at the time of the Change in Control.

(c) Other Agreement or Plan. The provisions of this Section (including the definitions of Cause and Good Reason), shall be superseded by the specific provisions, if any, of a written employment or severance agreement between the Participant and the Company or a

severance plan of the Company covering the Participant, including a change in control severance agreement or plan, to the extent such a provision provides a greater benefit to the Participant.

8. Miscellaneous.

(a) No Rights of Stockholder. The Participant shall not have any of the rights of a stockholder with respect to the Shares subject to this Option until such Shares have been issued to him or her upon the due exercise of the Option.

(b) Nontransferability of Option. The Option shall be nontransferable otherwise than by will or the laws of descent and distribution, and during the lifetime of the Participant, the Option may be exercised only by the Participant or, during the period the Participant is under a legal disability, by the Participant's guardian or legal representative. Notwithstanding the foregoing, the Participant may, by delivering written notice to the Company, in a form provided by or otherwise satisfactory to the Company, designate a third party who, in the event of the Participant's death, shall thereafter be entitled to exercise the Option.

(c) Severability. If any provision of this Agreement shall be held unlawful or otherwise invalid or unenforceable in whole or in part by a court of competent jurisdiction, such provision shall (i) be deemed limited to the extent that such court of competent jurisdiction deems it lawful, valid and/or enforceable and as so limited shall remain in full force and effect, and (ii) not affect any other provision of this Agreement or part thereof, each of which shall remain in full force and effect.

(d) Governing Law. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of Michigan, other than its conflict of laws principles.

(e) Headings. The headings in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

(f) Notices. All notices required or permitted under this Agreement shall be in writing and shall be sufficiently made or given if hand delivered or mailed by registered or certified mail, postage prepaid. Notice by mail shall be deemed delivered on the date on which it is postmarked.

Notices to the Company should be addressed to:

Vericel Corporation
64 Sidney Street
Cambridge, MA 02139
Attention: Chief Financial Officer

Notice to the Participant should be addressed to the Participant at the Participant's address as it appears on the Company's records.

The Company or the Participant may by writing to the other party, designate a different address for notices. If the receiving party consents in advance, notice may be transmitted and

received via telecopy or via such other electronic transmission mechanism as may be available to the parties. Such notices shall be deemed delivered when received.

(g) No Obligation to Continue Employment. Neither the Company nor any subsidiary is obligated by or as a result of the Plan or this Agreement to continue the Participant in employment and neither the Plan nor this Agreement shall interfere in any way with the right of the Company or any subsidiary to terminate the employment of the Participant at any time.

(h) Data Privacy Consent. In order to administer the Plan and this Agreement and to implement or structure future equity grants, the Company, its subsidiaries and Affiliates and certain agents thereof (together, the "Relevant Companies") may process any and all personal or professional data, including but not limited to Social Security or other identification number, home address and telephone number, date of birth and other information that is necessary or desirable for the administration of the Plan and/or this Agreement (the "Relevant Information"). By entering into this Agreement, the Participant (i) authorizes the Company to collect, process, register and transfer to the Relevant Companies all Relevant Information; (ii) waives any privacy rights the Participant may have with respect to the Relevant Information; (iii) authorizes the Relevant Companies to store and transmit such information in electronic form; and (iv) authorizes the transfer of the Relevant Information to any jurisdiction in which the Relevant Companies consider appropriate. The Participant shall have access to, and the right to change, the Relevant Information. Relevant Information will only be used in accordance with applicable law.

(i) Entire Agreement; Modification. The Agreement contains the entire agreement between the parties with respect to the subject matter contained herein and may not be modified, except as provided in the Plan or in a written document signed by each of the parties hereto, and may be rescinded only by a written agreement signed by both parties.

Vericel Corporation 2019 Omnibus Incentive Plan
Non-Qualified Stock Option Award Agreement for Non-Employee Directors

AWARD AGREEMENT (the "Agreement"), effective as of [[GRANTDATE]] (the “Grant Date”), is entered into by and between Vericel Corporation, a Michigan corporation (the “Company”), and [[FIRSTNAME]] [[LASTNAME]] (the “Participant”).

1. Grant of Option. The Company hereby grants to the Participant a non-qualified stock option (the “Option”) to purchase [[SHARESGRANTED]] shares of common stock of the Company, no par value (the “Shares”), at the exercise price of $[[GRANTPRICE]] per Share (the “Exercise Price”). The Option is not intended to qualify as an incentive stock option under Section 422 of the Code.

2. Subject to the Plan. This Agreement is subject to and governed by the terms and provisions of the Vericel Corporation 2019 Omnibus Incentive Plan (the “Plan”), and, unless the context requires otherwise, terms used herein shall have the same meaning as in the Plan. In the event of a conflict between the provisions of the Plan and this Agreement, the Plan shall control.

3. Term of Option. Unless the Option terminates earlier pursuant to the provisions of this Agreement, the Option shall expire on the tenth anniversary of the Grant Date.

4. Vesting. Subject to the discretion of the Committee to accelerate the exercisability of the Option, the Option shall become vested and exercisable over a one year period following the grant date, in twelve (12) equal monthly installments, provided that the Participant is then providing services to the Company as a Director.

5. Exercise of Option

(a) Manner of Exercise. To the extent vested, the Option may be exercised, in whole or in part, by delivering written notice to the Company in such form as the Company may require from time to time. Such notice shall specify the number of Shares subject to the Option as to which the Option is being exercised, and shall be accompanied by full payment of the Exercise Price of such Shares in a manner permitted under the terms of Section 5.5 of the Plan**.** The Option may be exercised only in multiples of whole Shares and no fractional Shares shall be issued.

(b) Issuance of Shares. As soon as practicable following the exercise of the Option, payment of the Exercise Price for the Shares as to which the Option is exercised and compliance to the satisfaction of the Committee with all requirements under applicable laws or regulations in connection with such transfer and with the requirements hereof and of the Plan, the Company shall issue to the Participant the applicable number of Shares in the form of fully paid and nonassessable Shares. The determination of the Committee as to such compliance shall be final and binding on the Participant.

(c) Capitalization Adjustments. The number of Shares subject to the Option and the Exercise Price shall be equitably and appropriately adjusted, if applicable, as provided in Section 11.2 of the Plan.

6. Termination of Option.

(a) Termination of Service as a Board Member. Unless the Option has earlier terminated, the Option shall terminate in its entirety, regardless of whether the Option is vested, on the earlier of (i) twenty-four (24) months from the date that the Participant ceases to be a member of the Board of Directors or (ii) the original expiration date of the Option. Subject to the discretion of the Committee to permit continued vesting of the Option, if the Participant's services as a Director terminates for any reason other than due to the Participant's death or Disability prior to the satisfaction of the vesting conditions set forth in Paragraph 4 above, any portion of the Option that is not vested at the time the Participant ceases to be a Director shall immediately terminate and be of no further force or effect. Upon termination of the Participant's services as a Director due to the Participant's death or Disability, this Option shall become vested and exercisable in full. For purposes of this Award, "Disability" shall have the meaning set forth in Treas. Reg. Section 1.409A3(i)(4).

(b) Extension of Exercise Period. Notwithstanding any provisions of paragraph (a) of this Section to the contrary, if exercise of the Option following termination of service during the time period set forth in the applicable paragraph or sale during such period of the Shares acquired on exercise would violate any of the provisions of the federal securities laws (or any Company policy related thereto), the time period to exercise the Option shall be extended until the later of (i) forty-five (45) days after the date that the exercise of the Option or sale of the Shares acquired on exercise would not be a violation of the federal securities laws (or a related Company policy), or (ii) the end of the time period set forth in the applicable paragraph.

7. Change in Control.

(a) Effect on Option. In the event of a Change in Control, the Option shall (i) vest and become exercisable on the day prior to the date of the Change in Control if the Participant is then providing services to the Company or an Affiliate and (ii) terminate on the date of the Change in Control.

(b) Notwithstanding the foregoing, if on the date of the Change in Control the Fair Market Value of one Share is less than the Exercise Price, then the Option shall terminate as of the date of the Change in Control, except as otherwise determined by the Committee.

8. Miscellaneous.

(a) No Rights of Stockholder. The Participant shall not have any of the rights of a stockholder with respect to the Shares subject to this Option until such Shares have been issued to him or her upon the due exercise of the Option.

(b) Nontransferability of Option. Except to the extent and under such terms and conditions as determined by the Committee, the Option shall be nontransferable otherwise than by will or the laws of descent and distribution, and during the lifetime of the Participant, the Option may be exercised only by the Participant or, during the period the Participant is under a legal disability, by the Participant's guardian or legal representative. Notwithstanding the foregoing, the Participant may, by delivering written notice to the Company, in a form provided by or otherwise satisfactory to the Company, designate a third party who, in the event of the Participant's death, shall thereafter be entitled to exercise the Option.

(c) Severability. If any provision of this Agreement shall be held unlawful or otherwise invalid or unenforceable in whole or in part by a court of competent jurisdiction, such provision shall (i) be deemed limited to the extent that such court of competent jurisdiction deems it lawful, valid and/or enforceable and as so limited shall remain in full force and effect, and (ii) not affect any other provision of this Agreement or part thereof, each of which shall remain in full force and effect.

(d) Governing Law. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of Michigan, other than its conflict of laws principles.

(e) Headings. The headings in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

(f) Notices. All notices required or permitted under this Agreement shall be in writing and shall be sufficiently made or given if hand delivered or mailed by registered or certified mail, postage prepaid. Notice by mail shall be deemed delivered on the date on which it is postmarked.

Notices to the Company should be addressed to:

Vericel Corporation
64 Sidney Street
Cambridge, MA 02139
Attention: Chief Financial Officer

Notice to the Participant should be addressed to the Participant at the Participant's address as it appears on the Company's records.

The Company or the Participant may by writing to the other party, designate a different address for notices. If the receiving party consents in advance, notice may be transmitted and received via telecopy or via such other electronic transmission mechanism as may be available to the parties. Such notices shall be deemed delivered when received.

(g) No Obligation to Continue as a Director. Neither the Plan nor this Option confers upon the Participant any rights with respect to continuance as a Director.

(g) Agreement Not a Contract. This Agreement (and the grant of the Option) is not an employment or service contract, and nothing in the Option shall be deemed to create in any way whatsoever any obligation on Participant's part to continue his or her service, or of the Company or an Affiliate to continue Participant's service.

(h) Entire Agreement; Modification. The Agreement contains the entire agreement between the parties with respect to the subject matter contained herein and may not be modified, except as provided in the Plan or in a written document signed by each of the parties hereto, and may be rescinded only by a written agreement signed by both parties.

(i) Data Privacy Consent. In order to administer the Plan and this Agreement and to implement or structure future equity grants, the Company, its subsidiaries and affiliates and certain agents thereof (together, the "Relevant Companies") may process any and all personal or professional data, including but not limited to Social Security or other identification number, home address and telephone number, date of birth and other information that is necessary or desirable for the administration of the Plan and/or this Agreement (the "Relevant Information"). By entering into this Agreement, the Participant (i) authorizes the Company to collect, process, register and transfer to the Relevant Companies all Relevant Information; (ii) waives any privacy rights the Participant may have with respect to the Relevant Information; (iii) authorizes the Relevant Companies to store and transmit such information in electronic form; and (iv) authorizes the transfer of the Relevant Information to any jurisdiction in which the Relevant Companies consider appropriate. The Participant shall have access to, and the right to change, the Relevant Information. Relevant Information will only be used in accordance with applicable law.

IN WITNESS WHEREOF, the parties have executed the Agreement as of the date first above written.

VERICEL CORPORATION

By: _____

Title: President and CEO

PARTICIPANT

_____

[_____

NOTICE OF EXERCISE OF
STOCK OPTION

TO: [_____]

Pursuant to the Stock Option Agreement dated _____ __, 20__, under the Vericel Corporation 2019 Omnibus Incentive Plan, the undersigned exercises the right to purchase _____ shares of the common stock of Vericel Corporation and encloses: (i) payment of the purchase price in full; and (ii) executed copies of any additional documents and agreements required by the Stock Option Agreement. All shares are to be issued to the undersigned in the name as printed below and delivered to the address shown.

Dated:	Name Address Signature: Social Security Number:

Please print name as it is to appear on the stock certificate:

Vericel Corporation 2019 Omnibus Incentive Plan
Restricted Stock Unit Award Agreement for Company Employees

Name of Participant: [[FIRSTNAME]] [[LASTNAME]]

No. of Restricted Stock Units: [[SHARESGRANTED]]

Grant Date: [[GRANTDATE]]

Vesting Start Date: [[VESTINGSTARTDATE]]

Pursuant to the Vericel Corporation 2019 Omnibus Incentive Plan as amended through the date hereof (the "Plan"), Vericel Corporation (the "Company") hereby grants an award of the number of Restricted Stock Units listed above (an "Award") to the Participant named above. Each Restricted Stock Unit shall relate to one share of common stock, no par value per share (each, a "Share") of the Company.

1. Restrictions on Transfer of Award. This Award may not be sold, transferred, pledged, assigned or otherwise encumbered or disposed of by the Participant, and any Shares issuable with respect to the Award may not be sold, transferred, pledged, assigned or otherwise encumbered or disposed of until (i) the Restricted Stock Units have vested as provided in Paragraph 2 of this Agreement and (ii) Shares have been issued to the Participant in accordance with the terms of the Plan and this Agreement.

2. Vesting of Restricted Stock Units. The restrictions and conditions of Paragraph 1 of this Agreement shall lapse as to 25% of the number of Restricted Stock Units on each of the first four anniversaries of the Vesting Start Date (each such date, a "Vesting Date"), provided that the Participant remains an employee of the Company or an Affiliate on the relevant Vesting Date. Subject to the terms of the Plan, the Committee may at any time accelerate the vesting schedule specified in this Paragraph 2.

3. Termination of Employment. Subject to the discretion of the Committee to permit continued vesting of the Restricted Stock Units, if the Participant's employment with the Company and its Affiliates terminates for any reason other than the Participant's death or Disability prior to the satisfaction of the vesting conditions set forth in Paragraph 2 above, any Restricted Stock Units that have not vested as of such date shall automatically and without notice terminate and be forfeited, and neither the Participant nor any of his or her successors, heirs, assigns, or personal representatives will thereafter have any further rights or interests in such unvested Restricted Stock Units. Upon termination of the Participant's employment due to the Participant's death or Disability, the restrictions and conditions of Paragraph 1 of this Agreement shall lapse as to 100% of the number of Restricted Stock Units. For purposes of this Award, "Disability" shall have the meaning set forth in Treas. Reg. Section 1.409A3(i)(4).

4. Issuance of Shares. As soon as practicable following each Vesting Date (but in no event later than two and one-half months after the end of the year in which the Vesting Date occurs), the Company shall issue to the Participant the number of Shares equal to the aggregate

number of Restricted Stock Units that have vested pursuant to Paragraph 2 of this Agreement on such date and the Participant shall thereafter have all the rights of a stockholder of the Company with respect to such Shares.

5. Change in Control.

(a) Effect on Award. In the event of a Change in Control, to the extent the successor company (or a subsidiary or parent thereof) does not assume or substitute for the Award on substantially the same terms and conditions, the Award shall (i) vest and become nonforfeitable on the day prior to the date of the Change in Control if the Participant is then employed by the Company or an Affiliate and (ii) terminate on the date of the Change in Control. In the event of a Change in Control, to the extent the successor company (or a subsidiary or parent thereof) assumes or substitutes for the Award on substantially the same terms and conditions (which may include providing for settlement in the common stock of the successor company (or a subsidiary or parent thereof)), if within twelve (12) months following the date of the Change in Control the Participant's employment is terminated by the Company or an Affiliate (or the successor company or a subsidiary or parent thereof) without Cause or by the Participant for Good Reason, the Award shall become fully vested and nonforfeitable on the date the Participant's employment is terminated.

(b) Cause. For purposes of this Agreement, except as otherwise provided in paragraph (d) of this Section, "Cause" shall mean a determination by the Committee that the Participant has (i) materially breached his or her employment or service contract with the Company, (ii) been engaged in disloyalty to the Company or an Affiliate, including, without limitation, fraud, embezzlement, theft, commission of a felony or proven dishonesty in the course of his or her employment or service, which will materially harm the interests of the Company or the Affiliate, (iii) disclosed trade secrets or confidential information of the Company to persons not entitled to receive such information, (iv) breached any written noncompetition or nonsolicitation agreement between the Participant and the Company or an Affiliate in a manner which the Committee determines will cause material harm to the interests of the Company or an Affiliate, or (v) engaged in such other behavior materially detrimental to the interests of the Company, in each case as the Committee determines. The Committee's determination of the reason for termination of the Participant's employment shall be conclusive and binding on the Participant and his or her representatives or legatees.

(c) Good Reason. For purposes of this Agreement, except as otherwise provided in paragraph (d) of this Section, "Good Reason" shall mean (i) a reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of more than 10% in Participant's rate of annual base salary as in effect immediately prior to such Change in Control; (ii) a reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of more than 10% of the Participant's individual annual target or bonus opportunity, except under circumstances where the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) implement changes to the bonus structure of similarly situated employees, including but not limited to changes to the bonus structure designed to integrate the Company's or Affiliate's personnel with other personnel of the successor company (or an subsidiary or parent thereof); (iii) a significant and substantial

reduction by the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) of the Participant's responsibilities and authority, as compared with the Participant's responsibilities and authority in effect immediately preceding the Change in Control; or (iv) any requirement of the Company or an Affiliate or a successor company (or a subsidiary or parent thereof) that Participant be based anywhere more than fifty (50) miles from Participant's primary office location at the time of the Change in Control; provided the Participant provides at least ninety (90) days' notice to the Company following the initial occurrence of any such event and the Company fails to cure such event within thirty (30) days thereafter.

(d) Other Agreement or Plan. The provisions of this Section (including the definitions of Cause and Good Reason), shall be superseded by the specific provisions, if any, of a written employment or severance agreement between the Participant and the Company or a severance plan of the Company covering the Participant, including a change in control severance agreement or plan, to the extent such a provision provides a greater benefit to the Participant.

6. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Agreement shall be subject to and governed by all the terms and conditions of the Plan, including the powers of the Committee set forth in Section 4.2 of the Plan. Capitalized terms in this Agreement shall have the meaning specified in the Plan, unless a different meaning is specified herein.

7. Tax Withholding. The Participant shall, not later than the date as of which the receipt of this Award becomes a taxable event for Federal income tax purposes, pay to the Company or make arrangements satisfactory to the Committee for payment of any Federal, state, and local taxes required by law to be withheld on account of such taxable event. Unless otherwise determined by the Committee, the Company shall cause the required tax withholding obligation to be satisfied by withholding from Shares to be issued to the Participant a number of Shares with an aggregate Fair Market Value that would satisfy the withholding amount due.

8. Section 409A of the Code. This Agreement shall be interpreted in such a manner that all provisions relating to the settlement of the Award are exempt from the requirements of Section 409A of the Code as "short-term deferrals" as described in Section 409A of the Code.

9. Severability. If any provision of this Agreement shall be held unlawful or otherwise invalid or unenforceable in whole or in part by a court of competent jurisdiction, such provision shall (i) be deemed limited to the extent that such court of competent jurisdiction deems it lawful, valid and/or enforceable and as so limited shall remain in full force and effect, and (ii) not affect any other provision of this Agreement or part thereof, each of which shall remain in full force and effect.

10. Governing Law. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of Michigan, other than its conflict of laws principles.

11. Headings. The headings in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

12. Notices. All notices required or permitted under this Agreement shall be in writing and shall be sufficiently made or given if hand delivered or mailed by registered or certified mail, postage prepaid. Notice by mail shall be deemed delivered on the date on which it is postmarked.

Notices to the Company should be addressed to:

Vericel Corporation
64 Sidney Street
Cambridge, MA 02139
Attention: Chief Financial Officer

Notice to the Participant should be addressed to the Participant at the Participant's address as it appears on the Company's records.

The Company or the Participant may by writing to the other party, designate a different address for notices. If the receiving party consents in advance, notice may be transmitted and received via telecopy or via such other electronic transmission mechanism as may be available to the parties. Such notices shall be deemed delivered when received.

13. No Obligation to Continue Employment. Neither the Company nor any Affiliate is obligated by or as a result of the Plan or this Agreement to continue the Participant in employment and neither the Plan nor this Agreement shall interfere in any way with the right of the Company or any Affiliate to terminate the employment of the Participant at any time.

14. Entire Agreement; Modification. The Agreement contains the entire agreement between the parties with respect to the subject matter contained herein and may not be modified, except as provided in the Plan or in a written document signed by each of the parties hereto, and may be rescinded only by a written agreement signed by both parties.

15. Data Privacy Consent. In order to administer the Plan and this Agreement and to implement or structure future equity grants, the Company, its subsidiaries and affiliates and certain agents thereof (together, the "Relevant Companies") may process any and all personal or professional data, including but not limited to Social Security or other identification number, home address and telephone number, date of birth and other information that is necessary or desirable for the administration of the Plan and/or this Agreement (the "Relevant Information"). By entering into this Agreement, the Participant (i) authorizes the Company to collect, process, register and transfer to the Relevant Companies all Relevant Information; (ii) waives any privacy rights the Participant may have with respect to the Relevant Information; (iii) authorizes the Relevant Companies to store and transmit such information in electronic form; and (iv) authorizes the transfer of the Relevant Information to any jurisdiction in which the Relevant Companies consider appropriate. The Participant shall have access to, and the right to change, the Relevant Information. Relevant Information will only be used in accordance with applicable law.

Vericel Corporation 2019 Omnibus Incentive Plan

Restricted Stock Unit Award Agreement for Non-Employee Directors

Name of Participant: __

No. of Restricted Stock Units: __

Grant Date: __

Vesting Start Date: __

Pursuant to the Vericel Corporation 2019 Omnibus Incentive Plan as amended through the date hereof (the "Plan"), Vericel Corporation (the "Company") hereby grants an award of the number of Restricted Stock Units listed above (an "Award") to the Participant named above. Each Restricted Stock Unit shall relate to one share of common stock, no par value per share (each, a "Share") of the Company.

1. Restrictions on Transfer of Award. This Award may not be sold, transferred, pledged, assigned or otherwise encumbered or disposed of by the Participant, and any Shares issuable with respect to the Award may not be sold, transferred, pledged, assigned or otherwise encumbered or disposed of until (i) the Restricted Stock Units have vested as provided in Paragraph 2 of this Agreement and (ii) Shares have been issued to the Participant in accordance with the terms of the Plan and this Agreement.

2. Vesting of Restricted Stock Units. The restrictions and conditions of Paragraph 1 of this Agreement shall lapse as to 100% of the number of Restricted Stock Units on the earlier of the first anniversary of the Vesting Start Date or the date of the first Annual Meeting of Stockholders following the Vesting Start Date (such date, the "Vesting Date"), provided that the Participant is providing services to the Company as a Director on the relevant Vesting Date. Subject to the terms of the Plan, the Committee may at any time accelerate the vesting schedule specified in this Paragraph 2.

3. Termination of Service. Subject to the discretion of the Committee to permit continued vesting of the Restricted Stock Units, if the Participant's services as a Director terminates for any reason other than due to the Participant's death or Disability prior to the satisfaction of the vesting conditions set forth in Paragraph 2 above, any Restricted Stock Units that have not vested as of such date shall automatically and without notice terminate and be forfeited, and neither the Participant nor any of his or her successors, heirs, assigns, or personal representatives will thereafter have any further rights or interests in such unvested Restricted Stock Units. Upon termination of the Participant's services as a Director due to the Participant's death or Disability, the restrictions and conditions of Paragraph 1 of this Agreement shall lapse as to 100% of the number of Restricted Stock Units. For purposes of this Award, "Disability" shall have the meaning set forth in Treas. Reg. Section 1.409A3(i)(4).

4. Issuance of Shares. As soon as practicable following each Vesting Date (but in no event later than two and one-half months after the end of the year in which the Vesting Date occurs), the Company shall issue to the Participant the number of Shares equal to the aggregate number of Restricted Stock Units that have vested pursuant to Paragraph 2 of this Agreement on such date and the Participant shall thereafter have all the rights of a stockholder of the Company with respect to such Shares.

5. Change in Control. In the event of a Change in Control, the Award shall (i) become fully vested and nonforfeitable on the day prior to the date of the Change in Control if the Participant is then providing services to the Company as a Director and (ii) terminate on the date of the Change in Control.

6. Incorporation of Plan. Notwithstanding anything herein to the contrary, this Agreement shall be subject to and governed by all the terms and conditions of the Plan, including the powers of the Committee set forth in Section 4.2 of the Plan. Capitalized terms in this Agreement shall have the meaning specified in the Plan, unless a different meaning is specified herein.

7. Section 409A of the Code. This Agreement shall be interpreted in such a manner that all provisions relating to the settlement of the Award are exempt from the requirements of Section 409A of the Code as "short-term deferrals" as described in Section 409A of the Code.

8. Severability. If any provision of this Agreement shall be held unlawful or otherwise invalid or unenforceable in whole or in part by a court of competent jurisdiction, such provision shall (i) be deemed limited to the extent that such court of competent jurisdiction deems it lawful, valid and/or enforceable and as so limited shall remain in full force and effect, and (ii) not affect any other provision of this Agreement or part thereof, each of which shall remain in full force and effect.

9. Governing Law. This Agreement shall be governed by, and interpreted in accordance with, the laws of the State of Michigan, other than its conflict of laws principles.

10. Headings. The headings in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

11. Notices. All notices required or permitted under this Agreement shall be in writing and shall be sufficiently made or given if hand delivered or mailed by registered or certified mail, postage prepaid. Notice by mail shall be deemed delivered on the date on which it is postmarked.

Notices to the Company should be addressed to:

Vericel Corporation
64 Sidney Street
Cambridge, MA 02139
Attention: Chief Financial Officer

Notice to the Participant should be addressed to the Participant at the Participant's address as it appears on the Company's records.

The Company or the Participant may by writing to the other party, designate a different address for notices. If the receiving party consents in advance, notice may be transmitted and received via telecopy or via such other electronic transmission mechanism as may be available to the parties. Such notices shall be deemed delivered when received.

12. No Obligation to Continue as a Director. Neither the Plan nor this Award confers upon the Participant any rights with respect to continuance as a Director.

13. Entire Agreement; Modification. The Agreement contains the entire agreement between the parties with respect to the subject matter contained herein and may not be modified, except as provided in the Plan or in a written document signed by each of the parties hereto, and may be rescinded only by a written agreement signed by both parties.

14. Data Privacy Consent. In order to administer the Plan and this Agreement and to implement or structure future equity grants, the Company, its subsidiaries and affiliates and certain agents thereof (together, the "Relevant Companies") may process any and all personal or professional data, including but not limited to Social Security or other identification number, home address and telephone number, date of birth and other information that is necessary or desirable for the administration of the Plan and/or this Agreement (the "Relevant Information"). By entering into this Agreement, the Participant (i) authorizes the Company to collect, process, register and transfer to the Relevant Companies all Relevant Information; (ii) waives any privacy rights the Participant may have with respect to the Relevant Information; (iii) authorizes the Relevant Companies to store and transmit such information in electronic form; and (iv) authorizes the transfer of the Relevant Information to any jurisdiction in which the Relevant Companies consider appropriate. The Participant shall have access to, and the right to change, the Relevant Information. Relevant Information will only be used in accordance with applicable law.

IN WITNESS WHEREOF, the parties have executed the Agreement as of the date first above written.

VERICEL CORPORATION

By: _____

Title: President and CEO

PARTICIPANT

_____

[_____]

ACTIVE/98683109.4
ACTIVE/106709081.2

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is entered into between Vericel Corporation, a Michigan corporation (the "Company") and Sean C. Flynn (the "Executive"), effective as of November 4, 2019 (the "Effective Date").

WHEREAS, the Company and the Executive previously entered into that certain offer letter dated as of October 8, 2019 (the "Prior Agreement"), and both parties desire to supersede and replace the terms set forth in the Prior Agreement with the terms set forth herein; and

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Position and Duties. The Executive's employment with the Company will commence on the Effective Date. The Executive shall serve as Vice President and General Counsel of the Company and shall have such powers and duties as may from time to time be prescribed by the Chief Executive Officer of the Company (the "CEO") or other authorized executive. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may engage in religious, charitable or other community activities as long as such services and activities are disclosed to the CEO and do not materially interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. The Executive's annual base salary shall be $340,000. The Executive's base salary may be redetermined by the Company's Compensation Committee, after consultation with the CEO. The base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in a manner that is consistent with the Company's usual payroll practices for senior executives.

(b) Incentive Compensation. The Executive shall be eligible to receive cash incentive compensation as determined by the Company's Compensation Committee from time to time. The Executive's target annual incentive compensation shall be Forty Percent (40%) of his Base Salary, and the actual bonus amount shall be determined by the Company's Compensation Committee. The target annual incentive compensation in effect at any given time is referred to herein as "Target Bonus." The Target Bonus may be redetermined by the Company's Compensation Committee, after consultation with the CEO. To be eligible for incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid.

(c) Equity Compensation. The Executive acknowledges and agrees that, in connection with the commencement of his employment, he will be granted an initial equity grant in the form of an option to purchase 150,000 shares of the Company's common stock, which shall vest and be subject to the terms and conditions of the underlying equity award agreement and the Company's 2019 Omnibus Incentive Plan, as may be amended or restated from time to time (collectively, the "Equity Documents"). From time to time and at the discretion of the Company's Compensation Committee, the Company may grant to the Executive equity compensation, including options to purchase shares of the Company's common stock at an exercise price equal to the fair market value of the Company's common stock on the effective date of grant.

(d) Tax Reporting. The Company will determine in its reasonable, good faith judgment what, if any, of the Executive's reimbursed travel and lodging and relocation expenses are for nondeductible expenses in accordance with applicable law and will comply with associated withholding and tax reporting obligations.

(e) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable business expenses incurred by him in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(f) Customary Fringe Benefits. The Executive shall be entitled to such fringe benefits as the Company customarily makes available to the Company's senior executives (collectively, "Fringe Benefits"). The Fringe Benefits shall include sick leave, health insurance coverage, and 401(k) plan participation, in accordance with the terms and provisions of such plans, policies and arrangements as adopted by the Company from time to time during the term of this Agreement. The Company reserves the right to change the Fringe Benefits on a prospective basis, at any time, effective upon delivery of written notice to Executive. Executive shall not be entitled to receive payments in lieu of Fringe Benefits, other than for earned and accumulated but unused vacation at the time the employment relationship terminates.

(g) Paid Time Off. The Executive is entitled to accrue 16.67 hours per month, equaling twenty-five (25) days per year, of paid time off (including statutory sick leave), pro-rated for any partial calendar year during the term of this Agreement, in accordance with the Company's Paid Time Off policy ("Paid Time Off"). Executive also shall be entitled to such paid holidays as are established by the Company for all regular full-time employees.

3. Termination. The Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to

whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq*. and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of his duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of any felony or a misdemeanor involving moral turpitude, deceit, dishonesty or fraud, or any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if he were retained in his position; (iii) continued non-performance by the Executive of his duties hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than 15 days following written notice from the CEO (or the CEO's designee); (iv) a breach by the Executive of any of the provisions contained in Section 7 of this Agreement or the Restrictive Covenant Agreement (as defined below); (v) a material violation by the Executive of the Company's written employment policies, or (vi) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation. Any determination of Cause by the Company shall be conclusive.

(d) Termination by the Company without Cause. The Company may terminate the Executive's employment hereunder at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. The Executive may terminate his employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good

Reason Process" (hereinafter defined) following the occurrence of any of the following events: (i) a material diminution in the Executive's responsibilities, authority or duties; (ii) a material diminution in the Executive's Base Salary except for across-the-board salary reductions based on the Company's financial performance similarly affecting all or substantially all senior management employees of the Company; (iii) the material breach of this Agreement by the Company; or (iv) any change in the location of Executive's locus of employment that is more than fifty (50) miles from the current headquarters of the Company. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 30 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within 30 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b), by the Company for Cause under Section 3(c) or by the Company without Cause under Section 3(d), the date on which Notice of Termination is given unless another date is specified therein; (iii) if the Executive's employment is terminated by the Executive under Section 3(e) other than for Good Reason, 30 days after the date on which a Notice of Termination is given, and (iv) if the Executive's employment is terminated by the Executive under Section 3(e) for Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement.

4. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company terminates for any reason, the Company shall pay or provide to the Executive (or to his authorized representative or estate) any earned but unpaid Base Salary, unpaid expense reimbursements, accrued but unused Paid Time Off all through the Date of Termination, and any vested benefits the Executive may have under any employee benefit plan of the Company (the "Accrued Benefit") on or before the time required by law but in no event more than 30 days after the Executive's Date of Termination.

(b) Termination by the Company without Cause or by the Executive for Good Reason. If the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates his employment for Good Reason as provided in Section 3(e), then the Company shall, through the Date of Termination, pay the Executive his Accrued Benefit. In addition, subject to (i) the Executive signing a separation agreement in a form and manner satisfactory to the Company which includes a general release of claims in favor of the Company and related persons and entities, a reaffirmation of all of the Executive's Continuing Obligations (as defined below), and, in the Company's sole discretion, a one-year post-employment noncompetition agreement, and shall provide that if the Executive breaches any of the Continuing Obligations, all payments of the Severance Amount shall immediately cease (the "Release") and (ii) such Release becoming irrevocable within the time period set forth in such Release, but in no event later than 60 days following the Date of Termination, which shall include a seven (7) business day revocation period:

(i) the Company shall pay the Executive an amount equal to twelve (12) months of the Executive's Base Salary (the "Severance Amount"); provided in the event the Executive is entitled to any payments pursuant to the Restrictive Covenant Agreement, the Severance Amount received in any calendar year will be reduced by the amount the Executive is paid in the same such calendar year pursuant to the Restrictive Covenant Agreement (the "Restrictive Covenant Agreement Setoff");

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects continuation coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA"), then the Company shall pay to the Executive a monthly cash payment for twelve (12) months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company. The Executive may continue to participate in COBRA benefits following the expiration of the twelve (12) months, at his sole cost, provided that he remains eligible for such participation; and

(iii) the amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over twelve (12) months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

5. Change in Control Payment. The provisions of this Section 5 set forth certain terms of an agreement reached between the Executive and the Company regarding the

Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change in Control (the "Change in Control Period"). These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change in Control.

(a) Change in Control. If the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates his employment for Good Reason as provided in Section 3(e), and the Date of Termination occurs within the Change in Control Period, then, subject to the signing of the Release by the Executive and such Release becoming irrevocable within the period set forth in such Release, but in no event later than 60 days following the Date of Termination:

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to one (1) multiplied by the sum of (A) the Executive's then-effective Base Salary, and (B) the Executive's Target Bonus for the year during which the Date of Termination occurs (the "Change in Control Payment"); provided the Change in Control Payment shall be reduced by the amount of the Restrictive Covenant Agreement Setoff, if applicable, paid or to be paid in the same calendar year;

(ii) the Company shall pay a prorated annual performance bonus (the "Prorated Annual Bonus") equal to (x) the Executive's Target Bonus for the year during which the Date of Termination occurs multiplied by (y) a fraction, the numerator of which is the number of days in the fiscal year in which the Executive was employed through the Date of Termination and the denominator of which is 365, provided that the Prorated Annual Bonus shall be less the amount of any annual performance bonus, or advance thereof, previously paid for the period associated with the Prorated Annual Bonus;

(iii) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all time-based stock options and other stock-based awards held by the Executive shall immediately accelerate and become fully exercisable or nonforfeitable as of the Date of Termination; and

(iv) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for twelve (12) months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company. The Executive may continue to participate in COBRA

benefits following the expiration of the twelve (12) months, at his sole cost, provided that he remains eligible for such participation.

(v) The amounts payable under this Section 5(a) shall be paid or commence to be paid within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such payment shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Code and the applicable regulations thereunder (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

(A) If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

(B) If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the Severance Payments shall be reduced (but not below zero) to the extent necessary so that the sum of all Severance Payments shall not exceed the Threshold Amount. In such event, the Severance Payments shall be reduced in the following order: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity-based payments and acceleration; and (4) non-cash forms of benefits. To the extent any payment is to be made over time (e.g., in installments, etc.), then the payments shall be reduced in reverse chronological order.

(ii) For the purposes of this Section 5(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 5(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 5(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(b) Definitions. For purposes of this Section 5, the following terms shall have the following meanings:

"Change in Control" shall mean any of the following:

(i) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company representing 50 percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(ii) the date a majority of the members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board before the date of the appointment or election; or

(iii) the consummation of (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than 50 percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (B) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

Notwithstanding the foregoing, a "Change in Control" shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Voting Securities outstanding, increases the proportionate number of Voting Securities beneficially owned by any person to 50 percent or more of the combined voting power of all of the then outstanding Voting Securities; provided, however, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns 50 percent or more of the combined voting power of all of the then outstanding Voting Securities, then a "Change in Control" shall be deemed to have occurred for purposes of the foregoing clause (i).

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement or otherwise on account of the Executive's separation from service would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall

be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A1(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Confidential Information, Noncompetition and Cooperation.

(a) Restrictive Covenant Agreement. The terms of the Employee Confidentiality, Assignment and Noncompetition Agreement between the Executive and the Company dated October 9, 2019 and attached hereto as Exhibit A (the "Restrictive Covenant Agreement") continue to be in full force and effect; provided the noncompetition provisions in the Restrictive Covenant Agreement shall only be enforceable to the extent that such enforcement does not restrict the Executive's ability to practice law after the Date of Termination. For purposes of this Agreement, the obligations in this Section 7 and those that arise in the Restrictive Covenant Agreement and any other agreement relating to confidentiality, assignment of inventions, or other restrictive covenants shall collectively be referred to as the "Continuing Obligations."

(b) Third-Party Agreements and Rights. The Executive hereby confirms that the Executive is not bound by the terms of any agreement with any previous employer or other party which restricts in any way the Executive's use or disclosure of information or the Executive's engagement in any business. The Executive represents to the Company that the Executive's execution of this Agreement, the Executive's employment with the Company and the performance of the Executive's proposed duties for the Company will not violate any obligations the Executive may have to any such previous employer or other party. In the Executive's work for the Company, the Executive will not disclose or make use of any information in violation of any agreements with or rights of any such previous employer or other party, and the Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

(c) Litigation and Regulatory Cooperation. During and after the Executive's employment, the Executive shall cooperate fully with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while the Executive

was employed by the Company. The Executive's full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after the Executive's employment, the Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while the Executive was employed by the Company. The Company shall reimburse the Executive for any reasonable outofpocket expenses incurred in connection with the Executive's performance of obligations pursuant to this Section 7(c).

(d) Injunction. The Executive agrees that it would be difficult to measure any damages caused to the Company which might result from any breach by the Executive of the promises set forth in this Section 7, and that in any event money damages would be an inadequate remedy for any such breach. Accordingly, subject to Section 8 of this Agreement, the Executive agrees that if the Executive breaches, or proposes to breach, any portion of this Agreement, the Company shall be entitled, in addition to all other remedies that it may have, to an injunction or other appropriate equitable relief to restrain any such breach without showing or proving any actual damage to the Company.

(e) Protected Disclosure. The Executive understands that nothing contained in this Agreement limits the Executive's ability to communicate with any federal, state or local governmental agency or commission, including to provide documents or other information, without notice to the Company.

8. Consent to Jurisdiction. The parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

9. Integration. This Agreement, including the Restrictive Covenant Agreement, constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter, including without limitation, the Prior Agreement; *provided* that the Equity Documents shall remain in full force and effect.

10. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

11. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after his termination of employment but prior to the completion by the Company of all payments due him under this Agreement, the Company shall continue such payments to the Executive's beneficiary

designated in writing to the Company prior to his death (or to his estate, if the Executive fails to make such designation).

12. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

13. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

14. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

15. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

16. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

17. Governing Law. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

18. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

19. Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a material breach of this Agreement.

20. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the Effective Date.

VERICEL CORPORATION

/s/ Dominick C. Colangelo
By: Dominick C. Colangelo
Its: President and Chief Executive Officer

EXECUTIVE

/s/ Sean C. Flynn
Sean C. Flynn

Exhibit A

Employee Confidentiality, Assignment and Noncompetition Agreement

In consideration and as a condition of the commencement of my employment by Vericel Corporation (including its subsidiaries and other affiliates and its and their successors and assigns, the "Company"), I enter into this Employee Confidentiality, Assignment and Noncompetition Agreement (the "Agreement") and agree as follows:

1. Proprietary Information. I agree that all information, whether or not in writing, concerning the Company's business, technology, business relationships or financial affairs that the Company has not released to the general public (collectively, "Proprietary Information") and all tangible embodiments thereof are and will be the exclusive property of the Company. By way of illustration, Proprietary Information may include information or material that has not been made generally available to the public, such as: (a) *corporate information*, including plans, strategies, methods, policies, resolutions, negotiations or litigation; (b) *marketing information*, including strategies, methods, customer or business partner identities or other information about customers, business partners, prospect identities or other information about prospects, or market analyses or projections; (c) *financial information*, including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; (d) *operational and scientific information*, including plans, specifications, manuals, forms, templates, software, pre-clinical and clinical testing data and strategies, research and development strategies, designs, methods, procedures, formulae, data, reports, discoveries, inventions, improvements, concepts, ideas, and other Developments (as defined below), know-how and trade secrets; and (e) *personnel information*, including personnel lists, reporting or organizational structure, resumes, personnel data, performance evaluations and termination arrangements or documents. Proprietary Information also includes information received in confidence by the Company from its customers, suppliers, business partners or other third parties.

2. Recognition of Company's Rights. I will not, at any time, without the Company's prior written permission, either during or after my employment, disclose any Proprietary Information to anyone outside of the Company, or use or permit to be used any Proprietary Information for any purpose other than the performance of my duties as an employee of the Company. I will cooperate with the Company and use my best efforts to prevent the unauthorized disclosure of all Proprietary Information. I will deliver to the Company all copies and other tangible embodiments of Proprietary Information in my possession or control upon the earlier of a request by the Company or termination of my employment.

3. Rights of Others. I understand that the Company is now and may hereafter be subject to nondisclosure or confidentiality agreements with third persons that require the Company to protect or refrain from use or disclosure of proprietary information. I agree to be bound by the terms of such agreements in the event I have access to such proprietary information. I understand that the Company strictly prohibits me from using or disclosing confidential or proprietary information belonging to any other person or entity (including any employer or former employer), in connection with my employment. In addition, I agree not to bring any confidential information belonging to any other person or entity onto Company premises or into Company workspaces.

4. Commitment to Company; Avoidance of Conflict of Interest. While an employee of the Company, I will devote my full-time efforts to the Company's business and I will not, directly or indirectly, engage in any other business activity, except as expressly authorized in writing and in advance by a duly authorized representative of the Company. I will advise an authorized officer of the Company or his or her designee at such time as any activity of either the Company or another business presents me with a conflict of interest or the appearance of a conflict of interest as an employee of the Company. I will take whatever action is requested of me by the Company to resolve any conflict or appearance of conflict which it finds to exist.

5. Developments. I will make full and prompt disclosure to the Company of all inventions, discoveries, designs, developments, methods, modifications, improvements, processes, algorithms, data, databases, computer programs, research, formulae, techniques, trade secrets, graphics or images, and audio or visual works and other works of authorship, and other intellectual property, including works-in-process (collectively "Developments") whether or not patentable or copyrightable, that are created, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment. I acknowledge that all work performed by me is on a "work for hire" basis, and I hereby do assign and transfer and, to the extent any such

assignment cannot be made at present, will assign and transfer, to the Company and its successors and assigns all my right, title and interest in and to all Developments that (a) relate to the business of the Company or any customer of, supplier to or business partner of the Company or any of the products or services being researched, developed, manufactured or sold by the Company or which may be used with such products or services; or (b) result from tasks assigned to me by the Company; or (c) result from the use of premises or personal property (whether tangible or intangible) owned, leased or contracted for by the Company ("Company-Related Developments"), and all related patents, patent applications, trademarks and trademark applications, copyrights and copyright applications, *sui generis* database rights and other intellectual property rights in all countries and territories worldwide and under any international conventions ("Intellectual Property Rights").

To preclude any possible uncertainty, if there are any Developments that I have, alone or jointly with others, conceived, developed or reduced to practice prior to the commencement of my employment with the Company that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement ("Prior Inventions"), I have set forth on Exhibit A attached hereto a complete list of those Prior Inventions. If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I understand that I am not to list such Prior Inventions in Exhibit A but am only to disclose a cursory name for each such invention, a listing of the party(ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. If there are any patents or patent applications in which I am named as an inventor, other than those that have been assigned to the Company ("Other Patent Rights"), I have also listed those Other Patent Rights on Exhibit A. If no such disclosure is attached, I represent that there are no Prior Inventions or Other Patent Rights. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine, research or development program, or other work done for the Company, I hereby grant to the Company a nonexclusive, royalty-free, fully paid-up, irrevocable, worldwide license (with the full right to sublicense through multiple tiers) to make, have made, modify, use, sell, offer for sale and import such Prior Invention. Notwithstanding the foregoing, I will not incorporate, or permit to be incorporated, Prior Inventions in any Company-Related Development without the Company's prior written consent.

This Agreement does not obligate me to assign to the Company any Development that, in the sole judgment of the Company, reasonably exercised, is developed entirely on my own time and does not relate to the business efforts or research and development efforts in which, during the period of my employment, the Company actually is engaged or reasonably would be engaged, and does not result from the use of premises or equipment owned or leased by the Company. However, I will also promptly disclose to the Company any such Developments for the purpose of determining whether they qualify for such exclusion. I understand that to the extent this Agreement is required to be construed in accordance with the laws of any state which precludes a requirement in an employee agreement to assign certain classes of inventions made by an employee, this paragraph 5 will be interpreted not to apply to any invention that a court rules and/or the Company agrees falls within such classes. I also hereby waive all claims to any moral rights or other special rights that I may have or accrue in any Company-Related Developments.

6. Documents and Other Materials. I will keep and maintain adequate and current records of all Proprietary Information and Company-Related Developments developed by me during my employment, which records will be available to and remain the sole property of the Company at all times.

All files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, whether created by me or others, which come into my custody or possession, are the exclusive property of the Company to be used by me only in the performance of my duties for the Company. Any property situated on the Company's premises and owned by the Company, including without limitation computers, disks and other storage media, filing cabinets or other work areas, is subject to inspection by the Company at any time with or without notice. In the event of the termination of my employment for any reason, I will deliver to the Company all Company property and equipment in my possession, custody or control, including all files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, and other materials of any nature pertaining to the Proprietary

Information of the Company and to my work, and will not take or keep in my possession any of the foregoing or any copies.

7. Enforcement of Intellectual Property Rights. I will cooperate fully with the Company, both during and after my employment with the Company, with respect to the procurement, maintenance and enforcement of Intellectual Property Rights in Company-Related Developments. I will sign, both during and after my employment, all papers, including without limitation copyright applications, patent applications, declarations, oaths, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development or Intellectual Property Rights therein. If the Company is unable, after reasonable effort, to secure my signature on any such papers, I hereby irrevocably designate and appoint each officer of the Company as my agent and attorney-in-fact to execute any such papers on my behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development, including any Intellectual Property Rights therein.

8. Nonsolicitation and Noncompetition.

In order to protect the Company's Proprietary Information and goodwill, during my employment and for a period of:
one (1) year following the date of the cessation of my employment with the Company (the "Last Date of Employment"), or (ii) two (2) years following the Last Date of Employment if I breach my fiduciary duty to the Company or if I have unlawfully taken, physically or electronically, property belonging to the Company (in either case the "Restricted Period"):

(a) I shall not, directly or indirectly, in any manner, other than for the benefit of the Company, solicit or transact any business with any of the customers of the Company or any of its vendors. For purposes of this Agreement, (i) customers shall include then current customers to which the Company provided products or services during the twelve months prior to the Last Date of Employment (the "One Year Lookback") and customer prospects that the Company solicited during the One Year Lookback and that I had significant contact with or learned confidential information about in the course of my employment, and (ii) vendors shall include then current vendors and vendors that provided services to or in connection with the Company during the One Year Lookback.

(b) I shall not, directly or indirectly, in any manner, solicit, entice or attempt to persuade any employee or consultant of the Company to leave the Company for any reason or otherwise participate in or facilitate the hire, directly or through another entity, of any person who is then employed or engaged by the Company or who was engaged by the Company within six months of any attempt to hire such person.

(c) Unless (i) the Company terminates my employment without Cause (as defined below) or I have been laid off; or (ii) the Company waives the restrictions upon post-employment activities set forth in this Section 8(c), then, the Company shall make payments to me for the post-employment portion of the Restricted Period (but for not more than 12 months following the end of my employment) at the rate of 50% of the highest annualized base salary paid to me by the Company within the two-year period preceding the last day of my employment, and in exchange, I shall not directly or indirectly, whether as owner, partner, shareholder, director, manager, consultant, agent, employee, co-venturer or otherwise, anywhere in the United States engage or otherwise participate in any business that develops, manufactures or markets any products, or performs any services, that are competitive with the products or services of the Company, or products or services that the Company or its affiliates has under development or that are the subject of active planning at any time during my employment. For purposes of this Agreement, and notwithstanding anything to the contrary in any other agreement between the Company and me, "Cause" shall mean a reasonable and good faith basis for the Company to be dissatisfied with my job performance, my conduct or my behavior. I acknowledge that this covenant is necessary because the Company's legitimate business interests cannot be adequately protected solely by the other covenants in this Agreement. I further acknowledge and agree that any payments I receive pursuant to this Section 8(c) shall reduce (and shall not be in addition to) any severance or separation pay that I am otherwise entitled to receive from the Company pursuant an agreement, plan or otherwise.

9. Government Contracts. I acknowledge that the Company may have from time to time agreements with other persons or with the United States Government or its agencies that impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. I agree to comply with any such obligations or restrictions upon the direction of the Company. In addition to the rights assigned under paragraph 5, I also assign to the Company (or any of its nominees) all rights that I have or acquired in any Developments, full title to which is required to be in the United States under any contract between the Company and the United States or any of its agencies.

10. Prior Agreements. I hereby represent that, except as I have fully disclosed previously in writing to the Company, I am not bound by the terms of any agreement with any previous or current employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of my employment with the Company or to refrain from competing, directly or indirectly, with the business of such employer or any other party. I further represent that my performance of all the terms of this Agreement as an employee of the Company does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my employment with the Company. I will not disclose to the Company or induce the Company to use any confidential or proprietary information or material belonging to any previous employer or others.

11. Remedies Upon Breach. I understand that the restrictions contained in this Agreement are necessary for the protection of the business and goodwill of the Company and I consider them to be reasonable for such purpose. Any breach of this Agreement is likely to cause the Company substantial and irrevocable damage and therefore, in the event of such breach, the Company, in addition to such other remedies which may be available, will be entitled to specific performance and other injunctive relief, without the posting of a bond. I further acknowledge that a court may render an award extending the Restricted Period as one of the remedies in the event of my violation of this Agreement. If I violate this Agreement, in addition to all other remedies available to the Company at law (including, without limitation, the Company's right to discontinue any payments I may receive pursuant to Section 8(c)), in equity, and under contract, I agree that I am obligated to pay all the Company's costs of enforcement of this Agreement, including reasonable attorneys' fees and expenses.

12. No Employment Obligation. I understand that this Agreement does not create an obligation on the Company or any other person to continue my employment. I acknowledge that, unless otherwise agreed in a formal written employment agreement signed on behalf of the Company by an authorized officer, my employment with the Company is at will and therefore may be terminated by the Company or me at any time and for any reason, with or without cause.

13. Survival and Assignment by the Company. I understand that my obligations under this Agreement will continue in accordance with its express terms regardless of any changes in my title, position, duties, salary, compensation or benefits or other terms and conditions of employment. I further understand that my obligations under this Agreement will continue following the termination of my employment regardless of the manner of such termination and will be binding upon my heirs, executors and administrators. The Company will have the right to assign this Agreement to its affiliates, successors and assigns. I expressly consent to be bound by the provisions of this Agreement for the benefit of the Company or any parent, subsidiary or affiliate to whose employ I may be transferred without the necessity that this Agreement be resigned at the time of such transfer.

14. Notice of Resignation. If I elect to resign from my employment with the Company, I agree to provide the Company with written notification of my resignation at least two (2) weeks prior to my intended resignation date. Such notice shall include information in reasonable detail about my post-employment job duties and other business activities, including the name and address of any subsequent employer and/or person or entity with whom or which I intend to engage in business activities during the Restricted Period and the nature of my job duties and other business activities. The Company may elect to waive all or part of the two (2) week notice period in its sole discretion.

15. Post-Employment Notifications. During the Restricted Period, I will notify the Company of any change in my address and of each subsequent employment or business activity, including the name and address of my employer or other post-Company employment plans and the nature of my activities.

16. Disclosures During Restricted Period. I will provide a copy of this Agreement to any person or entity with whom I may enter into a business relationship, whether as an employee, consultant, partner, coventurer or otherwise, prior to entering into such business relationship during the Restricted Period.

17. Waiver. The Company and I acknowledge and agree that the Company's election not to provide me with garden leave pay as set forth in Section 8(c) shall be deemed a waiver of my noncompetition obligations under Section 8(c). Otherwise, no waiver of any of my obligations under this Agreement shall be effective unless made in writing by the Company. The failure of the Company to require my performance of any term or obligation of this Agreement, or the waiver of any breach of this Agreement, shall not prevent the Company's subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

18. Severability. In case any provisions (or portions thereof) contained in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein. If, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

19. Choice of Law and Jurisdiction. This Agreement will be deemed to be made and entered into in the Commonwealth of Massachusetts, and will in all respects be interpreted, enforced and governed under the laws of the Commonwealth of Massachusetts. I hereby consent to personal jurisdiction of the state and federal courts situated within Massachusetts for purposes of enforcing this Agreement, and waive any objection that I might have to personal jurisdiction or venue in those courts, provided, however, the Company and I agree that all civil actions relating to the Section 8(c) of this Agreement shall be brought in the county of Suffolk and that the superior court or the business litigation session of the superior court shall have exclusive jurisdiction.

20. Independence of Obligations. My obligations under this Agreement are independent of any obligation, contractual or otherwise, the Company has to me. The Company's breach of any such obligation shall not be a defense against the enforcement of this Agreement or otherwise limit my obligations under this Agreement.

21. Protected Disclosures. I understand that nothing contained in this Agreement limits my ability to communicate with any federal, state or local governmental agency or commission, including to provide documents or other information, without notice to the Company. I also understand that nothing in this Agreement limits my ability to share compensation information concerning myself or others, except that this does not permit me to disclose compensation information concerning others that I obtain because my job responsibilities require or allow access to such information.

22. Defend Trade Secrets Act of 2016. I understand that pursuant to the federal Defend Trade Secrets Act of 2016, I shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

23. Entire Agreement; Amendment. This Agreement constitutes the entire agreement between the Company and me with respect to the subject matter hereof, and supersedes all prior agreements or understandings, both written and oral, between the Company and me with respect to the subject matter hereof, but does not in any way merge with or supersede any other confidentiality, assignment of inventions or other restrictive covenant agreement or obligation entered into by the Company and me, which agreements and obligations shall supplement, and shall not limit or be limited by, this Agreement. This Agreement may be amended only in a written agreement executed by a duly authorized officer of the Company and me.

[Remainder of Page Intentionally Left Blank]

I UNDERSTAND THAT THIS AGREEMENT AFFECTS IMPORTANT RIGHTS. BY SIGNING BELOW, I CERTIFY THAT (I) I WAS PROVIDED WITH THIS AGREEMENT BY THE EARLIER OF A FORMAL OFFER OF EMPLOYMENT OR TEN (10) BUSINESS DAYS BEFORE THE COMMENCEMENT OF MY EMPLOYMENT AND (II) I HAVE BEEN ADVISED BY THE COMPANY THAT I HAVE THE RIGHT TO CONSULT WITH COUNSEL PRIOR TO SIGNING THIS AGREEMENT.

IN WITNESS WHEREOF, the undersigned has executed this agreement as a sealed instrument and shall become effective upon the later of the (i) full execution by both parties; or (ii) ten (10) business days after the Company provided me with notice of this Agreement.

DocuSigned by:
Sean Flynn
9E70779B9C7740E...
EMPLOYEE

Signed: __

Type or print name: Sean C Flynn Date: 10/9/2019

DocuSigned by:
Erica Logan
9ECA79FF4EC741E...
THE COMPANY

Signed: __

Type or print name and job title: Erica Logan Sr Mgr Corp Recruiting Date: 10/9/2019

EXHIBIT A

To: Vericel Corporation

From: Sean C. Flynn

Date: 10/9/2019

SUBJECT: **Prior Inventions**

The following is a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

X No inventions or improvements

- See below:

- Additional sheets attached

The following is a list of all patents and patent applications in which I have been named as an inventor:

X None

- See below:

EMPLOYMENT AGREEMENT

This Employment Agreement ("Agreement") is entered into between Vericel Corporation, a Michigan corporation (the "Company") and Dr. Jonathan M. Hopper (the "Executive"), effective as of August 20, 2018 (the "Effective Date").

WHEREAS, the Company and the Executive previously entered into that certain offer letter dated as of July 24, 2018 (the "Prior Agreement"), and both parties desire to supersede and replace the terms set forth in the Prior Agreement with the terms set forth herein; and

WHEREAS, the Company desires to employ the Executive and the Executive desires to be employed by the Company on the terms contained herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements herein contained and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties agree as follows:

1. Position and Duties. The Executive shall serve as the Chief Medical Officer of the Company and shall have such powers and duties as may from time to time be prescribed by the Chief Executive Officer of the Company (the "CEO") or other authorized executive. The Executive shall devote his full working time and efforts to the business and affairs of the Company. Notwithstanding the foregoing, the Executive may engage in religious, charitable or other community activities as long as such services and activities are disclosed to the CEO and do not materially interfere with the Executive's performance of his duties to the Company as provided in this Agreement.

2. Compensation and Related Matters.

(a) Base Salary. The Executive's annual base salary shall be $340,000. The Executive's base salary may be redetermined by the Company's Compensation Committee, after consultation with the CEO. The base salary in effect at any given time is referred to herein as "Base Salary." The Base Salary shall be payable in a manner that is consistent with the Company's usual payroll practices for senior executives.

(b) Incentive Compensation. The Executive shall be eligible to receive cash incentive compensation as determined by the Company's Compensation Committee from time to time. The Executive's target annual incentive compensation shall be Thirty-Five Percent (35%) of his Base Salary, and the actual bonus amount shall be determined by the Company's Compensation Committee. The target annual incentive compensation in effect at any given time is referred to herein as "Target Bonus." The Target Bonus may be redetermined by the Company's Compensation Committee, after consultation with the CEO. To be eligible for incentive compensation, the Executive must be employed by the Company on the day such incentive compensation is paid.

(c) Equity Compensation. The Executive acknowledges and agrees that, in connection with the commencement of his employment, he has been granted an initial equity

grant in the form of an option to purchase 135,000 shares of the Company's common stock, which shall vest and be subject to the terms and conditions of the underlying equity award agreement and the Company's 2017 Omnibus Incentive Plan, as may be amended or restated from time to time (collectively, the "Equity Documents"). From time to time and at the discretion of the Company's Compensation Committee, the Company may grant to the Executive equity compensation, including options to purchase shares of the Company's common stock at an exercise price equal to the fair market value of the Company's common stock on the effective date of grant.

(d) Travel and Lodging. The Company will reimburse the Executive for reasonable travel and lodging expenses incurred in connection with the Executive's commute to Boston during the period starting on the Effective Date and ending on the earlier of: (i) twelve (12) months from the Effective Date; or (ii) the date the Executive relocates to the Boston area, provided that in no event shall the Company reimburse the Executive for more than $35,000 of actual expenses. Up to $15,000 of the Executive's actual expenses will be reimbursed by December 31, 2018, and the balance (up to $20,000 of actual expenses) shall be reimbursed no earlier than January 1, 2019 and no later than December 31, 2019.

(e) Relocation Reimbursement. The Executive agrees to relocate to the Boston area within twelve (12) months after the Effective Date. Upon the Executive's relocation to the Boston area during this period (the "Relocation Date"), he will be eligible for reimbursement of relocation expenses, including temporary housing, moving expenses, two visits to the Boston area for the purpose of securing housing, closing costs associated with selling the Executive's current home and purchasing a new residence in the Boston area and other reasonable move-related items (collectively "Relocation Expenses") in accordance with the Company's expense reimbursement policy, including provisions relating to appropriate supporting documentation (i.e., itemized receipts). The Company shall also provide the Executive with a tax gross-up for applicable federal, state and local taxes paid by him in connection with the reimbursement provided under this Section. If the Executive resigns other than for Good Reason (defined below) or is terminated by the Company for Cause (defined below) at any time prior to the one year anniversary of the Relocation Date, the Executive must repay all relocation expenses, including any tax gross-up payment, to the Company within ten (10) days of the Date of Termination (defined below) (the "Relocation Reimbursement"). The amounts paid by the Company to the Executive under this Section, including any tax gross-up payment, combined with any costs paid directly by the Company to a third party for the Executive's benefit in connection with his relocation, shall not exceed $120,000. Any reimbursements made to the Executive pursuant to this Section shall be paid to Executive no earlier than January 1, 2019 and no later than December 31, 2019.

(f) Tax Reporting. The Company will determine in its reasonable, good faith judgment what, if any, of the Executive's reimbursed travel and lodging and relocation expenses are for nondeductible expenses in accordance with applicable law and will comply with associated withholding and tax reporting obligations.

(g) Expenses. The Executive shall be entitled to receive prompt reimbursement for all reasonable business expenses incurred by him in performing services hereunder, in accordance with the policies and procedures then in effect and established by the Company for its senior executive officers.

(h) Customary Fringe Benefits. The Executive shall be entitled to such fringe benefits as the Company customarily makes available to the Company's senior executives (collectively, "Fringe Benefits"). The Fringe Benefits shall include sick leave, health insurance coverage, and 401(k) plan participation, in accordance with the terms and provisions of such plans, policies and arrangements as adopted by the Company from time to time during the term of this Agreement. The Company reserves the right to change the Fringe Benefits on a prospective basis, at any time, effective upon delivery of written notice to Executive. Executive shall not be entitled to receive payments in lieu of Fringe Benefits, other than for earned and accumulated but unused vacation at the time the employment relationship terminates.

(i) Paid Time Off. The Executive is entitled to accrue 16.67 hours per month, equaling twenty five (25) days per year, of paid time off (including statutory sick leave), pro-rated for any partial calendar year during the term of this Agreement, in accordance with the Company's Paid Time Off policy ("Paid Time Off"). Executive also shall be entitled to such paid holidays as are established by the Company for all regular full-time employees.

3. Termination. The Executive's employment hereunder may be terminated without any breach of this Agreement under the following circumstances:

(a) Death. The Executive's employment hereunder shall terminate upon his death.

(b) Disability. The Company may terminate the Executive's employment if he is disabled and unable to perform the essential functions of the Executive's then existing position or positions under this Agreement with or without reasonable accommodation for a period of 180 days (which need not be consecutive) in any 12-month period. If any question shall arise as to whether during any period the Executive is disabled so as to be unable to perform the essential functions of the Executive's then existing position or positions with or without reasonable accommodation, the Executive may, and at the request of the Company shall, submit to the Company a certification in reasonable detail by a physician selected by the Company to whom the Executive or the Executive's guardian has no reasonable objection as to whether the Executive is so disabled or how long such disability is expected to continue, and such certification shall for the purposes of this Agreement be conclusive of the issue. The Executive shall cooperate with any reasonable request of the physician in connection with such certification. If such question shall arise and the Executive shall fail to submit such certification, the Company's determination of such issue shall be binding on the Executive. Nothing in this Section 3(b) shall be construed to waive the Executive's rights, if any, under existing law including, without limitation, the Family and Medical Leave Act of 1993, 29 U.S.C. §2601 *et seq*. and the Americans with Disabilities Act, 42 U.S.C. §12101 *et seq.*

(c) Termination by Company for Cause. The Company may terminate the Executive's employment hereunder for Cause. For purposes of this Agreement, "Cause" shall

mean: (i) conduct by the Executive constituting a material act of misconduct in connection with the performance of his duties, including, without limitation, misappropriation of funds or property of the Company or any of its subsidiaries or affiliates other than the occasional, customary and de minimis use of Company property for personal purposes; (ii) the commission by the Executive of any felony or a misdemeanor involving moral turpitude, deceit, dishonesty or fraud, or any conduct by the Executive that would reasonably be expected to result in material injury or reputational harm to the Company or any of its subsidiaries and affiliates if he were retained in his position; (iii) continued non-performance by the Executive of his duties hereunder (other than by reason of the Executive's physical or mental illness, incapacity or disability) which has continued for more than 15 days following written notice from the CEO (or the CEO's designee); (iv) a breach by the Executive of any of the provisions contained in Section 7 of this Agreement, including without limitation the Restrictive Covenant Agreement incorporated by reference to Section 7 of this Agreement; (v) a material violation by the Executive of the Company's written employment policies, or (vi) failure to cooperate with a bona fide internal investigation or an investigation by regulatory or law enforcement authorities, after being instructed by the Company to cooperate, or the willful destruction or failure to preserve documents or other materials known to be relevant to such investigation or the inducement of others to fail to cooperate or to produce documents or other materials in connection with such investigation. Any determination of Cause by the Company shall be conclusive.

(d) Termination by the Company without Cause. The Company may terminate the Executive's employment hereunder at any time without Cause. Any termination by the Company of the Executive's employment under this Agreement which does not constitute a termination for Cause under Section 3(c) and does not result from the death or disability of the Executive under Section 3(a) or (b) shall be deemed a termination without Cause.

(e) Termination by the Executive. The Executive may terminate his employment hereunder at any time for any reason, including but not limited to Good Reason. For purposes of this Agreement, "Good Reason" shall mean that the Executive has complied with the "Good Reason Process" (hereinafter defined) following the occurrence of any of the following events: (i) a material diminution in the Executive's responsibilities, authority or duties; (ii) a material diminution in the Executive's Base Salary except for across-the-board salary reductions based on the Company's financial performance similarly affecting all or substantially all senior management employees of the Company; (iii) the material breach of this Agreement by the Company; or (iv) any change in the location of Executive's locus of employment that is more than fifty (50) miles from the current headquarters of the Company. "Good Reason Process" shall mean that (i) the Executive reasonably determines in good faith that a "Good Reason" condition has occurred; (ii) the Executive notifies the Company in writing of the first occurrence of the Good Reason condition within 30 days of the first occurrence of such condition; (iii) the Executive cooperates in good faith with the Company's efforts, for a period not less than 30 days following such notice (the "Cure Period"), to remedy the condition; (iv) notwithstanding such efforts, the Good Reason condition continues to exist; and (v) the Executive terminates his employment within 30 days after the end of the Cure Period. If the Company cures the Good Reason condition during the Cure Period, Good Reason shall be deemed not to have occurred.

(f) Notice of Termination. Except for termination as specified in Section 3(a), any termination of the Executive's employment by the Company or any such termination by the Executive shall be communicated by written Notice of Termination to the other party hereto. For purposes of this Agreement, a "Notice of Termination" shall mean a notice which shall indicate the specific termination provision in this Agreement relied upon.

(g) Date of Termination. "Date of Termination" shall mean: (i) if the Executive's employment is terminated by his death, the date of his death; (ii) if the Executive's employment is terminated on account of disability under Section 3(b), by the Company for Cause under Section 3(c) or by the Company without Cause under Section 3(d), the date on which Notice of Termination is given unless another date is specified therein; (iii) if the Executive's employment is terminated by the Executive under Section 3(e) other than for Good Reason, 30 days after the date on which a Notice of Termination is given, and (iv) if the Executive's employment is terminated by the Executive under Section 3(e) for Good Reason, the date on which a Notice of Termination is given after the end of the Cure Period. Notwithstanding the foregoing, in the event that the Executive gives a Notice of Termination to the Company, the Company may unilaterally accelerate the Date of Termination and such acceleration shall not result in a termination by the Company for purposes of this Agreement.

4. Compensation Upon Termination.

(a) Termination Generally. If the Executive's employment with the Company terminates for any reason, the Company shall pay or provide to the Executive (or to his authorized representative or estate) any earned but unpaid Base Salary, unpaid expense reimbursements, accrued but unused Paid Time Off all through the Date of Termination, and any vested benefits the Executive may have under any employee benefit plan of the Company (the "Accrued Benefit") on or before the time required by law but in no event more than 30 days after the Executive's Date of Termination.

(b) Termination by the Company without Cause or by the Executive for Good Reason. If the Executive's employment is terminated by the Company without Cause as provided in Section 3(d), or the Executive terminates his employment for Good Reason as provided in Section 3(e), then the Company shall, through the Date of Termination, pay the Executive his Accrued Benefit. In addition, subject to the Executive signing a separation agreement in a form and manner satisfactory to the Company which includes a general release of claims in favor of the Company and related persons and entities (the "Release") and such Release becoming irrevocable within the time period set forth in such Release, but in no event later than 60 days following the Date of Termination:

(i) the Company shall pay the Executive an amount equal to twelve (12) months of the Executive's Base Salary (the "Severance Amount"). Notwithstanding the foregoing, if the Executive breaches any of the provisions contained in Section 7 of this Agreement, including without limitation the Restrictive Covenant Agreement incorporated by reference to Section 7 of this Agreement, in addition to all legal and equitable remedies, the Company shall have the right to cease payments of the Severance Amount;

(ii) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects continuation coverage under the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA"), then the Company shall pay to the Executive a monthly cash payment for twelve (12) months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company. The Executive may continue to participate in COBRA benefits following the expiration of the twelve (12) months, at his sole cost, provided that he remains eligible for such participation; and

(iii) the amounts payable under this Section 4(b) shall be paid out in substantially equal installments in accordance with the Company's payroll practice over twelve (12) months commencing within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, the Severance Amount shall begin to be paid in the second calendar year by the last day of such 60-day period; provided, further, that the initial payment shall include a catch-up payment to cover amounts retroactive to the day immediately following the Date of Termination. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2).

5. Change in Control Payment. The provisions of this Section 5 set forth certain terms of an agreement reached between the Executive and the Company regarding the Executive's rights and obligations upon the occurrence of a Change in Control of the Company. These provisions are intended to assure and encourage in advance the Executive's continued attention and dedication to his assigned duties and his objectivity during the pendency and after the occurrence of any such event. These provisions shall apply in lieu of, and expressly supersede, the provisions of Section 4(b) regarding severance pay and benefits upon a termination of employment, if such termination of employment occurs within eighteen (18) months after the occurrence of the first event constituting a Change in Control (the "Change in Control Period"). These provisions shall terminate and be of no further force or effect beginning eighteen (18) months after the occurrence of a Change in Control.

(a) Change in Control. If the Executive's employment is terminated by the Company without Cause as provided in Section 3(d) or the Executive terminates his employment for Good Reason as provided in Section 3(e), and the Date of Termination occurs within the Change in Control Period, then, subject to the signing of the Release by the Executive and such Release becoming irrevocable within the period set forth in such Release, but in no event later than 60 days following the Date of Termination:

(i) the Company shall pay the Executive a lump sum in cash in an amount equal to one (1) multiplied by the sum of (A) the Executive's then-effective Base Salary, and (B) the Executive's Target Bonus for the year during which the Date of Termination occurs;

(ii) the Company shall pay a prorated annual performance bonus (the "Prorated Annual Bonus") equal to (x) the Executive's Target Bonus for the year during which the Date of Termination occurs multiplied by (y) a fraction, the numerator of which is the number of days in the fiscal year in which the Executive was employed through the Date of Termination and the denominator of which is 365, provided that the Prorated Annual Bonus shall be less the amount of any annual performance bonus, or advance thereof, previously paid for the period associated with the Prorated Annual Bonus.

(iii) notwithstanding anything to the contrary in any applicable option agreement or stock-based award agreement, all time-based stock options and other stock-based awards held by the Executive shall immediately accelerate and become fully exercisable or nonforfeitable as of the Date of Termination; and

(iv) if the Executive was participating in the Company's group health plan immediately prior to the Date of Termination and elects COBRA health continuation, then the Company shall pay to the Executive a monthly cash payment for twelve (12) months or the Executive's COBRA health continuation period, whichever ends earlier, in an amount equal to the monthly employer contribution that the Company would have made to provide health insurance to the Executive if the Executive had remained employed by the Company. The Executive may continue to participate in COBRA benefits following the expiration of the twelve (12) months, at his sole cost, provided that he remains eligible for such participation.

(v) The amounts payable under this Section 5(a) shall be paid or commence to be paid within 60 days after the Date of Termination; provided, however, that if the 60-day period begins in one calendar year and ends in a second calendar year, such payment shall be paid or commence to be paid in the second calendar year by the last day of such 60-day period.

(b) Additional Limitation.

(i) Anything in this Agreement to the contrary notwithstanding, in the event that the amount of any compensation, payment or distribution by the Company to or for the benefit of the Executive, whether paid or payable or distributed or distributable pursuant to the terms of this Agreement or otherwise, calculated in a manner consistent with Section 280G of the Code and the applicable regulations thereunder (the "Severance Payments"), would be subject to the excise tax imposed by Section 4999 of the Code, the following provisions shall apply:

(A) If the Severance Payments, reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes payable by the Executive on the amount of the Severance Payments which are in excess of the Threshold Amount, are greater than or equal to the Threshold Amount, the Executive shall be entitled to the full benefits payable under this Agreement.

(B) If the Threshold Amount is less than (x) the Severance Payments, but greater than (y) the Severance Payments reduced by the sum of (1) the Excise Tax and (2) the total of the Federal, state, and local income and employment taxes on the amount of the Severance Payments which are in excess of the Threshold Amount, then the Severance Payments shall be reduced (but not below zero) to the extent necessary so that the sum of all Severance Payments shall not exceed the Threshold Amount. In such event, the Severance Payments shall be reduced in the following order: (1) cash payments not subject to Section 409A of the Code; (2) cash payments subject to Section 409A of the Code; (3) equity-based payments and acceleration; and (4) non-cash forms of benefits. To the extent any payment is to be made over time (e.g., in installments, etc.), then the payments shall be reduced in reverse chronological order.

(ii) For the purposes of this Section 5(b), "Threshold Amount" shall mean three times the Executive's "base amount" within the meaning of Section 280G(b)(3) of the Code and the regulations promulgated thereunder less one dollar ($1.00); and "Excise Tax" shall mean the excise tax imposed by Section 4999 of the Code, and any interest or penalties incurred by the Executive with respect to such excise tax.

(iii) The determination as to which of the alternative provisions of Section 5(b)(i) shall apply to the Executive shall be made by a nationally recognized accounting firm selected by the Company (the "Accounting Firm"), which shall provide detailed supporting calculations both to the Company and the Executive within 15 business days of the Date of Termination, if applicable, or at such earlier time as is reasonably requested by the Company or the Executive. For purposes of determining which of the alternative provisions of Section 5(b)(i) shall apply, the Executive shall be deemed to pay federal income taxes at the highest marginal rate of federal income taxation applicable to individuals for the calendar year in which the determination is to be made, and state and local income taxes at the highest marginal rates of individual taxation in the state and locality of the Executive's residence on the Date of Termination, net of the maximum reduction in federal income taxes which could be obtained from deduction of such state and local taxes. Any determination by the Accounting Firm shall be binding upon the Company and the Executive.

(c) Definitions. For purposes of this Section 5, the following terms shall have the following meanings:

"Change in Control" shall mean any of the following:

(i) any "person," as such term is used in Sections 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended (the "Act") (other than the Company, any of its subsidiaries, or any trustee, fiduciary or other person or entity holding securities under any employee benefit plan or trust of the Company or any of its subsidiaries), together with all "affiliates" and "associates" (as such terms are defined in Rule 12b-2 under the Act) of such person, shall become the "beneficial owner" (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, of securities of the Company

representing 50 percent or more of the combined voting power of the Company's then outstanding securities having the right to vote in an election of the Board ("Voting Securities") (in such case other than as a result of an acquisition of securities directly from the Company); or

(ii) the date a majority of the members of the Board is replaced during any 12-month period by directors whose appointment or election is not endorsed by a majority of the members of the Board before the date of the appointment or election; or

(iii) the consummation of (A) any consolidation or merger of the Company where the stockholders of the Company, immediately prior to the consolidation or merger, would not, immediately after the consolidation or merger, beneficially own (as such term is defined in Rule 13d-3 under the Act), directly or indirectly, shares representing in the aggregate more than 50 percent of the voting shares of the Company issuing cash or securities in the consolidation or merger (or of its ultimate parent corporation, if any), or (B) any sale or other transfer (in one transaction or a series of transactions contemplated or arranged by any party as a single plan) of all or substantially all of the assets of the Company.

Notwithstanding the foregoing, a "Change in Control" shall not be deemed to have occurred for purposes of the foregoing clause (i) solely as the result of an acquisition of securities by the Company which, by reducing the number of shares of Voting Securities outstanding, increases the proportionate number of Voting Securities beneficially owned by any person to 50 percent or more of the combined voting power of all of the then outstanding Voting Securities; provided, however, that if any person referred to in this sentence shall thereafter become the beneficial owner of any additional shares of Voting Securities (other than pursuant to a stock split, stock dividend, or similar transaction or as a result of an acquisition of securities directly from the Company) and immediately thereafter beneficially owns 50 percent or more of the combined voting power of all of the then outstanding Voting Securities, then a "Change in Control" shall be deemed to have occurred for purposes of the foregoing clause (i).

6. Section 409A.

(a) Anything in this Agreement to the contrary notwithstanding, if at the time of the Executive's separation from service within the meaning of Section 409A of the Code, the Company determines that the Executive is a "specified employee" within the meaning of Section 409A(a)(2)(B)(i) of the Code, then to the extent any payment or benefit that the Executive becomes entitled to under this Agreement on account of the Executive's separation from service would be considered deferred compensation subject to the 20 percent additional tax imposed pursuant to Section 409A(a) of the Code as a result of the application of Section 409A(a)(2)(B)(i) of the Code, such payment shall not be payable and such benefit shall not be provided until the date that is the earlier of (A) six months and one day after the Executive's separation from service, or (B) the Executive's death. If any such delayed cash payment is otherwise payable on an installment basis, the first payment shall include a catch-up payment covering amounts that would otherwise have been paid during the six-month period but for the

application of this provision, and the balance of the installments shall be payable in accordance with their original schedule.

(b) All in-kind benefits provided and expenses eligible for reimbursement under this Agreement shall be provided by the Company or incurred by the Executive during the time periods set forth in this Agreement. All reimbursements shall be paid as soon as administratively practicable, but in no event shall any reimbursement be paid after the last day of the taxable year following the taxable year in which the expense was incurred. The amount of in-kind benefits provided or reimbursable expenses incurred in one taxable year shall not affect the in-kind benefits to be provided or the expenses eligible for reimbursement in any other taxable year. Such right to reimbursement or in-kind benefits is not subject to liquidation or exchange for another benefit.

(c) To the extent that any payment or benefit described in this Agreement constitutes "non-qualified deferred compensation" under Section 409A of the Code, and to the extent that such payment or benefit is payable upon the Executive's termination of employment, then such payments or benefits shall be payable only upon the Executive's "separation from service." The determination of whether and when a separation from service has occurred shall be made in accordance with the presumptions set forth in Treasury Regulation Section 1.409A1(h).

(d) The parties intend that this Agreement will be administered in accordance with Section 409A of the Code. To the extent that any provision of this Agreement is ambiguous as to its compliance with Section 409A of the Code, the provision shall be read in such a manner so that all payments hereunder comply with Section 409A of the Code. Each payment pursuant to this Agreement is intended to constitute a separate payment for purposes of Treasury Regulation Section 1.409A-2(b)(2). The parties agree that this Agreement may be amended, as reasonably requested by either party, and as may be necessary to fully comply with Section 409A of the Code and all related rules and regulations in order to preserve the payments and benefits provided hereunder without additional cost to either party.

(e) The Company makes no representation or warranty and shall have no liability to the Executive or any other person if any provisions of this Agreement are determined to constitute deferred compensation subject to Section 409A of the Code but do not satisfy an exemption from, or the conditions of, such Section.

7. Confidential Information, Noncompetition and Cooperation.

(a) Restrictive Covenant Agreement. As a material condition of the Executive's employment by the Company, the Executive hereby agrees to the terms of the Restrictive Covenant Agreement attached hereto as Exhibit A (the "Restrictive Covenant Agreement"). The terms of the Restrictive Covenant Agreement shall be in full force and effect and are incorporated by reference as material terms of this Agreement.

(b) Third-Party Agreements and Rights. The Executive hereby confirms that the Executive is not bound by the terms of any agreement with any previous employer or other party

which restricts in any way the Executive's use or disclosure of information or the Executive's engagement in any business. The Executive represents to the Company that the Executive's execution of this Agreement, the Executive's employment with the Company and the performance of the Executive's proposed duties for the Company will not violate any obligations the Executive may have to any such previous employer or other party. In the Executive's work for the Company, the Executive will not disclose or make use of any information in violation of any agreements with or rights of any such previous employer or other party, and the Executive will not bring to the premises of the Company any copies or other tangible embodiments of non-public information belonging to or obtained from any such previous employment or other party.

(c) Litigation and Regulatory Cooperation. During and after the Executive's employment, the Executive shall cooperate fully with the Company in the defense or prosecution of any claims or actions now in existence or which may be brought in the future against or on behalf of the Company which relate to events or occurrences that transpired while the Executive was employed by the Company. The Executive's full cooperation in connection with such claims or actions shall include, but not be limited to, being available to meet with counsel to prepare for discovery or trial and to act as a witness on behalf of the Company at mutually convenient times. During and after the Executive's employment, the Executive also shall cooperate fully with the Company in connection with any investigation or review of any federal, state or local regulatory authority as any such investigation or review relates to events or occurrences that transpired while the Executive was employed by the Company. The Company shall reimburse the Executive for any reasonable outofpocket expenses incurred in connection with the Executive's performance of obligations pursuant to this Section 7(c).

(d) Injunction. The Executive agrees that it would be difficult to measure any damages caused to the Company which might result from any breach by the Executive of the promises set forth in this Section 7, and that in any event money damages would be an inadequate remedy for any such breach. Accordingly, subject to Section 8 of this Agreement, the Executive agrees that if the Executive breaches, or proposes to breach, any portion of this Agreement, the Company shall be entitled, in addition to all other remedies that it may have, to an injunction or other appropriate equitable relief to restrain any such breach without showing or proving any actual damage to the Company.

(e) Protected Disclosure. The Executive understands that nothing contained in this Agreement limits the Executive's ability to communicate with any federal, state or local governmental agency or commission, including to provide documents or other information, without notice to the Company.

8. Consent to Jurisdiction. The parties hereby consent to the jurisdiction of the Superior Court of the Commonwealth of Massachusetts and the United States District Court for the District of Massachusetts. Accordingly, with respect to any such court action, the Executive (a) submits to the personal jurisdiction of such courts; (b) consents to service of process; and (c) waives any other requirement (whether imposed by statute, rule of court, or otherwise) with respect to personal jurisdiction or service of process.

9. Integration. This Agreement, including the Restrictive Covenant Agreement, constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements between the parties concerning such subject matter, including without limitation, the Prior Agreement; *provided* that the Equity Documents, the Acknowledgment regarding the Statement of Company Policy on Insider Trading and Disclosure, and the Acknowledgment of the Statement of Company Policy on the Code of Business Conduct and Ethics shall remain in full force and effect.

10. Withholding. All payments made by the Company to the Executive under this Agreement shall be net of any tax or other amounts required to be withheld by the Company under applicable law.

11. Successor to the Executive. This Agreement shall inure to the benefit of and be enforceable by the Executive's personal representatives, executors, administrators, heirs, distributees, devisees and legatees. In the event of the Executive's death after his termination of employment but prior to the completion by the Company of all payments due him under this Agreement, the Company shall continue such payments to the Executive's beneficiary designated in writing to the Company prior to his death (or to his estate, if the Executive fails to make such designation).

12. Enforceability. If any portion or provision of this Agreement (including, without limitation, any portion or provision of any section of this Agreement) shall to any extent be declared illegal or unenforceable by a court of competent jurisdiction, then the remainder of this Agreement, or the application of such portion or provision in circumstances other than those as to which it is so declared illegal or unenforceable, shall not be affected thereby, and each portion and provision of this Agreement shall be valid and enforceable to the fullest extent permitted by law.

13. Survival. The provisions of this Agreement shall survive the termination of this Agreement and/or the termination of the Executive's employment to the extent necessary to effectuate the terms contained herein.

14. Waiver. No waiver of any provision hereof shall be effective unless made in writing and signed by the waiving party. The failure of any party to require the performance of any term or obligation of this Agreement, or the waiver by any party of any breach of this Agreement, shall not prevent any subsequent enforcement of such term or obligation or be deemed a waiver of any subsequent breach.

15. Notices. Any notices, requests, demands and other communications provided for by this Agreement shall be sufficient if in writing and delivered in person or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid, return receipt requested, to the Executive at the last address the Executive has filed in writing with the Company or, in the case of the Company, at its main offices, attention of the Board.

16. Amendment. This Agreement may be amended or modified only by a written instrument signed by the Executive and by a duly authorized representative of the Company.

17. Governing Law. This is a Massachusetts contract and shall be construed under and be governed in all respects by the laws of the Commonwealth of Massachusetts, without giving effect to the conflict of laws principles of such Commonwealth. With respect to any disputes concerning federal law, such disputes shall be determined in accordance with the law as it would be interpreted and applied by the United States Court of Appeals for the First Circuit.

18. Counterparts. This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be taken to be an original; but such counterparts shall together constitute one and the same document.

19. Successor to Company. The Company shall require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company expressly to assume and agree to perform this Agreement to the same extent that the Company would be required to perform it if no succession had taken place. Failure of the Company to obtain an assumption of this Agreement at or prior to the effectiveness of any succession shall be a material breach of this Agreement.

20. Gender Neutral. Wherever used herein, a pronoun in the masculine gender shall be considered as including the feminine gender unless the context clearly indicates otherwise.

IN WITNESS WHEREOF, the parties have executed this Agreement effective on the Effective Date.

VERICEL CORPORATION

/s/ Dominick C. Colangelo
By: Dominick C. Colangelo
Its: President and Chief Executive Officer

EXECUTIVE

/s/ Jonathan M. Hopper
Dr. Jonathan M. Hopper

Exhibit A

Restrictive Covenant Agreement

In consideration and as a condition of my employment as well as the benefits set forth in my Employment Agreement with Vericel Corporation (including its subsidiaries and/or affiliates and its and their successors and assigns, the "Company"), I agree as follows:

1. **Proprietary Information**. I agree that all information, whether or not in writing, concerning the Company's business, technology, business relationships or financial affairs which the Company has not released to the general public (collectively, "Proprietary Information") is and will be the exclusive property of the Company. By way of illustration, Proprietary Information may include information or material which has not been made generally available to the public, such as: (a) corporate information, including plans, strategies, methods, policies, resolutions, negotiations or litigation; (b) marketing information, including strategies, methods, customer identities or other information about customers, prospect identities or other information about prospects, or market analyses or projections; (c) financial information, including cost and performance data, debt arrangements, equity structure, investors and holdings, purchasing and sales data and price lists; (d) operational and technological information, including plans, specifications, manuals, forms, templates, software, designs, methods, procedures, formulas, discoveries, inventions, improvements, concepts and ideas; and (e) personnel information, including personnel lists, reporting or organizational structure, resumes, personnel data, performance evaluations and termination arrangements or documents. Proprietary Information also includes information received in confidence by the Company from its customers or suppliers or other third parties.

2. **Recognition of Company's Rights**. I will not, at any time, without the Company's prior written permission, either during or after my employment, disclose any Proprietary Information to anyone outside of the Company, or use or permit to be used any Proprietary Information for any purpose other than the performance of my duties as an employee of the Company. I will cooperate with the Company and use my best efforts to prevent the unauthorized disclosure of all Proprietary Information. I will deliver to the Company all copies of Proprietary Information in my possession or control upon the earlier of a request by the Company or termination of my employment.

3. **Rights of Others**. I understand that the Company is now and may hereafter be subject to non-disclosure or confidentiality agreements with third persons which require the Company to protect or refrain from use of proprietary information. I agree to be bound by the terms of such agreements in the event I have access to such proprietary information.

4. **Commitment to Company; Avoidance of Conflict of Interest.** While an employee of the Company, I will devote my full-time efforts to the Company's business and I will not engage in any other business activity without prior written permission of an authorized representative of the Company. I will advise the General Counsel of the Company or his or her nominee at such time as any activity of either the Company or another business presents me with a conflict of interest or the appearance of a conflict of interest as an employee of the Company. I will take whatever action is requested of me by the Company to resolve any conflict or appearance of conflict which it finds to exist.

5. **Developments.** I will make full and prompt disclosure to the Company of all inventions, discoveries, designs, developments, methods, modifications, improvements, processes, algorithms, databases, computer programs, formulae, techniques, trade secrets, graphics or images, and audio or visual works and other works of authorship (collectively "Developments"), whether or not patentable or copyrightable, that are created, made, conceived or reduced to practice by me (alone or jointly with others) or under my direction during the period of my employment. I acknowledge that all work performed by me is on a "work for hire" basis, and I hereby do assign and transfer and, to the extent any such assignment cannot be made at present, will assign and transfer, to the Company and its successors and assigns all my right, title and interest in all Developments that (a) relate to the business of the Company or any of the products or services being researched, developed, manufactured or sold by the Company or which may be used with such products or services; or (b) result from tasks assigned to me by the Company; or (c) result from the use of premises or personal property (whether tangible or intangible) owned, leased or contracted for by the Company ("Company-Related Developments"), and all related patents, patent applications, trademarks and trademark applications, copyrights and copyright applications, and other intellectual property rights in all countries and territories worldwide and under any international conventions ("Intellectual Property Rights").

To preclude any possible uncertainty, I have set forth on Schedule A attached hereto a complete list of Developments that I have, alone or jointly with others, conceived, developed or reduced to practice prior to the commencement of my employment with the Company that I consider to be my property or the property of third parties and that I wish to have excluded from the scope of this Agreement ("Prior Inventions"). If disclosure of any such Prior Invention would cause me to violate any prior confidentiality agreement, I

understand that I am not to list such Prior Inventions in Schedule A but am only to disclose a cursory name for each such invention, a listing of the party(ies) to whom it belongs and the fact that full disclosure as to such inventions has not been made for that reason. I have also listed on Schedule A all patents and patent applications in which I am named as an inventor, other than those which have been assigned to the Company ("Other Patent Rights"). If no such disclosure is attached, I represent that there are no Prior Inventions or Other Patent Rights. If, in the course of my employment with the Company, I incorporate a Prior Invention into a Company product, process or machine or other work done for the Company, I hereby grant to the Company a nonexclusive, royalty-free, paid-up, irrevocable, worldwide license (with the full right to sublicense) to make, have made, modify, use, sell, offer for sale and import such Prior Invention. Notwithstanding the foregoing, I will not incorporate, or permit to be incorporated, Prior Inventions in any Company-Related Development without the Company's prior written consent.

This Agreement does not obligate me to assign to the Company any Development which, in the sole judgment of the Company, reasonably exercised, is developed entirely on my own time and does not relate to the business efforts or research and development efforts in which, during the period of my employment, the Company actually is engaged or reasonably would be engaged, and does not result from the use of premises or equipment owned or leased by the Company. However, I will also promptly disclose to the Company any such Developments for the purpose of determining whether they qualify for such exclusion. I understand that to the extent this Agreement is required to be construed in accordance with the laws of any state which precludes a requirement in an employee agreement to assign certain classes of inventions made by an employee, this paragraph 5 will be interpreted not to apply to any invention which a court rules and/or the Company agrees falls within such classes. I also hereby waive all claims to any moral rights or other special rights which I may have or accrue in any Company-Related Developments.

6. **Documents and Other Materials.** I will keep and maintain adequate and current records of all Proprietary Information and Company-Related Developments developed by me during my employment, which records will be available to and remain the sole property of the Company at all times.

All files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, whether created by me or others, which come into my custody or possession, are the exclusive property of the Company to be used by me only in the performance of my duties for the Company. Any property situated on the Company's premises and owned by the Company, including without limitation computers, disks and other storage media, filing cabinets or other work areas, is subject to inspection by the Company at any time with or without notice. In the event of the termination of my employment for any reason, I will deliver to the Company all Company property and equipment in my possession, custody or control, including all files, letters, notes, memoranda, reports, records, data, sketches, drawings, notebooks, layouts, charts, quotations and proposals, specification sheets, program listings, blueprints, models, prototypes, or other written, photographic or other tangible material containing Proprietary Information, and other materials of any nature pertaining to the Proprietary Information of the Company and to my work, and will not take or keep in my possession any of the foregoing or any copies.

7. **Enforcement of Intellectual Property Rights.** I will cooperate fully with the Company, both during and after my employment with the Company, with respect to the procurement, maintenance and enforcement of Intellectual Property Rights in Company-Related Developments. I will sign, both during and after the term of this Agreement, all papers, including without limitation copyright applications, patent applications, declarations, oaths, assignments of priority rights, and powers of attorney, which the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development. If the Company is unable, after reasonable effort, to secure my signature on any such papers, I hereby irrevocably designate and appoint each officer of the Company as my agent and attorney-in-fact to execute any such papers on my behalf, and to take any and all actions as the Company may deem necessary or desirable in order to protect its rights and interests in any Company-Related Development.

8. **Non-Competition and Non-Solicitation.** In order to protect the Company's Proprietary Information and good will, during my employment and (i) with respect to clause (a) below, for a period of twelve (12) months following the termination of my employment or other service relationship with the Company for any reason and (ii) with respect to clauses (b) and (c) below, for a period of twelve (12) months following the termination of my employment or other service relationship with the Company for any reason (the "Restricted Period"):

i. I will not directly or indirectly, whether as owner, partner, shareholder, director, manager, consultant, agent, employee, co-venturer or otherwise, engage, participate or invest in any business activity anywhere in the United States that is competitive with the Company's development programs, including product candidates developed thereunder, or technologies or commercial products, at such time of my termination of employment; provided that this shall not prohibit any possible investment in publicly traded stock of a company representing less than one percent of the stock of such company.

ii. I will not, directly or indirectly, in any manner, other than for the benefit of the Company or for solely non-competitive purposes, call upon, solicit, divert, take away, accept or conduct any business from or with any of the customers or prospective customers of the Company.

i. I will not, directly or indirectly, in any manner, solicit, entice, attempt to persuade any other employee or consultant of the Company to leave the Company for any reason or otherwise participate in or facilitate the hire, directly or through another entity, of any person who is employed or engaged by the Company or who was employed or engaged by the Company within six months of any attempt to hire such person.

I acknowledge and agree that if I violate any of the provisions of this paragraph 8 after my employment ends, the running of the Restricted Period will be extended until there is a period of in which there is no violation of this paragraph 8.

9. **Government Contracts.** I acknowledge that the Company may have from time to time agreements with other persons or with the United States Government or its agencies which impose obligations or restrictions on the Company regarding inventions made during the course of work under such agreements or regarding the confidential nature of such work. I agree to comply with any such obligations or restrictions upon the direction of the Company. In addition to the rights assigned under paragraph 5, I also assign to the Company (or any of its nominees) all rights which I have or acquired in any Developments, full title to which is required to be in the United States under any contract between the Company and the United States or any of its agencies.

10. **Prior Agreements.** I hereby represent that, except as I have fully disclosed previously in writing to the Company, I am not bound by the terms of any agreement with any previous employer or other party to refrain from using or disclosing any trade secret or confidential or proprietary information in the course of my employment with the Company or to refrain from competing, directly or indirectly, with the business of such previous employer or any other party. I further represent that my performance of all the terms of this Agreement as an employee of the Company does not and will not breach any agreement to keep in confidence proprietary information, knowledge or data acquired by me in confidence or in trust prior to my employment with the Company. I will not disclose to the Company or induce the Company to use any confidential or proprietary information or material belonging to any previous employer or others.

11. **Remedies Upon Breach.** I understand that the restrictions contained in this Agreement are necessary for the protection of the business and goodwill of the Company and I consider them to be reasonable for such purpose. Any breach of this Agreement is likely to cause the Company substantial and irrevocable damage and therefore, in the event of such breach, the Company, in addition to such other remedies which may be available, will be entitled to specific performance and other injunctive relief, without the posting of a bond. If I violate this Agreement, in addition to all other remedies available to the Company at law, in equity, and under contract, I agree that I am obligated to pay all the Company's costs of enforcement of this Agreement, including attorneys' fees and expenses.

12. **Use of Voice, Image and Likeness.** I give the Company permission to use any and all of my voice, image and likeness, with or without using my name, in connection with the products and/or services of the Company, for the purposes of advertising and promoting such products and/or services and/or the Company, and/or for other purposes deemed appropriate by the Company in its reasonable discretion, except to the extent expressly prohibited by law.

13. **No Employment Obligation.** I understand that this Agreement does not create an obligation on the Company or any other person to continue my employment. I acknowledge that, unless otherwise agreed in a formal written employment agreement signed on behalf of the Company by an authorized officer, my employment with the Company is at will and therefore may be terminated by the Company or me at any time and for any reason, with or without cause.

14. **Survival and Assignment by the Company.** I understand that my obligations under this Agreement will continue in accordance with its express terms regardless of any changes in my title, position, duties, salary, compensation or benefits or other terms and conditions of employment. I further understand that my obligations under this Agreement will continue following the termination of my employment regardless of the manner of such termination and will be binding upon my heirs, executors and administrators. The Company will have the right to assign this Agreement to its affiliates, successors and assigns. I expressly consent to be bound by the provisions of this Agreement for the benefit of the Company or any parent, subsidiary or affiliate to whose employ I may be transferred without the necessity that this Agreement be resigned at the time of such transfer.

15. **Post-Employment Notifications.** For twelve (12) months following termination of my employment, I will notify the Company of any change in my address and of each subsequent employment or business activity, including the name and address of my employer or other post-Company employment plans and the nature of my activities.

16. **Disclosure to Future Employers.** I will provide a copy of this Agreement to any prospective employer, partner or coventurer prior to entering into an employment, partnership or other business relationship with such person or entity.

17. **Severability.** In case any provisions (or portions thereof) contained in this Agreement shall, for any reason, be held invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect the other provisions of this Agreement, and this Agreement shall be construed as if such invalid, illegal or unenforceable provision had never been contained herein. If, moreover, any one or more of the provisions contained in this Agreement shall for any reason be held to be excessively broad as to duration, geographical scope, activity or subject, it shall be construed by limiting and reducing it, so as to be enforceable to the extent compatible with the applicable law as it shall then appear.

18. **Interpretation; Consent to Jurisdiction.** This Agreement will be deemed to be made and entered into in the Commonwealth of Massachusetts, and will in all respects be interpreted, enforced and governed under the laws of the Commonwealth of Massachusetts. I hereby consent to personal jurisdiction of the state and federal courts situated within Massachusetts for purposes of enforcing this Agreement, and waive any objection that I might have to personal jurisdiction or venue in those courts.

19. **Protected Disclosures.** I understand that nothing contained in this Agreement limits my ability to communicate with any federal, state or local governmental agency or commission, including to provide documents or other information, without notice to the Company.

20. **Defend Trade Secrets Act of 2016.** I understand that pursuant to the federal Defend Trade Secrets Act of 2016, I shall not be held criminally or civilly liable under any federal or state trade secret law for the disclosure of a trade secret that (a) is made (i) in confidence to a federal, state, or local government official, either directly or indirectly, or to an attorney; and (ii) solely for the purpose of reporting or investigating a suspected violation of law; or (b) is made in a complaint or other document filed in a lawsuit or other proceeding, if such filing is made under seal.

21. **Other Agreements and Obligations**. This Agreement constitutes the entire agreement between me and the Company regarding the subject matter hereof, and supersedes any previous agreements or understandings that I had or may have had between me and the Company regarding the subject matter, except any confidentiality and/or assignment of inventions agreement that I entered into with the Company shall continue to be in full force and effect and shall be supplemental to this Agreement.

1.

[Remainder of Page Intentionally Left Blank]

I UNDERSTAND THAT THIS AGREEMENT AFFECTS IMPORTANT RIGHTS. BY SIGNING BELOW, I CERTIFY THAT I HAVE READ IT CAREFULLY AND AM SATISFIED THAT I UNDERSTAND IT COMPLETELY.

IN WITNESS WHEREOF, the undersigned has executed this agreement as a sealed instrument as of the date set forth below.

Signed: _____/s/ Jonathan M. Hopper_____
(Employee's full name)

Type or print name: Dr. Jonathan M. Hopper

Date: _____

SCHEDULE A

To: **Vericel Corporation**

From: _____

Date: _____

SUBJECT: **Prior Inventions**

The following is a complete list of all inventions or improvements relevant to the subject matter of my employment by the Company that have been made or conceived or first reduced to practice by me alone or jointly with others prior to my engagement by the Company:

No inventions or improvements

See below:

_____

_____

_____

Additional sheets attached

The following is a list of all patents and patent applications in which I have been named as an inventor:

None

See below:

_____

_____

_____

Exhibit 21.1

SUBSIDIARIES OF REGISTRANT

Marrow Donation, LLC, a California limited liability company

Vericel Denmark ApS, a Danish private limited company

Vericel Security Corporation, a Massachusetts corporation

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-226873) and Form S-8 (Nos. 333-241700, 333-217741, 333-205338, 333-187346, 333-174758, 333-163832, 333-140624, 333-121006, and 333-231163) of Vericel Corporation of our report dated February 24, 2021 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

Boston, Massachusetts

February 24, 2021

EXHIBIT 31.1

CERTIFICATION

I, Dominick C. Colangelo, certify that:

1. I have reviewed this Annual Report on Form 10-K of Vericel Corporation for the year ended December 31, 2020;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ DOMINICK C. COLANGELO
Dominick C. Colangelo
President and Chief Executive Officer
(Principal Executive Officer)

Date: February 24, 2021

EXHIBIT 31.2

CERTIFICATION

I, Joseph Mara, certify that:

1. I have reviewed this Annual Report on Form 10-K of Vericel Corporation for the year ended December 31, 2020;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ JOSEPH MARA

Joseph Mara

Chief Financial Officer

(Principal Financial Officer)

Date: February 24, 2021

EXHIBIT 32.1

18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Vericel Corporation (Company) on Form 10-K for the year ended December 31, 2020, as filed with the Securities and Exchange Commission on the date hereof (Report), each of the undersigned officers of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (Section 906), the following:

(1) The Report fully complies with the requirements of section 13(a) and 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ DOMINICK C. COLANGELO
Dominick C. Colangelo
President and Chief Executive Officer
(Principal Executive Officer)

/s/ JOSEPH MARA
Joseph Mara
Chief Financial Officer
(Principal Financial Officer)

Date: February 24, 2021

A signed original of this written statement required by Section 906 has been provided to Vericel Corporation and will be retained by Vericel Corporation and furnished to the Securities and Exchange Commission or its staff upon request.