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

FORM 10-K

X **ANNUAL REPORT UNDER SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2020

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

For the transition period from _____ to _____

Commission File No. 0-51891

INTERNATIONAL STEM CELL CORPORATION

(Exact name of registrant as specified in its charter)

Delaware	**20-4494098**
(State of other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**
5950 Priestly Drive Carlsbad, CA	**92008**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number: (760) 940-6383

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

Title of each class	**Name of each exchange on which registered**
None	**None**

Securities registered pursuant to section 12(g) of the Act:

Common Stock, $0.001 par value per share
(Title of class)

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

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

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 during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes X No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See 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	X	Smaller reporting company	X
		Emerging growth company	☐

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

Indicate by check mark whether the registrant 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.C. 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 voting and non-voting common equity held by non-affiliates of the registrant was approximately $2,853,000 based upon the closing price of the common stock on June 30, 2020 (the last business day of the registrant's most recently completed second fiscal quarter) on the OTC QB Bulletin Board. Shares of common stock held by each officer, director and holder of five percent or more of the outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 26, 2021 there were 7,539,089 shares of the registrant's common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Information from portions of the registrant's definitive Proxy Statement for its Annual Meeting of Stockholders to be held in 2021 is incorporated by reference into Part III of this Form 10-K.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements. For example, statements regarding our expected financial position, business strategy and other plans and objectives for future operations, and assumptions and predictions about potential markets, future product demand, product development targets and expected timing, expenses, sales and the potential effects of the COVID-19 pandemic are all forward-looking statements. These statements may be found in the items of this Annual Report entitled "Description of Business" and "Management's Discussion and Analysis of Financial Condition and Results of Operations," as well as in this Annual Report generally. These statements are generally accompanied by words such as "intend," "anticipate," "believe," "estimate," "potential(ly)," "continue," "forecast," "predict," "plan," "may," "will," "could," "would," "should," "expect," or the negative of such terms or other comparable terminology.

We have based these forward-looking statements on our current expectations and projections about future events. We believe that the assumptions and expectations reflected in such forward-looking statements are reasonable, based on information available to us on the date hereof, but we cannot assure you that these assumptions and expectations will prove to have been correct or that we will take any action that we may presently be planning. However, these forward-looking statements are inherently subject to known and unknown risks and uncertainties. Actual results or experience may differ materially from those expected or anticipated in the forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, research and product development uncertainties, clinical trial results, regulatory policies and approval requirements, competition from other similar businesses, market and general economic factors, the availability of resources and the other risks discussed in Item 1A of this Annual Report. This discussion should be read in conjunction with the consolidated financial statements and notes thereto included in this Annual Report.

We have identified some of the important factors that could cause future events to differ from our current expectations and they are described in this Annual Report in the section entitled "Risk Factors" which you should review carefully. Please consider our forward-looking statements in light of those risks as you read this Annual Report. If one or more of these or other risks or uncertainties materialize, or if our underlying assumptions prove to be incorrect, actual results may vary materially from what we project. We do not undertake, and specifically decline any obligation, to update any forward-looking statements or to publicly announce the results of any revisions to any statements to reflect new information or future events or developments.

PART I

ITEM 1. BUSINESS

Business Overview

International Stem Cell Corporation (sometimes referred to herein as "ISCO", the "Company", "we", "us", or "our") is a clinical stage biotechnology company focused on therapeutic and biomedical product development with multiple long-term therapeutic opportunities and two revenue-generating businesses offering potential for increased future revenue.

We currently have no revenue generated from our principal operations in therapeutic and clinical product development through research and development efforts. We have generated revenue from our two commercial businesses, anti-aging and research products, of a total of $7.1 million and $9.5 million for the years ended December 31, 2020 and 2019, respectively.

Our products are based on multi-decade experience with human cell culture and a proprietary type of pluripotent stem cells, "human parthenogenetic stem cells" ("hpSCs"). Our hpSCs are comparable to human embryonic stem cells ("hESCs") in that they have the potential to be differentiated into many different cells in the human body. However, the derivation of hpSCs does not require the use of fertilized eggs or the destruction of human embryos and also offers the potential for the creation of immune-matched cells and tissues that are less likely to be rejected following transplantation. ISCO scientists have created the first parthenogenetic, homozygous stem cell line that can be a source of therapeutic cells for hundreds of millions of individuals with minimal immune rejection after transplantation. We have facilities and manufacturing processes that we believe comply with the requirements of current Good Manufacturing Practice ("GMP") standards as defined by the U.S. Code of Federal Regulations and promulgated by the Food and Drug Administration ("FDA").

We are developing different cell types from our stem cells that may result in therapeutic products. We focus on applications where cell and tissue therapy are already proven but where there is an insufficient supply of functional cells or tissue. We believe that the most promising potential clinical applications of our technology are:

- Neural stem cells (ISC-hpNSC®) for treatment of Parkinson's disease and potentially other central nervous system disorders, such as traumatic brain injury, stroke and Alzheimer's disease.
- Liver cells ("hepatocytes") that may be used to treat a variety of congenital and acquired liver diseases. Using the same precursor cell that leads to liver cells, it is also possible to create islet cells for potential treatment of diabetes.

Our most advanced project is the neural stem cell program for the treatment of Parkinson's disease. In 2013 we published in Nature Scientific Reports the basis for our patent on a new method of manufacturing neural stem cells which is used to produce the clinical-grade cells necessary for future clinical studies and commercialization. In 2014 we completed the majority of the preclinical research establishing the safety profile of neural stem cells ("NSC") in various animal species including non-human primates. In June 2016 we published the results of a 12-month pre-clinical non-human primate study that demonstrated the safety, efficacy and mechanism of action of the ISC-hpNSC®. In 2017, we began our Phase I trial of ISC-hpNSC®, human parthenogenetic stem cell-derived neural stem cells for the treatment of Parkinson's disease. This trial involves three groups, each with four patients, with each group receiving an increasing amount of ISC-hpNSC via intracerebral transplantation. Patients are evaluated for 12 months (active phase of the study) with an additional 5-year observational follow-up period to assess safety. We reported 12-month results from the first cohort and 6-month interim results of the second cohort at the Society for Neuroscience annual meeting (Neuroscience 2018) in November 2018. In April 2019, we announced the completion of subject enrollment, with the 12th subject receiving a transplantation of the highest dose of cells. There have been no safety signals or serious adverse effects seen to date as related to the transplanted ISC-hpNSC® cells. We anticipate providing full results of the active and follow up periods of the phase I clinical study in the second quarter of 2021.

Each of these product candidates will require extensive preclinical and clinical development and may require specific unforeseen licensing rights obtained at substantial cost before regulatory approval may be achieved and the products sold for therapeutic use.

Additionally, we are subject to various other risks; for example, our business is at an early stage of development and we may not develop therapeutic products that can be commercialized; we have a history of operating losses, do not expect to be profitable in the near future and our independent registered public accounting firm has expressed substantial doubt as to our ability to continue as a going concern; and we will need additional capital to conduct our operations and develop our products and our ability to obtain the necessary funding is uncertain. Please see the heading "Risk Factors" beginning on page 14.

Market Opportunity and Growth Strategy

Therapeutic Market – Clinical Applications of hpSCs for Disease Treatment

With respect to therapeutic research and product candidates, we focus on applications where cell and tissue therapy is already proven but where there is an insufficient supply of safe and functional cells or tissue. We believe that the most promising potential clinical applications of our technology are: 1) Parkinson's disease ("PD"); 2) traumatic brain injury ("TBI"), and 3) metabolic/liver diseases. Using our proprietary technologies and know-how, we are creating neural stem cells from hpSCs as a potential treatment of PD, TBI, and stroke. Liver cells from our hpSCs may also be able to treat a variety of hepatic and metabolic liver diseases.

Our most advanced project is the neural stem cell program for the treatment of Parkinson's disease. In 2013 we published in Nature Scientific Reports the basis for our patent on a new method of manufacturing neural stem cells which is used to produce the clinical-grade cells necessary for future clinical studies and commercialization. In 2014 we completed the majority of the preclinical research establishing the safety profile of NSC in various animal species including non-human primates. In June 2016 we published the results of a 12-month pre-clinical non-human primate study that demonstrated the safety, efficacy and mechanism of action of the ISC-hpNSC®. In 2017, we began our Phase I trial of ISC-hpNSC®, human parthenogenetic stem cell-derived neural stem cells for the treatment of Parkinson's disease. This trial involves three groups, each with four patients, with each group receiving an increasing amount of ISC-hpNSC via intracerebral transplantation. Patients are evaluated for 12 months (active phase of the study) with an additional 5-year observational follow-up period to assess safety. In 2017 we dosed four patients in our Phase I trial of ISC-hpNSC®, human parthenogenetic stem cell-derived neural stem cells for the treatment of Parkinson's disease. We reported 12-month results from the first cohort and 6-month interim results of the second cohort at the Society for Neuroscience annual meeting (Neuroscience 2018) in November 2018. In April 2019, we announced the completion of subject enrollment, with the 12th subject receiving a transplantation of the highest dose of cells. There have been no safety signals or serious adverse effects seen to date as related to the transplanted ISC-hpNSC® cells. We anticipate providing full results of the Phase I clinical study in the second quarter of 2021.

In November 2014 in an important ruling, the FDA cleared ISCO's human parthenogenetic stem cells line for investigational clinical use. This was a necessary step in the process of advancing stem cell therapies based on ISCO's core technology into clinical development and on to commercialization. Although the Phase I study is conducted in Australia, and therefore not subject to FDA oversight, we anticipate that a significant portion of future studies will be carried out in the United States where this approval is necessary.

In August 2014, we announced the launch of a stroke program, evaluating the use of ISC-hpNSC® transplantation for the treatment of ischemic stroke using a rodent model of the disease. The Company has a considerable amount of safety data on ISC-hpNSC from the Parkinson's disease program and, as there is evidence that transplantation of ISC-hpNSC may improve patient outcomes as an adjunctive therapeutic strategy in stroke, having a second program that can use this safety dataset is therefore a logical extension. In 2015 the Company together with Tulane University demonstrated that NSC can significantly reduce neurological dysfunction after a stroke in animal models.

In October 2016, we announced the results of the pre-clinical rodent study, evaluating the use of ISC-hpNSC® transplantation for the treatment of TBI. The study was conducted at the University of South Florida, Morsani College of Medicine. We demonstrated that animals receiving injections of ISC-hpNSC® displayed the highest levels of improvements in cognitive performance and motor coordination compared to vehicle control treated animals. In February 2019, we published the results of the pre-clinical study in Theranostics, a prestigious peer-reviewed medical journal. The publication titled "Human parthogenetic neural stem cell grafts promote multiple regenerative processes in a traumatic brain injury model" demonstrated that the clinical-grade neural stem cells used in our PD clinical trial, ISC-hpNSC®, significantly improved TBI-associated motor, neurological, and cognitive deficits without any safety issues.

Anti-Aging Cosmetic Market – Skin Care Products

Products that provide anti-aging benefits represent a significant portion of the global facial skincare market. In key regions, such as the United States and Asia, the growth of the facial skincare market is driven by an increase in consumer disposable income and growing popularity of skincare products based on biotechnology, such as human stem cells. Currently this market segment is in its early stages of development and we believe it has a significant growth potential. Our goal is to leverage our leadership in human stem cell and proprietary targeted small molecule technology in order to develop and commercialize advanced anti-aging skincare products for our retail and professional sales channels.

Our wholly-owned subsidiary, Lifeline Skin Care, Inc. ("LSC"), develops, manufactures and markets a line of luxury skincare products with anti-aging benefits that is based on our proprietary human non-embryonic stem cell extract and targeted small molecule technologies.

LSC's products are sold in the United States and internationally through a branded website, several authorized online retailers, and a limited network of professional accounts, including dermatologists, plastic surgeons, medical, day and resort spas.

Biomedical Market – Primary Human Cell Research Products

The global market for human cell systems for use in basic research is extremely large, with continuing anticipated growth. We believe that the following are the main drivers in the research market:

- The need for experimental human cells which are more predictive of human biology than are non-human cells, genetically-modified cell lines or living non-human animals.
- The emerging field of stem-cell-based regenerative medicine and the increase in associated grant money to study stem cells is driving the market not only for stem cell products but also for cell culture products in general.
- The desire to lower the cost of drug development in the pharmaceutical industry. We believe that human cell systems may provide a platform for screening toxic drugs early in the development process, thus avoiding late stage failures in clinical trials and reducing costs.
- The need to eliminate animal products in research reagents that may contaminate future therapeutic products.
- The need for experimental control. Serum-free defined media provides the benefit of experimental control because there are fewer undefined components.
- The need for consistency in experiments that can be given by quality controlled products.
- The need to eliminate in-house formulation of media, obtain human tissue or perform cell isolation.
- The need to reduce animal testing in the consumer products industry.

Our wholly-owned subsidiary Lifeline Cell Technology, LLC ("LCT") develops, manufactures and commercializes over 200 human cell culture products, including frozen human "primary" cells and the reagents (called "media") needed to grow, maintain and differentiate the cells, in order to address this significant market opportunity. LCT's scientists have used a standardized, methodical, scientific approach to basal medium optimization to systematically produce optimized products designed to culture specific human cell types and to elicit specific cellular behaviors. These techniques can also be used to produce products that do not contain non-human animal proteins, a feature desirable to the research and therapeutic markets.

Each LCT cell product is quality tested for the expression of specific markers (to assure the cells are the correct type), proliferation rate, viability, morphology and absence of pathogens. Each cell system also contains associated donor information and all informed consent requirements are strictly followed.

While we have continued to expand our sales and marketing efforts to increase revenue, our commercial operations do not generate sufficient funds to fully support our core therapeutic and research efforts. Underpinning our research into the therapeutic properties of hpSC, we plan to expand our collection of parthenogenetic stem cell lines by creating and banking new clinical-grade hpSC lines at our Oceanside, California facility. We intend to create these new lines according to good tissue practices ("GTP") and current good manufacturing practices ("cGMP") and use them as sources for our own internal development programs and to generate revenue through licensing opportunities. We are actively working with a number of *in vitro* fertility ("IVF") clinics in the southern California region enrolling individuals who are willing to donate oocytes for research purposes to create new hpSC lines.

Corporate Structure

International Stem Cell Corporation is a Delaware corporation which has four wholly owned subsidiaries: International Stem Cell Corporation, a California corporation ("ISC California"), LCT, LSC, and Cyto Therapeutics

Cyto Therapeutics was registered in the state of Victoria, Australia on December 19, 2014 and is a limited proprietary company and a wholly-owned subsidiary of the Company. Cyto Therapeutics is a research and development company for the Therapeutic Market, which is conducting clinical trials in Australia for the use of ISC-hpNSC® in the treatment of Parkinson's disease.

Our principal executive offices are located at 5950 Priestly Drive, Carlsbad, CA 92008, and our telephone number is (760) 940-6383. Our corporate website address is www.internationalstemcell.com, Lifeline Cell Technology's website address is www.lifelinecelltech.com, and Lifeline Skin Care's website address is www.lifelineskincare.com. Information found on, or accessible

through, our websites is not a part of, and is not incorporated into, this Annual Report on Form 10-K. Our common stock is currently quoted on the OTC QB and trades under the symbol "ISCO".

Frequently Asked Questions

What are Stem Cells?

Cells are the basic living units that make up humans, animals, plants and other organisms. Stem cells have two important characteristics that distinguish them from other types of cells. First, they can renew themselves for long periods of time. Second, they are unspecialized and under certain conditions can be induced to become cells with special functions such as metabolically active cells of the liver or transparent and protective cells of the eye. Until recently, scientists have worked with two major kinds of stem cells, *embryonic stem cells* (hESCs) and *adult stem cells* that each has different properties and characteristics. ISCO has developed a third category of stem cells named *parthenogenetic stem cells* (the hpSCs mentioned above) that promise to have significant therapeutic advantages relative to these other types.

What are Pluripotent Stem Cells?

Pluripotent stem cells are able to be differentiated or developed into virtually any other cell made in an organism. Both embryonic and parthenogenetic stem cells are pluripotent. Some scientists are exploring manipulation of adult cells into a potentially pluripotent stage. This type of stem cells is called *induced pluripotent stem cells*.

What are Embryonic Stem Cells?

Embryonic stem cells are derived from embryos at an early stage of development, typically when they are in a structure of a small number of cells called the *blastocyst.* Embryonic stem cells are expanded in a laboratory cell culture process. Once cell lines are established, batches of them can be frozen and shipped to other laboratories for further culture and experimentation.

What are Adult Stem Cells?

An adult stem cell is an undifferentiated cell found among differentiated cells in a tissue or organ. An adult stem cell can renew itself (generally to a lesser degree than can embryonic or parthenogenetic stem cells) and differentiate to a limited number of specialized cell types. These cells can be isolated from different tissues such as the bone marrow, fat tissue, and umbilical cord blood.

Why are Embryonic Stem Cells Important?

Human embryonic stem cells are able to differentiate into virtually any other cell in the body and to reproduce themselves almost indefinitely. In theory, if stem cells can be grown and their development directed in culture, it would be possible to grow cells for the treatment of specific diseases.

An early potential application of human embryonic stem cell technology may be in drug screening and toxicology testing.

The study of human development may also benefit from embryonic stem cell research in that understanding the events that occur at the first stages of development has potential clinical significance for preventing or treating birth defects, infertility and pregnancy loss. The earliest stages of human development have been difficult or impossible to study. Human embryonic stem cells offer insights into developmental events that cannot be studied directly in humans or fully understood through the use of animal models.

What are Parthenogenetic Stem Cells and how are they different?

Parthenogenetic stem cells are pluripotent stem cells created from unfertilized human eggs through a "parthenogenesis" process. Parthenogenesis requires that an unfertilized human egg be "activated" by chemical, physical or other means. Activation results in a non-viable "parthenote" from which pluripotent parthenogenetic stem cell lines can be derived. The cell lines used by ISCO are human parthenogenetic stem cells. Currently, ISCO owns the largest published collection of human parthenogenetic stem cell lines. Our research is based on perfecting proprietary techniques for deriving stem cells through parthenogenesis that result in stem cell lines that have the same capacity to become all cells found in the human body, but do not require use or destruction of a viable human embryo. Furthermore, parthenogenetic stem cells can be produced in a simplified ("homozygous") form that enables each line to be an immunological match for millions of people. We do not obtain stem cells from fetal tissue nor does our technology require the use of discarded frozen human embryos.

Why Not Use Stem Cells Derived from Adults?

There are several approaches now in human clinical trials that utilize adult stem cells. However, these cells have limited availability and limited ability to proliferate in culture as well as risk of genetic manipulation. Therefore, obtaining clinically significant amounts of adult stem cells may prove to be difficult.

Why is Stem Cell Research Controversial?

The sources of some types of stem cells cause social and religious controversy. For example, some scientists obtain stem cells from aborted fetal tissue, causing opposition from those opposed to abortion. Another controversial source of stem cells is residual human embryos (from fertilized human eggs) that remain after vitro fertilization procedures and are used to create embryonic stem cell lines.

Is Stem Cell Research Banned in the United States?

Embryonic stem cell research, in general, is not banned in the United States. Work by private organizations is not limited except by the restrictions applicable to all human research. In addition, Proposition 71 in California, which voters approved in November 2004, specifically allows state funds to be used for stem cell research.

Why Not Use the Currently "Approved" Embryonic Stem Cells Lines?

Most, if not all, human embryonic stem cell lines in research now have complex ("heterozygous") immune compositions that are likely to cause the differentiated cells to be rejected by most patients.

Why Not use Adult Cells Reprogrammed to become Pluripotent Cells?

Induced pluripotent cells ("iPSs") benefit from not being derived from human embryos but may face a number of other limitations such as uncertainty as to which genes are turned on and off. Furthermore, like embryonic stem cells, iPSs have complex ("heterozygous") immune compositions that are likely to cause the differentiated cells to be rejected by most patients.

Ethical Issues

The use of embryonic stem cells derived from fertilized human eggs has created an ethical debate in the United States and around the world. However, since no fertilized human eggs are used in creating our stem cells and no human embryo is being created, used or destroyed, we expect that our parthenogenetic stem cells will be more readily accepted in circumstances where there are ethical concerns with using traditional embryonic stem cells.

We also have licensed worldwide rights to use a technology known as Somatic Cell Nuclear Transfer ("SCNT") to create human stem cells. The President's Council on Bioethics, as reported in the publication "Reproduction and Responsibility—The Regulation of New Biotechnologies 2004," has agreed on a series of recommendations for the use of such technology. Countries such as the United Kingdom have made similar recommendations.

Our Platform Technology

We have developed a proprietary process based on parthenogenesis for the creation of a new type of stem cell that has shown to exhibit the pluripotency and proliferative benefits of embryonic stem cells yet avoid the use or destruction of fertilized human eggs or embryos. Furthermore, since parthenogenetic stem cells can be created with immunogenetically identical ("homozygous") chromosome pairs, each line has potential to be an immune match for tens of millions of patients. If such cells were to be differentiated into functional mature cells they would, theoretically, be universally applicable across a wide range of medical conditions.

We also hold licenses to three other technologies to create human pluripotent stem cells: SCNT technology (as mentioned previously); a technology that may be useful to create induced pluripotent stem cells ("iPS"); and "single blastomere technology" which uses a single cell obtained from a fertilized blastocyst to create an embryonic stem cell line. Each of these technologies has unique cell therapy applications and provides us with a broad base of technologies from which we can operate in the future.

Our Facilities

We have built the capacity to manufacture human cells for use in preclinical and clinical trials and ultimately for therapeutic use through the completion of our cGMP manufacturing laboratories in Oceanside, California and Frederick, Maryland. The Oceanside

laboratory is designed specifically for the derivation of clinical-grade parthenogenetic stem cell lines for our stem cell bank and their differentiated derivatives for future clinical trials.

Our Products

Therapeutic Product Candidates

We are developing different cell types from our stem cells that may result in therapeutic products. We focus on applications where cell and tissue therapy is already proven but where there is an insufficient supply of functional cells or tissue. We believe that the most promising potential clinical applications of our technology are:

- Neural stem cells (ISC-hpNSC®) for treatment of Parkinson's disease and potentially other neurological disorders, such as spinal cord injury, traumatic brain injury and stroke.
- Liver cells ("hepatocytes") that may be used to treat a variety of congenital and acquired liver diseases. Using the same precursor cell that leads to liver cells, it is also possible to create islet cells for potential treatment of diabetes.

Our most advanced project is the neural stem cell program for the treatment of Parkinson's disease. In 2013 we published in Nature Scientific Reports the basis for our patent on a new method of manufacturing neural stem cells which we intend to use to produce the clinical-grade cells necessary for future clinical studies and commercialization. In 2016 we published all important pre-clinical data in two peer-reviewed journals, Cell Transplantation and Nature Scientific Reports. In 2014 we completed the majority of the preclinical research establishing the safety profile of NSC in various animal species including non-human primates. In June 2016 we published the results of a 12-month pre-clinical non-human primate study that demonstrated the safety, efficacy and mechanism of action of the ISC-hpNSC®. In 2017, we began our Phase I trial of ISC-hpNSC®, human parthenogenetic stem cell-derived neural stem cells for the treatment of Parkinson's disease. This trial involves three groups, each with four patients, with each group receiving an increasing amount of ISC-hpNSC via intracerebral transplantation. Patients are evaluated for 12 months (active phase of the study) with an additional 5-year observational follow-up period to assess safety. We reported 12-month results from the first cohort and 6-month interim results of the second cohort at the Society for Neuroscience annual meeting (Neuroscience 2018) in November 2018. In April 2019, we announced the completion of subject enrollment, with the 12th subject receiving a transplantation of the highest dose of cells. There have been no safety signals or serious adverse effects seen to date as related to the transplanted ISC-hpNSC® cells. We anticipate providing full results of the active and follow up periods of the phase I clinical study in the second quarter of 2021.

In August 2014, we began evaluating the use of ISC-hpNSC® for the treatment of ischemic stroke using a rodent model of the disease. In October 2016 we evaluated the use of ISC-hpNSC® for the treatment of TBI using a rodent model of the disease. As we have already developed safety data on NSC from the Parkinson's disease program we believe can leverage such data in a program for the treatment of ischemic stroke.

Each of these product candidates will require extensive preclinical and clinical development and may require specific unforeseen licensing rights obtained at substantial cost before any regulatory approval may be achieved and the products sold for therapeutic use.

Anti-Aging Skin Care Products

As of December 31, 2020 ISCO's LSC subsidiary had developed, launched and was actively selling five distinct skincare products based on its proprietary stem cell technology.

- ProPlus Daily Defense Complex
- ProPlus Night Recovery Moisture Complex
- ProPlus Eye Firming Complex
- ProPlus Neck Firming Complex
- ProPlus Advanced Aquoues Treatment

As of December 31 2020, LSC had developed, launched and sold three skincare products based on the Company's proprietary targeted small molecule technology.

- ProPlus Collagen Booster (Advanced Molecular Serum)
- ProPlus Elastin Booster

- Brightening Toner

Research Products

ISCO's LCT subsidiary develops, manufactures and commercializes over 200 human cell culture products. These products include frozen human "primary" cells and stem cells and the reagents (called "media") needed to grow, maintain and differentiate the cells. LCT's scientists have used a technology called basal medium optimization to systematically produce optimized products designed to culture specific human cell types and to elicit specific cellular behaviors. These techniques also produce products that do not contain non-human animal proteins, a feature desirable to research and therapeutic markets. These human cell-based products are used domestically and internationally by research scientists in pharmaceutical, academic and government research organizations to study human disease and basic cell biology. LCT's products eliminate the need for scientists to create their own cells, media and reagents or attempt to adapt "off the shelf" products to match specific experimental needs and they are superior to using animals or non-human animal cells as research tools because they are more relevant to the study of human disease. Strict quality assurance provides a high level of consistency and standardization of these products. LCT offers products that contain no animal products ("called "Xeno-free" products), allowing researchers to have better control of their experiments and to conduct research using products that ultimately can be more appropriate for therapeutic applications.

Often LCT's research customers use our cell-based research products in their clinical research, eventually adapting them for therapeutic applications. If one of our research products is adopted by a successful producer of therapeutic cells, ISCO may become a supplier to the much larger therapeutic market through LCT's products. This is based on the fact that once regulatory product submissions are made to the FDA and similar authorities, the media and reagents used during development cannot be changed easily after approval. These uses of LCT's products bring opportunities to ISCO for future therapeutic products.

LCT products and applications include:

- Human skin cells and associated reagents for the study of skin disease, toxicology or wound healing.
- Human cells from the heart and blood vessels and associated reagents (VascuLife ®), used by researchers to study cardiovascular disease and cancer.
- Human bronchial and tracheal cell lines for the study of toxicity, cystic fibrosis, asthma and pathogenesis.
- Human mammary epithelial cell lines for the study of breast cancer, three dimensional culture and carcinogen screening.
- Adult stem cells (called mesenchymal stem cells) and the reagents necessary to differentiate them into various tissues, including bone, cartilage and fat. These products are valuable for researchers in the emerging field of regenerative medicine.
- Human prostate cells and specialized medium (ProstaLife™) to study prostate disease including cancer.
- Human renal and bladder cells and associated media (RenaLife™) to study renal and bladder diseases.
- Human corneal cells and associated media (OcuLife™) for the study of corneal disease and as a model of toxicology for consumer product testing.
- Human female reproductive system cells (ReproLife™) for the study of cellular physiology of the reproductive tract, cellular response to infectious agents and other areas of female reproductive system research.
- Human Skeletal Muscle Cells (StemLife Sk™) for the study of muscle cell biology, diabetes, insulin receptor studies, muscle metabolism, muscle tissue repair and myotube development.
- An assortment of many other cell culture reagents and supplements for the growth, staining and freezing of human cells.

Each LCT cell product is quality tested for the expression of specific markers (to assure the cells are the correct type), proliferation rate, viability, morphology and absence of pathogens. Each cell system also contains associated donor information and all informed consent requirements are strictly followed.

LCT's research products are marketed and sold by its internal sales force, LCT brand distributors in Europe and Asia and original equipment manufacturing (OEM) partners, which are then re-branded and sold with OEM partners labels.

Our Markets

Therapeutic Markets

ISCO is currently pursuing a number of scientific development programs designed to lead to the creation of new therapeutic products. We anticipate that, with their superior immune-matching characteristics, our cells will be able to reduce or eliminate the need for immune-suppression drugs and the adverse reactions they trigger in patients.

Parkinson's disease. Parkinson's disease ("PD") is the second most common neurodegenerative disease. According to the Parkinson's Disease Foundation, there are more than one million sufferers in the United States with over $2 billion spent on related medication costs. Currently there is no cure for PD and the improvements in symptoms provided by available PD drugs often diminish with time. Using our proprietary technologies and know-how, we are creating neural stem cells from hpSCs as a potential treatment of PD and potentially other central nervous system disorders, including traumatic brain injury, in order to address this significant market opportunity.

Traumatic Brain Injury. Over 1.7 million people in North America suffer annually from traumatic brain injury, with associated medical costs exceeding $70 billion. According to the World Health Organization, the global incidence for traumatic brain injury is approximately 10 million people annually. According to the CDC, traumatic brain injury is a leading cause of death and disability in the United States, contributing to about 30% of all injury deaths.

Liver disease. Liver disease affects one in ten persons according to the American Liver Foundation, and is one of the top ten leading causes of death in the United States. There are more than 100 individual diseases of the liver; and for people with liver failure, the only effective treatment is full or partial organ transplantation. However, the demand for liver organs far exceeds the number of transplants available. According to the American Liver Foundation, over 16,000 individuals in the United States are waiting for a transplant. Using our proprietary technologies and know-how, we are creating liver cells from hpSCs that may be used to treat a variety of hepatic and metabolic liver diseases to address this significant market opportunity. Importantly, liver cell transplantation has already been used in early stage clinical trials to treat patients with liver failure and has proven especially useful as a "bridge" to keep patients alive until they can receive a whole liver transplant.

Anti-Aging Cosmetic Market

Skin care products play a key role in the daily healthcare routines of many consumers. Greater emphasis on advertising, broader and more integrated distribution networks, raising standards of living in emerging markets, and population aging trends in developed nations are the major factors driving the global demand for skin care products.

The global skin care market is generally comprised of three categories of product -facial care, body care, and special needs products. Top selling products in the facial skincare category include skin brighteners, anti-aging creams and serums, toners, masks, anti-acne and sun protection products.

Facial skincare products that provide anti-aging benefits represent a significant portion of the global skincare market. Increased longevity leads consumers to seek out high quality, technologically advanced skincare products that can help them maintain a youthful appearance. Anti-aging products that are backed by scientific research remain in high demand among sophisticated consumers despite premium prices.

Research Market

The research market for cell systems consists of scientists performing basic and applied research in the biological sciences. Basic research involves the study of cell biology and biochemical pathways. Applied research involves drug discovery, vaccine development, clinical research and cell transplantation. The domestic market can be broken into three segments: (i) academic researchers in universities and privately-funded research organizations; (ii) government institutions such as the National Institutes of Health, the United States Army, the United States Environmental Protection Agency and others; and (iii) industrial organizations such as pharmaceutical companies and consumer product companies. It is estimated that the combined academic and government markets comprise approximately 40% of the total market and that the industrial segment comprises approximately 60%. We believe the following are the main drivers in the research market for commercial cell systems:

- The need for experimental human cells which are more predictive of human biology than are non-human cells or genetically-modified cell lines or living non-human animals.

- The emerging field of stem-cell-based regenerative medicine and the increase in associated grant money to study stem cells is driving the market not only for stem cell products but also for cell culture products in general.
- The desire to lower the cost of drug development in the pharmaceutical industry. We believe that human cell systems may provide a platform for screening toxic drugs early in the development process, thus avoiding late stage failures in clinical trials and reducing costs.
- The need to eliminate animal products in research reagents that may contaminate future therapeutic products.
- The need for experimental control. Serum-free defined media provides the benefit of experimental control because there are fewer undefined components.
- The need for consistency in experiments that can be given by quality controlled products.
- The need to eliminate in-house formulation of media, obtain human tissue or perform cell isolation.
- The need to reduce animal testing in the consumer products industry.

Intellectual Property

Patents

In 2020 ISCO was issued two patents for technology generated by our R&D team. These patents cover small molecule technology utilized in the Company's skin care product lines, and were issued in the Great Britain and Mexico.

In addition, we have obtained exclusive worldwide licenses to patents and patent applications from Astellas Pharma. Our licensed and internally-generated patents provide the intellectual property rights we need to operate in the pluripotent stem cell field and to progress through the stages of creating a therapeutic stem cell product. These stages include the derivation, isolation, expansion and differentiation of stem cells. The intellectual property available to us enables us to create manufacturing methods that eliminate animal proteins in order to satisfy FDA requirements. In addition, we have rights to sell research products derived through our licensed intellectual property in order to generate income. In 2020, one new Astellas licensed patent covering various aspects of cell differentiation was issued in Australia.

The majority of the patents and applications have been filed in the US and in foreign countries through the Patent Cooperation Treaty or by direct country filings in those jurisdictions deemed significant to our operations. Our currently issued patents will expire at various times commencing in 2020.

We have protected our research products and branding through both patents and trademarks. Lifeline Skin Care has filed patent applications covering its proprietary core technologies and methods of using stem cells and targeted small molecules to create skin care products. LSC unique product formulas are protected as trade secrets. ISCO, LCT, and LSC have registered trademarks on their company names, logos and various product names to protect their branding investment. Lifeline Cell Technology's reagent formulations are protected as trade secrets.

The patentability of human cells in countries throughout the world reflects widely differing governmental attitudes. In the United States, hundreds of patents covering human embryonic stem cells have already been granted, including those on which we rely. Certain countries in Europe and Asia have taken the position that hES cells themselves are not patentable. ISCO believes that such restrictions are not appropriate as applied to parthenogenetic stem cells and is working with patent legislators in Europe to create exemptions for human parthenogenetic stem cells. As a result, we plan to file internationally wherever feasible and focus our research strategy on cells that best fit the US and foreign country definitions of patentable cells and technologies.

On December 18, 2014 the Court of Justice of the European Union (CJEU), the European Union's highest court ruled that the Company's core technology patent applications are not covered by the prohibition on patenting embryonic stem cells, removing the final barrier to the approval of ISCO's parthenogenetic stem cell patents in the European Union. This final and definitive ruling by the EU's highest court now formally separates parthenogenetic stem cells from embryonic stem cells, and removes the exclusion from patentability on the former while maintaining the ban on the later.

License Agreements

In May 2005, we entered into three exclusive license agreements ("ACT IP," "Infigen IP," and "UMass IP" or collectively "ACTC agreements") with Astellas Pharma Inc. ("Astellas") for the production of therapeutic products in the fields of diabetes, liver disease, retinal disease and the creation of research products in all fields. In February 2013, each of these license agreements was amended and

restated, pursuant to which we continue to have rights to Astellas Pharma's human cell patent portfolio and non-exclusive rights to future developments in the area of diabetes and liver disease, as well as certain rights to patents covering Single Blastomere technology. A significant feature of the licensed Single Blastomere technology is a method of ethically obtaining human embryonic stem cells that allows us to isolate and differentiate hES stem cells directly from a "blastocyst" without harming the embryo. Using other licensed technology, the hES cells can be immediately differentiated into stem cells capable of expansion and differentiation into other types of cells. Under the terms of the amendments we have also acquired additional exclusive rights in the area of parthenogenesis and the use of parthenogenetically derived stem cells for treatment of human diseases.

The agreements with Astellas further provide that we are no longer obligated to make milestone payments or to meet any minimum research and development requirements. We will no longer pay any royalties related to the ACT IP or Infigen IP, and our obligation to pay a minimum license fee for the UMass IP has been reduced to $75,000 annually, payable in two installments to Astellas.

The agreements continue until the expiration of the last valid claim within the licensed patent rights. Either party to each amended and restated license agreement may terminate the agreement for an uncured breach or we may terminate the agreements at any time with a 30-day written notice.

Research Agreements

ISCO actively pursues sponsored research agreements with local and international research organizations and has established research collaborations with collaborators from Yale University, University of South Florida, Tulane University, University of California, San Diego, The Scripps Research Institute (La Jolla), and the Sanford Burnham Preby Medical Discovery Institute. We are in frequent negotiations to develop collaborative research agreements with additional domestic and international research organizations from both the public and private sector. These agreements allow us to team up with nationally and internationally known research scientists to study stem cell technologies developed or licensed by ISCO for possible use in therapeutic or research fields. In addition to the research collaborations mentioned above, we provide our stem cell lines to researchers at many universities and other research facilities. Ordinarily, the stem cell lines are provided without charge, but we retain the right to either an exclusive or non-exclusive right to use any technology that may be developed that is necessary in order for us to make therapeutic products based on the research that uses our cells.

Competition

The development of therapeutic and diagnostic agents for human disease is intensely competitive. Pharmaceutical companies currently offer a number of pharmaceutical products to treat Parkinson's disease, diabetes, liver diseases, and other diseases for which our technologies may be applicable. Many pharmaceutical and biotechnology companies are investigating new drugs and therapeutic approaches for the same purposes, which may achieve new efficacy profiles, extend the therapeutic window for such products, alter the prognosis of these diseases, or prevent their onset. We believe that our therapeutic products, when and if successfully developed, will compete with these products principally on the basis of improved and extended efficacy and safety and their overall economic benefit to the health care system. We believe that our most significant competitors will be fully integrated pharmaceutical companies and more established biotechnology companies. Smaller companies may also be significant competitors, particularly through collaborative arrangements with large pharmaceutical or biotechnology companies.

Some of our primary competitors in the development of stem cell therapies are BioTime, SanBio, BlueRock Therapeutics, and ReNeuron. Our primary competitors in the skin care market are Obagi, ZO Skin Health, Skinceuticals, SkinMedica (now owned by Allergan), and Murad. In the field of research products, our primary competitors for human cells, media and reagents are Lonza, EMD Millipore, Life Technologies (now owned by Thermo Fisher Scientific), StemCell Technologies, Zen-bio, PromoCell, and Specialty Media. In each of these areas many of our competitors have substantially greater resources and experience than we do.

Sales and Marketing

To date, sales of our research products have been derived primarily through our in-house sales force and via OEM partners and LCT brand distributors in Europe and Asia. Approximately 41% of our total product sales in 2020 were from one customer.

LSC has phased out its retail product line in 2019, with the exception of select cleanser products that were offered to both professional and retail customers. LSC is now offering its ProPLUS product line through its branded website — www.lifelineskincare.com, as well as through a network of select online retailers and a limited number of professional accounts, such as dermatologists, and plastic surgeons. Domestically, we plan to increase distribution of our products through increasing brand awareness, strategic partnerships, and sales promotions.

Government Regulation

Regulation by governmental authorities in the United States and other countries is a significant factor in development, manufacture and marketing of our proposed therapeutic and skin care products and in our ongoing research and product development activities. The nature and extent to which such regulation applies to us will vary depending on the nature of any products that we may develop. We anticipate that many, if not all, of our proposed therapeutic products will require regulatory approval by governmental agencies prior to commercialization. In particular, human therapeutic products are subject to rigorous pre-clinical and clinical testing and other approval procedures of the FDA, and similar regulatory authorities in European and other countries. Various governmental statutes and regulations also govern or influence testing, manufacturing, safety, labeling, storage and recordkeeping related to such products and their marketing. The process of obtaining these approvals and the subsequent compliance with appropriate statutes and regulations require the expenditure of substantial time and money, and there can be no guarantee that approvals will be granted.

We have made extensive progress in obtaining the necessary regulatory approvals of research protocols, informed consent documents and donor protection procedures to obtain oocytes in the United States for the production of our parthenogenetic stem cell bank. These approvals include: federally mandated Institutional Review Board (IRB) and State of California required Stem Cell Research Oversight (SCRO) committee.

FDA Approval Process

Prior to commencement of clinical studies involving humans, pre-clinical testing of new pharmaceutical products is generally conducted on animals in the laboratory to evaluate the potential efficacy and safety of the product candidate. The results of these studies are submitted to the FDA as a part of an Investigational New Drug ("IND") application, which must become effective before clinical testing in humans can begin. Typically, human clinical evaluation involves a time-consuming and costly three-phase process. In Phase I, clinical trials are conducted with a small number of people to establish safety pattern of drug distribution and metabolism within the body. In Phase II, clinical trials are conducted with groups of patients afflicted with a specific disease in order to determine preliminary efficacy, possible dosages and expanded evidence of safety. In some cases, an initial trial is conducted in diseased patients to assess both preliminary efficacy and preliminary safety and patterns of drug metabolism and distribution, in which case it is referred to as a Phase I/II trial. In Phase III, large-scale, multi-center, comparative trials are conducted with patients afflicted with a target disease in order to provide enough data to demonstrate the efficacy and safety required by the FDA. The FDA closely monitors the progress of each of the three phases of clinical testing; and may, at its discretion, re-evaluate, alter, suspend or terminate the testing based upon the data which have been accumulated to that point and its assessment of the risk/benefit ratio to the patient. Monitoring of all aspects of the study to minimize risks is a continuing process. All adverse events must be reported to the FDA.

The results of the pre-clinical and clinical testing on a non-biologic drug and certain diagnostic drugs are submitted to the FDA in the form of a New Drug Application ("NDA") for approval prior to commencement of commercial sales. In the case of vaccines or gene and cell therapies, the results of clinical trials are submitted as a Biologics License Application ("BLA"). In responding to a NDA or BLA, the FDA may grant marketing approval, request additional information or refuse to approve if the FDA determines that the application does not satisfy its regulatory approval criteria. There can be no assurance that approvals will be granted on a timely basis, if at all, for any of our proposed products.

In November 2014, in an important ruling the FDA cleared ISCO's human parthenogenetic stem cells line for investigational clinical use. This was a necessary step in the process of eventually advancing stem cell therapies based on ISCO's core technology into clinical development. Although the Phase I trial for the Parkinson's Disease program is anticipated to be conducted in Australia, and therefore not subject to FDA oversight, any future studies will likely be carried out in the United States where this approval is necessary.

In recognition of the challenges that accompany development of cellular therapy (CT) products, the FDA has recently initiated an expedited review and approval process for promising investigational CTs. The first step in the pathway is submission of a request for Regenerative Medicine Advanced Therapy (RMAT) designation by the sponsor to the FDA, either at the same time as the initial IND filing or by amendment to an active IND (prior to the end-of-phase 2 meeting). Upon grant of RMAT designation by the FDA, the sponsor receives access to a number of benefits, the most advantageous of which is early interactions with senior FDA managers for the purpose of discussing potential surrogate or intermediate clinical endpoints to support accelerated approval requirements. Consideration for accelerated approval, heretofore unavailable to regenerative medicine products, represents a major regulatory advance because it would enable ISCO to market ISC-hpNSC earlier than would be possible through the traditional approval process.

European and Other Regulatory Approval

Whether or not FDA approval has been obtained, approval of a product by comparable regulatory authorities in Europe and other countries will likely be necessary prior to commencement of marketing the product in such countries. The regulatory authorities in each

country may impose their own requirements and may refuse to grant an approval, or may require additional data before granting it, even though the relevant product has been approved by the FDA or another authority. As with the FDA, the regulatory authorities in the European Union ("EU"), Australia and other developed countries have lengthy approval processes for pharmaceutical products. The process for gaining approval in particular countries varies, but generally follows a similar sequence to that described for FDA approval. In Europe, the European Committee for Proprietary Medicinal Products provides a mechanism for EU-member states to exchange information on all aspects of product licensing. The EU has established a European agency for the evaluation of medical products, with both a centralized community procedure and a decentralized procedure, the latter being based on the principle of licensing within one member country followed by mutual recognition by the other member countries.

In Australia, the approval process for commencing Phase 1 and 2 clinical trials resides with Therapeutic Goods Administration (TGA) and the Human Research Ethics Committee, (HREC). Prior to commencing a clinical trial, a sponsor must submit to TGA a CTX or CTN application and must submit to the HREC a study protocol, an investigator brochure and a template informed consent for such clinical trial. The HREC approval process generally takes four to eight weeks.

Other Regulations

We are also subject to various United States federal, state, local and international laws, regulations and recommendations relating to the treatment of oocyte donors, the manufacturing environment under which human cells for therapy are derived, safe working conditions, laboratory and manufacturing practices and the use and disposal of hazardous or potentially hazardous substances, including radioactive compounds and infectious disease agents, used in connection with our research work. We cannot accurately predict the extent of government regulation which might result from future legislation or administrative action.

Other Regulations for Lifeline Skin Care

The Federal Food, Drug and Cosmetic Act ("FFDCA") and the Fair Packaging and Labeling Act ("FPLA") provide the regulatory framework for selling cosmetics. The FFDCA oversees the safety of cosmetics. The FPLA ensures that the labeling is not false or misleading and includes all relevant information in a prominent and conspicuous manner.

Safety and efficacy testing of the products is performed by independent third party testing organization.

Information about our Executive Officers

For information concerning our executive officers, see Part III, Item 10 of this Annual Report on Form 10-K.

Human Capital

As of December 31, 2020, including our 3 executive officers, we had 33 full-time and 2 part-time employees. None of our employees are represented by labor unions or covered by collective bargaining agreements.

The Company considers its diverse and innovative workforce to be one of its most valuable resources. In recognition of our employees' contributions to the Company's business objectives and long-term research and business success, we strive to provide a dynamic, safe, and inclusive work environment that enables each employee to develop professionally as part of the team, as well as be rewarded for individual initiative. In order to achieve this goal, we focus on the following aspects of human capital management:

Corporate Values and Ethics

The key elements of our corporate value system are described in our Code of Business Conduct Policy (the "Business Code"), which provides uniform guidance to all our employees regarding expectations for proper workplace behavior and ethical decision making. Our Board of Directors adopted and regularly reviews the Code of Business Conduct, which applies to all of our employees, officers and directors of the Company.

The values outlined in the Business Code, including personal honesty, professional integrity, and organizational transparency, are vital to achieving our business and research objectives, as well as to serving our stakeholders. We have established a reporting hotline that enables employees to file anonymous reports of any suspected violations of the Business Code or other policies.

Workplace Diversity and Inclusion

As a truly international team, we value and celebrate unique talents, backgrounds and perspectives each employee contributes to achieving our corporate and research objectives. As an equal opportunity employer, we strive to ensure we evaluate a diverse group of candidates for every role with the goal of identifying the best possible candidates to fill open positions within the Company.

Compensation & Benefits

Our compensation and benefits programs, with oversight from the Compensation Committee of our Board of Directors, are designed to attract, retain and reward employees through competitive salaries, incentive bonus and stock option grant eligibility, a 401(k) Plan, healthcare and insurance benefits, paid time off, family leave, and employee assistance programs.

Item 1A. RISK FACTORS

You should carefully consider the risks described below as well as other information provided to you in this document, including information in the section of this document entitled "Forward Looking Statements". If any of the following risks actually occur, our business, financial condition or results of operations could be materially adversely affected, the value of our common stock could decline, and you may lose all or part of your investment.

Risks Related to Our Business

Our business is subject to risks arising from epidemic diseases, such as the recent global outbreak of the COVID-19 coronavirus.

The outbreak of the coronavirus, COVID-19, which has been declared by the World Health Organization to be a pandemic has spread across the globe and is impacting worldwide economic activity. A pandemic, including COVID-19 or other public health epidemic, poses the risk that we or our employees, contractors, customers, suppliers, third party shipping carriers, government and other partners may be prevented from or limited in their ability to conduct business activities for an indefinite period of time, including due to the spread of the disease within these groups or due to shutdowns that may be requested or mandated by governmental authorities. The impact that COVID-19 could have on our business, the continued spread of COVID-19 and the measures taken by the governments of states and countries affected could disrupt, among other things, the supply chain and the manufacture or shipment of our products. Our laboratory operations, including laboratory employees, may be subject to closure or shut down due to the spread of the disease within these individuals, or as part of a larger scale government recommendation or mandate. Any disruption in our laboratory operations would have a material adverse effect on our business and would impede our ability to manufacture and ship products to our customers in a timely manner, or at all. Additionally, the demand for our skincare products may continue to significantly decline as COVID-19 continues to spread, including as a result of prioritization of customer financial resources toward essential household items or government-imposed quarantines that impede the ability of our customers to purchase our professional skincare product line through spas and medical offices that may not be considered essential businesses and are mandated to close for an indefinite amount of time. The occurrence of any of the foregoing events could have a material adverse effect on our business, financial condition and results of operations. The COVID-19 outbreak and mitigation measures have had and may continue to have an adverse impact on global economic conditions which could have an adverse effect on our business and financial condition. The extent to which the COVID-19 outbreak continues to affect our results will depend on future developments that are highly uncertain and cannot be predicted, including new information that may emerge concerning the severity of the virus and the actions to contain its impact.

Our business is at an early stage of development and we may not develop therapeutic products that can be commercialized.

Our business is at an early stage of development. We do not have any products in late stage clinical trials. We are still in the early stages of identifying and conducting research on potential therapeutic products. Our potential therapeutic products will require significant research and development and pre-clinical and clinical testing prior to regulatory approval in the United States and other countries. We may not be able to obtain regulatory approvals, enter new and later stage clinical trials for any of our product candidates, or commercialize any products. Our product candidates may prove to have undesirable and unintended side effects or other characteristics adversely affecting their safety, efficacy or cost effectiveness that could prevent or limit their use. Any product using any of our technology may fail to provide the intended therapeutic benefits, or achieve therapeutic benefits equal to or better than the standard of treatment at the time of testing or production.

We have a history of operating losses, do not expect to be profitable in the near future.

We have not generated any profits since our entry into the biotechnology business and have incurred significant operating losses. We expect to incur additional operating losses for the foreseeable future and we expect our operating losses to increase significantly. Our commercial businesses have not generated revenues in amounts to support our research and development efforts, and we may not achieve that level of revenues in the foreseeable future.

We have expended substantial funds to develop our technologies, products and product candidates. Based on our financial condition, recurring losses and projected spending, which raise substantial doubt about our ability to continue as a going concern. If we were unable to continue as a going concern, the values we receive for our assets on liquidation or dissolution could be significantly lower than the values reflected in our consolidated financial statements.

We will need additional capital to conduct our operations and develop our products and our ability to obtain the necessary funding is uncertain.

During the year ended December 31, 2020, we used a significant amount of cash to finance our continued operations, and we need to obtain significant additional capital resources in order to develop products going forward. We may not be successful in maintaining

our normal operating cash flow and the timing of our capital expenditures may not result in cash flows sufficient to sustain our operations through the next twelve months. If financing is not sufficient and additional financing is not available or available only on terms that are detrimental to our long-term survival, it could have a major adverse effect on our ability to pursue our clinical research and product development programs, and could ultimately affect our ability to continue to function. The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying our estimates for capital needs in 2021 and beyond;
- scientific progress in our research and development programs;
- the magnitude and scope of our research and development programs and our ability to establish, enforce and maintain strategic arrangements for research, development, clinical testing, manufacturing and marketing;
- our progress with pre-clinical development and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims;
- the number and type of product candidates that we pursue;
- the development of major public health concerns, including the novel coronavirus outbreak or other pandemics arising globally, and the current and future impact of it and COVID-19 on our business operations and funding requirements; and
- the extent, if any, of forgiveness of our loans under the SBA Paycheck Protection Program.

Additional financing through strategic collaborations, public or private equity or debt financings or other financing sources may not be available on acceptable terms, or at all. Additional equity financing could result in significant dilution to our stockholders, and any debt financings will likely involve covenants restricting our business activities. Additional financing may not be available on acceptable terms, or at all. Further, if we obtain additional funds through arrangements with collaborative partners, these arrangements may require us to relinquish rights to some of our technologies, product candidates or products that we might otherwise seek to develop and commercialize on our own. If sufficient capital is not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or product development initiatives, any of which could have a material adverse effect on our financial condition or business prospects.

We have limited clinical testing and regulatory capabilities, and human clinical trials are subject to extensive regulatory requirements, very expensive, time-consuming and difficult to design and implement. Our products may fail to achieve necessary safety and efficacy endpoints during clinical trials, which may limit our ability to generate revenues from therapeutic products.

Due to the relatively early stage of our therapeutic products and stem cell therapy-based systems, we have not yet invested significantly in internal clinical testing and regulatory capabilities, including for human clinical trials. We cannot assure you that we will be able to invest or develop resources for these capabilities successfully or as expediently as necessary. In particular, human clinical trials can be very expensive and difficult to design and implement, in part because they are subject to rigorous regulatory requirements. The clinical trial process is time consuming. We estimate that clinical trials of our product candidates will take at least several years to complete. Furthermore, failure can occur at any stage of the trials, and we could encounter problems that cause us to abandon or repeat clinical trials. The commencement and completion of clinical trials may be affected by several factors, including:

- unforeseen safety issues;
- determination of dosing issues;
- inability to demonstrate effectiveness during clinical trials;
- slower than expected rates of patient recruitment;
- inability to monitor patients adequately during or after treatment;
- competitive developments, including changes in the standard of care treatment for an indication;
- inability or unwillingness of medical investigators to follow our clinical protocols; and
- developments related to the coronavirus outbreak and impact of it and COVID-19 on the costs and timing associated with the conduct of our clinical trials and other related activities.

In addition, we or the FDA (or other applicable regulatory agency) may suspend our clinical trials at any time if it appears that we are exposing participants to unacceptable health risks or if the FDA or other regulatory agency finds deficiencies in our submissions or the conduct of these trials.

Patents held by other persons may result in infringement claims against us that are costly to defend and which may limit our ability to use the disputed technologies and prevent us from pursuing research and development or commercialization of potential products.

A number of pharmaceutical, biotechnology and other companies, universities and research institutions have filed patent applications or have been issued patents relating to cell therapy, stem cells, and other technologies potentially relevant to or required by our expected products. We cannot predict which, if any, of such applications will issue as patents or the claims that might be allowed. We are aware that a number of companies have filed applications relating to stem cells. We are also aware of a number of patent applications and patents claiming use of stem cells and other modified cells to treat disease, disorder or injury.

If third party patents or patent applications contain claims infringed by either our licensed technology or other technology required to make and use our potential products and such claims are ultimately determined to be valid, we might not be able to obtain licenses to these patents at a reasonable cost, if at all, or be able to develop or obtain alternative technology. If we are unable to obtain such licenses at a reasonable cost, we may not be able to develop some products commercially. We may be required to defend ourselves in court against allegations of infringement of third party patents. Patent litigation is very expensive and could consume substantial resources and create significant uncertainties. An adverse outcome in such a suit could subject us to significant liabilities to third parties, require disputed rights to be licensed from third parties, or require us to cease using such technology.

The outcome of pre-clinical, clinical and product testing of our products is uncertain, and if we are unable to satisfactorily complete such testing, or if such testing yields unsatisfactory results, we may be unable to sell our proposed products.

Before obtaining regulatory approvals for the commercial sale of any potential human products, our products will be subjected to extensive pre-clinical and clinical testing to demonstrate their safety and efficacy in humans. The clinical trials of our prospective products, or those of our licensees or collaborators, may not demonstrate the safety and efficacy of such products at all, or to the extent necessary to obtain appropriate regulatory approvals. Similarly, the testing of such prospective products may not be completed in a timely manner, if at all, or only after significant increases in costs, program delays or both, all of which could harm our ability to generate revenues. In addition, our prospective products may not prove to be more effective for treating disease or injury than current therapies. Accordingly, we may have to delay or abandon efforts to research, develop or obtain regulatory approval to market our prospective products. The failure to adequately demonstrate the safety and efficacy of a therapeutic product under development could delay or prevent regulatory approval of the product and could harm our ability to generate revenues, operate profitably or produce any return on an investment in us.

Even if we are successful in developing a therapeutic application using our cell technologies, it is unclear whether cell therapy can serve as the foundation for a commercially viable and profitable business.

Stem cell technology is rapidly developing and could undergo significant change in the future. Such rapid technological development could result in our technologies becoming obsolete. While our product candidates appear promising, they may fail to be successfully commercialized for numerous reasons, including, but not limited to, competing technologies for the same indications. There can be no assurance that we will be able to develop a commercially successful therapeutic application for our stem cell technologies.

Moreover, advances in other treatment methods or in disease prevention techniques could significantly reduce or entirely eliminate the need for our cell therapy services, planned products and therapeutic efforts. There is no assurance that cell therapies will achieve the degree of success envisioned by us in the treatment of disease. Additionally, technological or medical developments may materially alter the commercial viability of our technology or services and require us to incur significant costs to replace or modify programs in which we have a substantial investment. We are focused on cell therapy, and if this field is substantially unsuccessful, this could jeopardize our success or future results. The occurrence of any of these factors may have a material adverse effect on our business, operating results and financial condition.

Our competition includes fully integrated biotechnology and pharmaceutical companies that have significant advantages over us.

The market for therapeutic stem cell products is highly competitive. We expect that our most significant competitors will be fully integrated and more established pharmaceutical and biotechnology companies. These companies are developing stem cell-based products and they have significantly greater capital resources and research and development, manufacturing, testing, regulatory compliance, and marketing capabilities. Many of these potential competitors are further along in the process of pharmaceutical product development and also operate large, company-funded research and development programs. As a result, our competitors may develop

more competitive or affordable products, or achieve earlier patent protection or product commercialization than we are able to achieve. Competitive products may render any products or product candidates that we develop uneconomic or obsolete.

If competitors develop and market products that are more effective, safer, or less expensive than our product candidates or offer other advantages, our commercial prospects will be limited.

Our cell therapy development programs face, and will continue to face, intense competition from pharmaceutical, biopharmaceutical and biotechnology companies, as well as numerous academic and research institutions and governmental agencies engaged in drug discovery activities or funding, both in the United States and abroad. Some of these competitors are pursuing the development of drugs and other therapies that target the same diseases and conditions that we are targeting with our product candidates.

As a general matter, we also face competition from many companies that are researching and developing cell therapies. Many of these companies have financial and other resources substantially greater than ours. In addition, many of these competitors have significantly greater experience in testing pharmaceutical and other therapeutic products, obtaining FDA and other regulatory approvals, and marketing and selling. If we ultimately obtain regulatory approval for any of our product candidates, we also will be competing with respect to manufacturing efficiency and marketing capabilities, areas in which we have limited or no commercial-scale experience. Mergers and acquisitions in the pharmaceutical and biotechnology industries may result in even more resources being concentrated by our competitors. Competition may increase further as a result of advances made in the commercial applicability of our technologies and greater availability of capital for investment in these fields.

Restrictive and extensive government regulation could slow or hinder our production of a cellular product.

The research and development of stem cell therapies is subject to and restricted by extensive regulation by governmental authorities in the United States and other countries. The process of obtaining FDA and other necessary regulatory approvals is lengthy, expensive and uncertain. We may fail to obtain the necessary approvals to continue our research and development, which would hinder our ability to manufacture or market any future product.

The development and commercialization of our product candidates is subject to extensive regulation by the FDA and other regulatory agencies in the United States and abroad, and the failure to receive regulatory approvals for our product candidates would likely have a material and adverse effect on our business and prospects.

The process of obtaining FDA and other regulatory approvals is expensive, generally takes many years and is subject to numerous risks and uncertainties, particularly with complex and/or novel product candidates such as our product candidates. Changes in regulatory approval policies during the development period, changes in or the enactment of additional statutes or regulations, or changes in regulatory review for each submitted product application, may cause delays in the approval or rejection of an application or may make it easier for our competitors to gain regulatory approval to enter the marketplace. Ultimately, the FDA and other regulatory agencies have substantial discretion in the approval process and may refuse to accept any application or may decide that our product candidate data are insufficient for approval without the submission of additional pre-clinical, clinical or other studies. In addition, varying agency interpretations of the data obtained from pre-clinical and clinical testing could delay, limit or prevent regulatory approval of a product candidate. Any regulatory approval we ultimately obtain may be limited or subject to restrictions or post-approval commitments that render the approved product not commercially viable.

Any of the following factors, among others, could cause regulatory approval for our product candidates to be delayed, limited or denied:

- the product candidates require significant clinical testing to demonstrate safety and effectiveness before applications for marketing approval can be filed with the FDA and other regulatory authorities;
- data obtained from pre-clinical and nonclinical animal testing and clinical trials can be interpreted in different ways, and regulatory authorities may not agree with our respective interpretations or may require us to conduct additional testing;
- negative or inconclusive results or the occurrence of serious or unexpected adverse events during a clinical trial could cause us to delay or terminate development efforts for a product candidate; and/or
- FDA and other regulatory authorities may require expansion of the size and scope of the clinical trials;
- a pandemic, epidemic or outbreak of a contagious disease, such as the ongoing global pandemic of the novel coronavirus COVID-19 may refocus the FDA and other regulatory authorities to clinical trials that are of the utmost need.

Any difficulties or failures that we encounter in securing regulatory approval for our product candidates would likely have a substantial adverse impact on our ability to generate product sales, and could make any search for a collaborative partner more difficult.

Research in the field of embryonic stem cells is currently subject to strict government regulations, and our operations could be restricted or outlawed by any legislative or administrative efforts impacting the use of nuclear transfer technology or human embryonic material.

Significant portions of our business are focused on human cell therapy, which includes the production of human differentiated cells from stem cells and involves human oocytes. Although our focus is on parthenogenetic stem cells derived from unfertilized oocytes, certain aspects of that work may involve the use of embryonic stem cells. Research utilizing embryonic stem cells is controversial, and currently subject to intense scrutiny, particularly in the area of the use of human embryonic material.

Federal law is not as restrictive regarding the use of federal funds for human embryonic cell research, commonly referred to as hES cell research as it once was. However, federal law does prohibit federal funding for creation of parthenogenetic stem cells. Our operations may also be restricted by future legislative or administrative efforts by politicians or groups opposed to the development of hES cell technology, parthenogenetic cell technology or nuclear transfer technology. Further, future legislative or administrative restrictions could, directly or indirectly, delay, limit or prevent the use of hES technology, parthenogenetic technology, or nuclear transfer technology, the use of human embryonic material, or the sale, manufacture or use of products or services derived from nuclear transfer technology or hES or parthenogenetic technology.

We may be unsuccessful in our efforts to comply with applicable federal, state and international laws and regulations, which could result in loss of licensure, certification or accreditation or other government enforcement actions or impact our ability to secure regulatory approval of our product candidates.

Although we seek to conduct our business in compliance with applicable governmental healthcare laws and regulations, these laws and regulations are exceedingly complex and often subject to varying interpretations. The cell therapy industry is the topic of significant government interest, and thus the laws and regulations applicable to our business are subject to frequent change and/or reinterpretation. As such, there can be no assurance that we will be able, or will have the resources, to maintain compliance with all such healthcare laws and regulations. Failure to comply with such healthcare laws and regulations, as well as the costs associated with such compliance or with enforcement of such healthcare laws and regulations, may have a material adverse effect on our operations or may require restructuring of our operations or impair our ability to operate profitably.

Our manufacture of certain cellular therapy products triggers additional FDA requirements applicable to hESCs which are regulated as a drug, biological product, or medical device. FDA's GMP regulations govern the manufacture, processing, packaging and holding of cell therapy products regulated as drugs. FDA's Quality System Regulation, or QSR, similarly governs the manufacture, processing, packaging and holding of cell therapy products regulated as medical devices. We must comply with GMP or QSR requirements including quality control, quality assurance and the maintenance of records and documentation for certain products. We may be unable to comply with these GMP or QSR requirements and with other FDA, state and foreign regulatory requirements. These requirements may change over time and we or third-party manufacturers may be unable to comply with the revised requirements.

We will continue to be subject to extensive FDA regulation following any product approvals, and if we fail to comply with these regulations, we may suffer a significant setback in our business.

Even if we are successful in obtaining regulatory approval of our product candidates, we will continue to be subject to the requirements of and review by, the FDA and comparable regulatory authorities in the areas of manufacturing processes, post-approval clinical data, adverse event reporting, labeling, advertising and promotional activities, among other things. In addition, any marketing approval we receive may be limited in terms of the approved product indication or require costly post-marketing testing and surveillance. Discovery after approval of previously unknown problems with a product, manufacturer or manufacturing process, or a failure to comply with regulatory requirements, may result in actions such as:

- warning letters or other actions requiring changes in product manufacturing processes or restrictions on product marketing or distribution;
- product recalls or seizures or the temporary or permanent withdrawal of a product from the market; and
- fines, restitution or disgorgement of profits or revenue, the imposition of civil penalties or criminal prosecution.

The occurrence of any of these actions would likely cause a material adverse effect on our business, financial condition and results of operations.

Health care companies have been the subjects of federal and state investigations, and we could become subject to investigations in the future.

Both federal and state government agencies have heightened civil and criminal enforcement efforts. There are numerous ongoing investigations of health care companies, as well as their executives and managers. In addition, amendments to the Federal False Claims Act, have made it easier for private parties to bring "*qui tam*" (whistleblower) lawsuits against companies under which the whistleblower may be entitled to receive a percentage of any money paid to the government. The Federal False Claims Act provides, in part, that an action can be brought against any person or entity that has knowingly presented, or caused to be presented, a false or fraudulent request for payment from the federal government, or who has made a false statement or used a false record to get a claim approved. The government has taken the position that claims presented in violation of the federal anti-kickback law, Stark Law or other healthcare-related laws, including laws enforced by the FDA, may be considered a violation of the Federal False Claims Act. Penalties include substantial fines for each false claim, plus three times the amount of damages that the federal government sustained because of the act of that person or entity and/or exclusion from the Medicare program. In addition, a majority of states have adopted similar state whistleblower and false claims provision. Any future investigations of our business or executives could cause us to incur substantial costs, and result in significant liabilities or penalties, as well as damage to our reputation.

Restrictions on the use of human stem cells, and the ethical, legal and social implications of that research, could prevent us from developing or gaining acceptance for commercially viable products in these areas.

Although our stem cells are derived from unfertilized human eggs through a process called "parthenogenesis" that can produce cells suitable for therapy, but are believed to be incapable of producing a human being, such cells are nevertheless often incorrectly referred to as "embryonic" stem cells. Because the use of human embryonic stem cells gives rise to ethical, legal and social issues regarding the appropriate use of these cells, our research related to human parthenogenetic stem cells could become the subject of adverse commentary or publicity and some political and religious groups may still raise opposition to our technology and practices. In addition, many research institutions, including some of our scientific collaborators, have adopted policies regarding the ethical use of human embryonic tissue, which, if applied to our procedures, may have the effect of limiting the scope of research conducted using our stem cells, thereby impairing our ability to conduct research in this field. In some states, use of embryos as a source of stem cells is prohibited.

To the extent we utilize governmental grants in the future, the governmental entities involved may retain certain rights in technology that we develop using such grant money and we may lose the revenues from such technology if we do not commercialize and utilize the technology pursuant to established government guidelines.

Certain of our licensors' research have been or are being funded in part by government grants. Our research may also be government-funded in the future. In connection with certain grants, the governmental entity involved retains various rights in the technology developed with the grant. These rights could restrict our ability to fully capitalize upon the value of this research by reducing total revenues that might otherwise be available since such governmental rights may give the government the right to practice the invention without payment of royalties if we do not comply with applicable requirements.

We rely on parthenogenesis, cell differentiation and other stem cell technologies that we may not be able to successfully develop, which may prevent us from generating revenues, operating profitably or providing investors any return on their investment.

We have concentrated our research on our parthenogenesis, cell differentiation and stem cell technologies, and our ability to operate profitably will depend on being able to successfully implement or develop these technologies for human applications. These are emerging technologies with, as yet, limited human applications. We cannot guarantee that we will be able to successfully implement or develop our nuclear transfer, parthenogenesis, cell differentiation and other stem cell technologies or that these technologies will result in products or services with any significant commercial utility. We anticipate that the commercial sale of such products or services, and royalty/licensing fees related to our technology, would be an additional source of revenues.

If we are unable to keep up with rapid technological changes in our field or compete effectively, we will be unable to operate profitably.

We are engaged in activities in the biotechnology field, which is characterized by extensive research efforts and rapid technological progress. If we fail to anticipate or respond adequately to technological developments, our ability to operate profitably could suffer. Research and discoveries by other biotechnology, agricultural, pharmaceutical or other companies may render our technologies or potential products or services uneconomical or result in products superior to those we develop. Similarly, any technologies, products or services we develop may not be preferred to any existing or newly developed technologies, products or services.

We may not be able to protect our proprietary technology, which could harm our ability to operate profitably.

The biotechnology, cosmetic, and pharmaceutical industries place considerable importance on obtaining patent and trade secret protection for new technologies, products and processes. Our success will depend, to a substantial degree, on our ability to obtain and enforce patent protection for our products, preserve any trade secrets and operate without infringing the proprietary rights of others. We cannot assure you that:

- we will succeed in obtaining any patents, obtain them in a timely manner, or that the breadth or degree of protection that any such patents will protect our interests;
- the use of our technology will not infringe on the proprietary rights of others;
- patent applications relating to our potential products or technologies will result in the issuance of any patents or that, if issued, such patents will afford adequate protection to us or will not be challenged, invalidated or infringed; or
- patents will not be issued to other parties, which may be infringed by our potential products or technologies.

We are aware of certain patents that have been granted to others and certain patent applications that have been filed by others with respect to nuclear transfer and other stem cell technologies. The fields in which we operate have been characterized by significant efforts by competitors to establish dominant or blocking patent rights to gain a competitive advantage, and by considerable differences of opinion as to the value and legal legitimacy of competitors' purported patent rights and the technologies they actually utilize in their businesses.

Considerable research in the areas of stem cells, cell therapeutics and regenerative medicine is being performed in countries outside of the United States, and a number of our competitors are located in those countries. The laws protecting intellectual property in some of those countries may not provide adequate protection to prevent our competitors from misappropriating our intellectual property.

Our business is highly dependent upon maintaining licenses with respect to key technology.

Although our primary focus relates to intellectual property we have developed internally, some of the patents we utilize are licensed to us by Astellas Pharma, which has licensed some of these from other parties, including the University of Massachusetts ("UMass"). These licenses are subject to termination under certain circumstances (including, for example, our failure to make minimum royalty payments). The restriction or loss of any of such licenses, or the conversion of such licenses to non-exclusive licenses, could adversely affect our operations and/or enhance the prospects of our competitors.

Although our licenses with Astellas allow us to cure any defaults under the underlying licenses to them and to take over the patents and patents pending in the event of default by Astellas, the cost of such remedies could be significant and we might be unable to adequately maintain these patent positions. If so, such inability could have a material adverse effect on our business. Some of these licenses also contain restrictions (e.g., limitations on our ability to grant sublicenses) that could materially interfere with our ability to generate revenue through collaborative relationships or other transactions that involve the licensing or sale to third parties of important and valuable technologies that we have, for strategic reasons, elected not to pursue directly. In the future we may require further licenses to complete and/or commercialize our proposed products. We may not be able to acquire any such licenses on a commercially-viable basis.

We have experienced in the past and may experience in the future network or system failures, or service interruptions, including cybersecurity attacks, or other technology risks. Our inability to protect our systems and data against such risks could harm our business and reputation.

Our ability to provide uninterrupted and high levels of service depends upon the performance of our internal network, systems and related infrastructure, and those of our third-party vendors. Any significant interruptions in, or degradation of, the quality of the services, including infrastructure storage and support, that these third parties provide to us could severely harm our business and reputation and lead to the loss of customers and revenue. Our internal network, systems, and related infrastructure, in addition to the networks, systems, and related infrastructure of our third-party technology vendors, may be vulnerable to computer viruses and other malware that infiltrate such systems and networks, as well as physical or electronic security breaches, natural disasters, and similar disruptions. They have been and may continue to be the target of attempts to identify and exploit network and system vulnerabilities, penetrate or bypass security measures in order to interrupt or degrade the quality of the services we receive or provide, or otherwise gain unauthorized access to our networks and systems or those of our third-party vendors. These vulnerabilities or other attempts at access may result from, or be caused by, human error or technology failures, however, they may also be the product of malicious actions by third parties intending to harm our business. The methods that may be used by these third parties to cause interruptions or failures or to obtain unauthorized access to information change frequently, are difficult to detect, evolve rapidly, and are increasingly sophisticated and hard to defend against.

Although we have not incurred material losses or liabilities as a result of security breaches or attempted security breaches and continue to invest in security measures, we cannot be certain that our defensive measures, and those employed by our third-party vendors, will be sufficient to defend against all such current and future methods.

Our careful vetting of third parties to provide technology services and the contractual requirements related to the security that we impose on our third-party vendors who have access to this data may not be sufficient to protect us from network or system failures or service interruptions.

Any actual or perceived security breach, whether experienced by us or a third-party vendor; the reporting or announcement of such an event, or reports of perceived security vulnerabilities of our systems or the systems of our third-party service providers whether accurate or not; or our failure or perceived failure to respond or remediate an event or make adequate or timely disclosures to the public, regulatory or law enforcement agencies following any such event may be material and lead to harm to our financial condition, business reputation, and prospects of future business due to, among other factors: loss of customer confidence arising from interruptions or outages, delays, failure to meet contractual obligations, and loss of data or public release of confidential data; increase regulatory scrutiny on us; compromise our trade secret and intellectual property; expose us to costly uninsured liabilities such as material fines, penalties, liquidated damages, and overall margin compression due to renegotiation of contracts on less favorable terms or loss of business; liability for claims relating to misuse of personal information in violation of contractual obligations or data privacy laws; and potential theft of our intellectual property.

A security breach could occur and persist for an extended period of time without detection. We expect that any investigation of a security breach could take a substantial amount of time, and during such time we may not necessarily know the extent of the harm or how best to remediate it, and certain errors or actions could be repeated or compounded before they are discovered and remediated, all of which could further increase the costs and consequences of such a breach. Further, detecting and remediating such incidents may require specialized expertise and there can be no assurance that we will be able to retain or hire individuals who possess, or otherwise internally develop, such expertise. Our remediation efforts therefore may not be successful. The inability to implement, maintain, and upgrade adequate safeguards could have a material and adverse impact on our business, financial condition and results of operations. Moreover, there could be public announcements regarding any data security-related incidents and any steps we take to respond to or remediate such incidents.

The occurrence of any such failure may also subject us to costly lawsuits, claims for contractual indemnities, as well as divert valuable management, research and development, information technology, and marketing resources toward addressing these issues and delay our ability to achieve our strategic initiatives. In addition, we gather, as permitted by law, non-public, personally-identifiable financial information from customers, such as names, addresses, telephone numbers, bank and credit card account numbers and financial transaction information, and the compromise of such data, which may subject us to fines and other related costs of remediation.

Certain of our technology may not be subject to protection through patents, which leaves us vulnerable to theft of our technology.

Certain parts of our know-how and technology are not patentable or are trade secrets. To protect our proprietary position in such know-how and technology, we intend to require all employees, consultants, advisors and collaborators to enter into confidentiality and invention ownership agreements with us. These agreements may not provide meaningful protection for our trade secrets, know-how or other proprietary information in the event of any unauthorized use or disclosure. Further, in the absence of patent protection, competitors who independently develop substantially equivalent technology may harm our business.

We depend on our collaborators to help us develop and test our proposed products, and our ability to develop and commercialize products may be impaired or delayed if collaborations are unsuccessful.

Our strategy for the development, clinical testing and commercialization of our proposed products requires that we enter into collaborations with corporate partners, licensors, licensees and others. We are dependent upon the subsequent success of these other parties in performing their respective responsibilities and the continued cooperation of our partners. Our collaborators may not cooperate with us or perform their obligations under our agreements with them. We cannot control the amount and timing of our collaborators' resources that will be devoted to our research and development activities related to our collaborative agreements with them. Our collaborators may choose to pursue existing or alternative technologies in preference to those being developed in collaboration with us.

Under agreements with collaborators, we may rely significantly on such collaborators to, among other things:

- design and conduct advanced clinical trials in the event that we reach clinical trials;
- fund research and development activities with us;

- pay us fees upon the achievement of milestones; and
- market with us any commercial products that result from our collaborations.

The development and commercialization of potential products will be delayed if collaborators fail to conduct these activities in a timely manner, or at all. In addition, our collaborators could terminate their agreements with us and we may not receive any development or milestone payments. If we do not achieve milestones set forth in the agreements, or if our collaborators breach or terminate their collaborative agreements with us, our business may be materially harmed.

Contractual arrangements with licensors or collaborators may require us to pay royalties or make other payments related to the development of a product candidate, which would adversely affect the level of our future revenues and profits.

Even if we obtain all applicable regulatory approvals and successfully commercialize one or more of our cell therapy candidates, contractual arrangements between us and a licensor, collaborator or other third party in connection with the respective product may require that we make royalty or other payments to the respective third party, and as a result we would not receive all of the revenue derived from commercial sales of such product.

Our reliance on the activities of our non-employee consultants, research institutions, and scientific contractors, whose activities are not wholly within our control, may lead to delays in development of our proposed products.

We rely extensively upon and have relationships with scientific consultants at academic and other institutions, some of whom conduct research at our request, and other consultants with expertise in clinical development strategy or other matters. These consultants are not our employees and may have commitments to, or consulting or advisory contracts with, other entities that may limit their availability to us. We have limited control over the activities of these consultants and, except as otherwise required by our collaboration and consulting agreements to the extent they exist, can expect only limited amounts of their time to be dedicated to our activities. These research facilities may have commitments to other commercial and non-commercial entities. We have limited control over the operations of these laboratories and can expect only limited amounts of time to be dedicated to our research goals.

We may not be able to obtain third party patient reimbursement or favorable product pricing, which would reduce our ability to operate profitably.

Our ability to successfully commercialize certain of our proposed products in the human therapeutic field may depend to a significant degree on patient reimbursement of the costs of such products and related treatments at acceptable levels from government authorities, private health insurers and other organizations, such as health maintenance organizations. Reimbursement in the United States or foreign countries may not be available for any products we may develop, and, if available, may be decreased in the future. Also, reimbursement amounts may reduce the demand for, or the price of, our products with a consequent harm to our business. We cannot predict what additional regulation or legislation relating to the health care industry or third party coverage and reimbursement may be enacted in the future or what effect such regulation or legislation may have on our business. If additional regulations are overly onerous or expensive, or if health care related legislation makes our business more expensive or burdensome than originally anticipated, we may be forced to significantly downsize our business plans or completely abandon our business model.

Our products may be expensive to manufacture, and they may not be profitable if we are unable to control the costs to manufacture them.

Our products may be significantly more expensive to manufacture than other therapeutic products currently on the market today. We hope to substantially reduce manufacturing costs through process improvements, development of new methods, increases in manufacturing scale and outsourcing to experienced manufacturers. If we are not able to make these, or other improvements, and depending on the pricing of the product, our profit margins may be significantly less than that of other therapeutic products on the market today. In addition, we may not be able to charge a high enough price for any cell therapy product we develop, even if they are safe and effective, to make a profit. If we are unable to realize significant profits from our potential product candidates, our business would be materially harmed.

We presently lack sufficient manufacturing capabilities to produce our therapeutic product candidates at commercial scale quantities and do not have an alternate manufacturing supply, which could negatively impact our ability to meet any future demand for the product.

We expect that we would need to significantly expand our manufacturing capabilities to meet potential demand for our therapeutic product candidates, if approved. Such expansion would require additional regulatory approvals. Even if we increase our manufacturing capabilities, it is possible that we may still lack sufficient capacity to meet demand.

We do not presently have any alternate supply for our products. If our facilities where our products are currently being manufactured or equipment were significantly damaged or destroyed, or if there were other disruptions, delays or difficulties affecting manufacturing capacity, including if such facilities are deemed not in compliance with current Good Manufacturing Practice ("GMP") requirements, future clinical studies and commercial production for our products would likely be significantly disrupted and delayed. It would be both time consuming and expensive to replace this capacity with third parties, particularly since any new facility would need to comply with the regulatory requirements.

Ultimately, if we are unable to supply our products to meet commercial demand, whether because of processing constraints or other disruptions, delays or difficulties that we experience, our production costs could dramatically increase and sales of the product and its long-term commercial prospects could be significantly damaged.

To be successful, our proposed products must be accepted by the health care community, which can be very slow to adopt or unreceptive to new technologies and products.

Our proposed products and those developed by our collaborative partners, if approved for marketing, may not achieve market acceptance since hospitals, physicians, patients or the medical community in general may decide not to accept and utilize these products. The products that we are attempting to develop represent substantial departures from established treatment methods and will compete with a number of more conventional therapies manufactured and marketed by major pharmaceutical companies. The degree of market acceptance of any of our developed products will depend on a number of factors, including:

- our establishment and demonstration to the medical community of the clinical efficacy and safety of our proposed products;
- our ability to create products that are superior to alternatives currently on the market;
- our ability to establish in the medical community the potential advantage of our treatments over alternative treatment methods; and
- reimbursement policies of government and third party payers.

If the healthcare community does not accept our products for any of the foregoing reasons, or for any other reason, our business would be materially harmed.

Our business is based on novel technologies that are inherently expensive, risky and may not be understood by or accepted in the marketplace, which could adversely affect our future value.

The clinical development, commercialization and marketing of cell and tissue-based therapies are at an early-stage, substantially research-oriented, and financially speculative. To date, very few companies have been successful in their efforts to develop and commercialize a stem cell product. In general, stem cell products may be susceptible to various risks, including undesirable and unintended side effects, unintended immune system responses, inadequate therapeutic efficacy, or other characteristics that may prevent or limit their approval or commercial use. Furthermore, the number of people who may use cell or tissue-based therapies is difficult to forecast with accuracy. Our future success is dependent on the establishment of a significant market for cell- and tissue-based therapies and our ability to capture a share of this market with our product candidates.

Our development efforts with our therapeutic product candidates are susceptible to the same risks of failure inherent in the development and commercialization of therapeutic products based on new technologies. The novel nature of cellular therapeutics creates significant challenges in the areas of product development and optimization, manufacturing, government regulation, third-party reimbursement and market acceptance. For example, the United States FDA has relatively limited experience regulating therapies based on cells, and there are few approved treatments utilizing cell therapy.

During the year ended December 31, 2020, we derived approximately 41% of our revenues from one customer.

During the year ended December 31, 2020, one customer accounted for 41% of our consolidated revenues. To the extent that this significant customer reduces or delays its purchases from us or terminate its relationship with us, our revenues would decline significantly, and our financial condition and results of operations would suffer substantially.

We depend on key personnel for our continued operations and future success, and a loss of certain key personnel could significantly hinder our ability to move forward with our business plan.

Because of the specialized nature of our business, we are highly dependent on our ability to identify, hire, train and retain highly qualified scientific and technical personnel for the research and development activities we conduct or sponsor. The loss of one or more

key executive officers, or scientific officers, would be significantly detrimental to us. In addition, recruiting and retaining qualified scientific personnel to perform research and development work is critical to our success. Our anticipated growth and expansion into areas and activities requiring additional expertise, such as clinical testing, regulatory compliance, manufacturing and marketing, will require the addition of new management personnel and the development of additional expertise by existing management personnel. There is intense competition for qualified personnel in the areas of our present and planned activities. Accordingly, we may not be able to continue to attract and retain the qualified personnel, which would adversely affect the development of our business.

We may not have sufficient product liability insurance, which may leave us vulnerable to future claims we will be unable to satisfy.

The testing, manufacturing, marketing and sale of human therapeutic products entail an inherent risk of product liability claims. We currently have a limited amount of product liability insurance, which may not be adequate to meet potential product liability claims. In the event we are forced to expend significant funds on defending product liability actions, and in the event those funds come from operating capital, we will be required to reduce our business activities, which could lead to significant losses. Adequate insurance coverage may not be available in the future on acceptable terms, if at all. If available, we may not be able to maintain any such insurance at sufficient levels of coverage and any such insurance may not provide adequate protection against potential liabilities. Whether or not a product liability insurance policy is obtained or maintained in the future, any product liability claim could harm our business or financial condition.

Risks Related to the Securities Markets and Our Capital Structure

Stock prices for biotechnology companies have historically tended to be very volatile.

Stock prices and trading volumes for many biotechnology companies fluctuate widely for a number of reasons, including but not limited to the following factors, some of which may be unrelated to their businesses or results of operations:

- clinical trial results;
- the amount of cash resources and such company's ability to obtain additional funding;
- announcements of research activities, business developments, technological innovations or new products by competitors;
- entering into or terminating strategic relationships;
- changes in government regulation;
- disputes concerning patents or proprietary rights;
- changes in revenues or expense levels;
- public concern regarding the safety, efficacy or other aspects of the products or methodologies being developed;
- development of major public health concerns, including the novel coronavirus outbreak or other pandemics arising globally, and the current and future impact of it and COVID-19 to the financial market;
- reports by securities analysts;
- activities of various interest groups or organizations;
- media coverage; and
- status of the investment markets.

This market volatility, as well as general domestic or international economic, market and political conditions, could materially and adversely affect the market price of our common stock.

Two of our executive officers and directors can significantly influence our direction and policies, and their interests may be adverse to the interests of our other stockholders.

As of December 31, 2020, Dr. Andrey Semechkin, Chief Executive Officer and Co-Chairman of the Board of Directors, and Dr. Russell Kern, Executive Vice President and Chief Scientific Officer and a director, beneficially own approximately 80% of our outstanding shares of common stock, including shares issuable upon conversion of the outstanding shares of our Series D, Series G, and Series I-2 Preferred Stock and shares issuable upon exercise of options and warrants that they hold and that are exercisable within 60 days of December 31, 2020. As a result of their holdings and the rights, preferences and privileges of those series of preferred stock, Dr. Andrey Semechkin and Dr. Russell Kern may appoint and remove two of our four directors, and propose candidates for nomination

of up to two additional directors, and therefore will be able to significantly influence the election of our Board of Directors. They may also prevent corporate transactions (such as a merger, consolidation, a sale of all or substantially all of our assets or a financing transaction) that may be favorable from the standpoint of our other stockholders or they may cause a transaction that our other stockholders may view as unfavorable.

The rights of holders of our common stock are subordinate to significant rights, preferences and privileges of our existing five series of preferred stock, and to any additional series of preferred stock created in the future.

Under the authority granted by our Certificate of Incorporation, our Board of Directors has established five separate series of outstanding preferred stock, including Series B, Series D, Series G, Series I-1 and Series I-2 Preferred Stock, which have various rights and preferences senior to the shares of common stock. Shares of some series of our existing preferred stock are also entitled to enhanced voting rights and liquidation preferences. As a result of the various voting rights, the holders of our existing preferred stock may be able to block the proposed approval of various corporate actions, which could prevent us from achieving strategic or other goals dependent on such actions. As a result of the liquidation preferences, in the event that we voluntarily or involuntary liquidate, dissolve or windup our affairs (including as a result of a merger), the holders of our preferred stock would be entitled to receive stated amounts per share, including any accrued and unpaid dividends, before any distribution of assets or merger consideration is made to holders of our common stock. Additionally, these shares of preferred stock may be converted, at the option of the holders, into common stock at rates that may be adjusted, for the benefit of holders of preferred stock, if we sell equity securities below the then existing conversion prices. Any such adjustments would compound the potential dilution suffered by holders of common stock if we issue additional securities at prices below the current conversion prices (ranging from $1.08 to $9.70 per share as of December 31, 2020). Additionally, subject to the consent of the holders of our existing preferred stock, our Board of Directors has the power to issue additional series of preferred stock and to designate, as it deems appropriate (subject to the rights of the holders of the current series of preferred stock), the special dividend, liquidation or voting rights of the shares of those additional series. The creation and designation of any new series of preferred stock could adversely affect the voting power, dividend, liquidation and other rights of holders of our common stock and, possibly, any other class or series of stock that is then in existence.

The market price for our common stock has been and may continue to be particularly volatile given our status as a relatively unknown company with a limited operating history and lack of profits, which could lead to wide fluctuations in our share price. The price at which stockholders purchase shares of our common stock may not be indicative of the price of our common stock that will prevail in the trading market.

The market for our common stock may be characterized by significant price volatility when compared to seasoned issuers, and we expect that our stock price could continue to be more volatile than a seasoned issuer for the indefinite future. The potential volatility in our share price is attributable to a number of factors. First, there has been limited trading in our common stock. As a consequence of this lack of liquidity, any future trading of shares by our stockholders may disproportionately influence the price of those shares in either direction. Second, we are a speculative or "risky" investment due to our limited operating history and lack of profits to date, and uncertainty of future market acceptance for our potential products. As a consequence of this enhanced risk, more risk averse investors may, under the fear of losing all or most of their investment in the event of negative news or lack of progress, be more inclined to sell their shares on the market more quickly and at greater discounts than would be the case with the stock of a seasoned issuer. Many of these factors will be beyond our control and may decrease the market price of our common stock, regardless of our operating performance. We cannot make any predictions or projections as to what the prevailing market price for our common stock will be at any time or as to what effect that the sale of shares or the availability of shares for sale at any time will have on the prevailing market price.

In addition, the market price of our common stock could be subject to wide fluctuations in response to:

- quarterly variations in our revenues and operating expenses;
- announcements of new products or services by us;
- fluctuations in interest rates;
- significant sales of our common stock;
- the operating and stock price performance of other companies that investors may deem comparable to us; and
- news reports relating to trends in our markets or general economic conditions.

Certain provisions of our Certificate of Incorporation and Delaware law may make it more difficult for a third party to affect a change-in-control.

Our Certificate of Incorporation authorizes the Board of Directors to issue up to 20,000,000 shares of preferred stock and our Board of Directors has created and issued shares of five series of preferred stock that remain outstanding, including Series B, Series D, Series G, Series I-1 and Series I-2 Preferred Stock. The terms of various series of Preferred Stock include, among other things, voting rights on particular matters (for example, with respect to the Series D Preferred Stock, restricting our ability to undergo a change in control or merge with, or sell assets to, a third-party), preferences as to dividends and liquidation, and conversion rights. These preferred stock rights diminish the rights of holders of our common stock, and therefore could reduce the value of such common stock. In addition, as long as shares of our Series B, Series D and Series G Preferred Stock remain outstanding, or if our Board creates and issues additional shares of preferred stock in the future with rights that restrict our ability to merge with, or sell assets to, a third party, it could make it more difficult, delay, discourage, prevent or make it more costly to acquire the Company or affect a change-in-control.

The application of the "penny stock" rules to our common stock could limit the trading and liquidity of our common stock, adversely affect the market price of our common stock and increase stockholder transaction costs to sell those shares.

While we are currently exempt from the "penny stock" rules, as long as the trading price of our common stock is below $5.00 per share, the open market trading of our common stock would be subject to the "penny stock" rules, if we otherwise do not continue to qualify for an exemption from the "penny stock" definition. The "penny stock" rules impose additional sales practice requirements on certain broker-dealers who sell securities to persons other than established customers and accredited investors (generally those with assets in excess of $1 million or annual income exceeding $200,000 or $300,000 together with their spouse). These regulations, if they apply, require the delivery, prior to any transaction involving a penny stock, of a disclosure schedule explaining the penny stock market and the associated risks. Under these regulations, certain brokers who recommend such securities to persons other than established customers or certain accredited investors must make a special written suitability determination regarding such a purchaser and receive such purchaser's written agreement to a transaction prior to sale. These regulations may have the effect of limiting the trading activity of our common stock, reducing the liquidity of an investment in our common stock and increasing the transaction costs for sales and purchases of our common stock as compared to other securities.

The issuance of our common stock to holders of Series I Preferred Stocks may cause dilution and the sale of the shares of common stock acquired by those holders, or the perception that such sales may occur, could cause the price of our common stock to fall.

As of March 30, 2021, we had 5,124 shares of Series I Convertible Preferred Stock outstanding. The conversion price of the Preferred Stock is subject to certain resets as set forth in the Certificates of Designation, including the date of the amendment to the certificate of incorporation with respect to any reverse stock split. Depending on market liquidity at the time, sales of such shares may cause the trading price of our common stock to fall.

The holders may ultimately convert the Series I Convertible Preferred Stock into shares of our common stock and sell those shares of common stock. Additionally, the conversion of the preferred stock by such holders will result in substantial dilution to the interests of other holders of our common stock. Also, the conversion of Series I Preferred Stock into a substantial number of shares of our common stock, or the anticipation of such conversion, 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.

The sale or issuance of a substantial number of shares may adversely affect the market price for our common stock.

The future sale of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could significantly and negatively affect the market price for our common stock. We expect that we will likely issue a substantial number of shares of our capital stock in financing transactions in order to fund our operations and the growth of our business. Under these arrangements, we may agree to register the shares for resale soon after their issuance. We may also continue to pay for certain goods and services with equity, which would dilute our current stockholders. Also, sales of the shares issued in this manner could negatively affect the market price of our stock.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited.

We have incurred substantial tax losses during our history. Subject to various limitations, we may carryforward unused taxable losses, including those generated in the future, and other available credits to offset any future taxable income until the unused losses or credits expire. Federal and state tax laws impose restrictions on the utilization of net operating loss ("NOL") and tax credit carryforwards in the event of an "ownership change" as defined by Section 382 of the Internal Revenue Code of 1986, as amended ("Section 382"). Generally, an ownership change occurs if the percentage of the value of the stock that is owned by one or more direct or indirect "five percent shareholders" increases by more than 50 percentage points over their lowest ownership percentage at any time during the

applicable testing period (typically, three years). Under Section 382 and Section 383, if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes to offset its post change income may be limited. Because of the cost and complexity involved in the analysis of a Section 382 ownership change and the fact that we do not have any taxable income to offset, we have not undertaken a study to assess whether an "ownership change" has occurred or whether there have been multiple ownership changes since we became a "loss corporation" as defined in Section 382. Future changes in our stock ownership, which may be outside of our control, may trigger an "ownership change." In addition, future equity offerings or acquisitions that have equity as a component of the purchase price could result in an "ownership change." If an "ownership change" has occurred or does occur in the future, our ability to utilize our NOL carryforwards or other tax attributes may be limited, which could result in an increased future tax liability to us.

Limitations on director and officer liability and indemnification of our officers and directors by us may discourage stockholders from bringing suit against a director.

Our certificate of incorporation and bylaws provide, with certain exceptions as permitted by governing state law, that a director or officer shall not be personally liable to us or our stockholders for breach of fiduciary duty as a director, except for acts or omissions which involve intentional misconduct, fraud or knowing violation of law, or unlawful payments of dividends. These provisions may discourage stockholders from bringing suit against a director for breach of fiduciary duty and may reduce the likelihood of derivative litigation brought by stockholders on our behalf against a director. In addition, our certificate of incorporation and bylaws may provide for mandatory indemnification of directors and officers to the fullest extent permitted by governing state law.

Compliance with the rules established by the SEC pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 is complex. Failure to comply in a timely manner could adversely affect investor confidence and our stock price.

Rules adopted by the SEC pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 require us to perform an annual assessment of our internal controls over financial reporting and certify the effectiveness of those controls. The standards that must be met for management to assess the internal controls over financial reporting now in effect are complex, costly and require significant documentation, testing and possible remediation to meet the detailed standards. We may encounter problems or delays in completing activities necessary to make an assessment of our internal controls over financial reporting. If we cannot perform the assessment or certify that our internal controls over financial reporting are effective investor confidence and share value may be negatively impacted.

ITEM 1B. UNRESOLVED STAFF COMMENTS.

None.

ITEM 2. PROPERTIES

We have established our primary research facility in 8,215 square feet of leased office and laboratory space in Oceanside, California. Our current lease for this facility expires in December 2021. The current base rent is approximately $11,000 per month. The facility has leasehold improvements which include cGMP (current Good Manufacturing Practices) level clean rooms designed for the derivation of clinical-grade stem cells and their differentiated derivatives, research laboratories for our stem cell differentiation studies and segregated rooms for biohazard control and containment of human donor tissue. The monthly base rent will increase by 3% on the anniversary date of the agreement.

In addition to the primary research facility lease, we have entered into a lease agreement with S Real Estate Holding, LLC (an affiliate of our CEO and Executive Vice President and Chief Scientific Officer) for our corporate offices located in Carlsbad, California. The current lease covers 9,028 square feet which is being used as the Company's headquarters. The current lease expires on February 28, 2023. As of December 31, 2020, the base rent was approximately $14,000 per month. The monthly base rent will increase by 2% annually on the anniversary date of the agreement. We are also obligated to pay a portion of the utilities for the building and increases in property tax and insurance.

In addition, we lease a 13,320 square foot facility in Frederick, Maryland, which is used for laboratory and administrative purposes. The current lease expires in November 2025. As of December 31, 2020, the base rent was approximately $17,000 per month. The laboratory is used to develop and manufacture our research products and the administration facility is used for sales and marketing, and general administration purposes. The monthly base rent will increase by 3% on the anniversary date of the agreement.

We believe our existing facilities are adequate to meet our current operational needs, and that suitable alternatives will be available in the future as and when needed on commercially reasonably terms.

ITEM 3. LEGAL PROCEEDINGS.

None.

ITEM 4. MINE SAFETY DISCLOSURES.

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES.

Market Information

As of December 31, 2020, we had 7,539,089 shares of common stock outstanding, and approximately 637 holders of record of our common stock, and we had 5,255,167 shares of preferred stock outstanding, and seven holders of record of our preferred stock, with the 5,255,167 shares of preferred stock being convertible into 6,132,278 shares of common stock.

On March 4, 2019, we were upgraded to trade from the OTC QB Venture Market to the OTC QX Best Market in the United States under the trading symbol "ISCO". The OTC QX is a regulated quotation service that displays real-time quotes, last-sale prices and volume information in over-the-counter equity securities. The OTC QX securities are traded by a community of market makers that enter quotes and trade reports. This market is limited in comparison to an exchange and any prices quoted may not be a reliable indication of the value of our common stock.

Dividends

Our Board of Directors determines any payment of dividends. We have never declared or paid cash dividends on our common stock. We do not expect to authorize the payment of cash dividends on our shares of common stock in the foreseeable future. Any future decision with respect to dividends will depend on our future earnings, operations, capital requirements and availability, restrictions in future financing agreements and other business and financial considerations.

ITEM 6. SELECTED FINANCIAL DATA

Not required.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion of our financial condition and results of operations should be read in conjunction with our audited consolidated financial statements and related notes and other financial information included elsewhere in this Annual Report on Form 10-K. The discussion contains forward-looking statements, such as our plans, expectations and intentions (including those related to clinical trials and business and expense trends), that are based upon current expectations and that involve risks and uncertainties. Our actual results may differ significantly from management's expectations. The factors that could affect these forward-looking statements are in Item 1A of Part I of this report. This discussion should not be construed to imply that the results discussed herein will necessarily continue into the future, or that any expectations expressed herein will necessarily be indicative of actual operating results in the future. Such discussion represents only the best present assessment by our management.

Business Overview

We have generated aggregate product revenues from our two commercial businesses of $7.1 million and $9.5 million for the years ended December 31, 2020 and 2019, respectively. We currently have no revenue generated from our principal operations in therapeutic and clinical product development.

Our products are based on multi-decade experience with human cell culture and a proprietary type of pluripotent stem cells, human parthenogenetic stem cells ("hpSCs"). Our hpSCs are comparable to human embryonic stem cells ("hESCs") in that they have the potential to be differentiated into many different cells in the human body. However, the derivation of hpSCs does not require the use of fertilized eggs or the destruction of viable human embryos and also offers the potential for the creation of immune-matched cells and tissues that are less likely to be rejected following transplantation. Our collection of hpSCs, known as UniStemCell™, currently consists of 15 stem cell lines. We have facilities and manufacturing protocols that comply with the requirements of Good Manufacturing Practice (GMP) standards as promulgated by the U.S. Code of Federal Regulations and enforced by the United States Food and Drug Administration ("FDA").

COVID-19 Pandemic

The impact of the COVID-19 pandemic has been and will likely continue to be extensive in many aspects of society, which has resulted in and will likely continue to result in significant disruptions to the global economy, as well as businesses and capital markets around the world. Impacts to our business have included a reduction in sales volume primarily from media sales in our biomedical market segment and professional channel sales in our anti-aging market segment, temporary or reduced occupancy of portions of our manufacturing facilities, and disruptions or restrictions on our employee's ability to travel to such manufacturing facilities which caused minor delays in manufacturing. Our manufacturing facilities continue to operate as they are deemed essential suppliers in accordance with laws applicable to California and Maryland. We have taken precautionary measures to better ensure the health and safety of our workers, including staggering employees' shifts and isolating at-risk employees.

The scope and duration of these delays and disruptions, and the ultimate impacts of COVID-19 on our operations, are currently unknown. We are continuing to actively monitor the situation and may take further precautionary and preemptive actions as may be required by federal, state or local authorities or that we determine are in the best interests of public health and safety. We cannot predict the effects that such actions, or the impact of COVID-19 on global business operations and economic conditions, may continue to have on our business, strategy, collaborations, or financial and operating results.

Market Opportunity and Growth Strategy

Therapeutic Market – Clinical Applications of hpSCs for Disease Treatments

With respect to therapeutic research and product candidates, we focus on applications where cell and tissue therapy is already proven but where there is an insufficient supply of safe and functional cells or tissue. We believe that the most promising potential clinical applications of our technology are: 1) Parkinson's disease ("PD"); 2) traumatic brain injury ("TBI"), and 3) metabolic/liver diseases. Using our proprietary technologies and know-how, we are creating neural stem cells from hpSCs as a potential treatment of PD and TBI and stroke liver cells from hpSCs that may be able to treat a variety of hepatic and metabolic liver diseases.

Our most advanced project is the neural stem cell program for the treatment of Parkinson's disease. In 2013 we published in Nature Scientific Reports the basis for our patent on a new method of manufacturing neural stem cells which is used to produce the clinical-grade cells necessary for future clinical studies and commercialization. In 2014 we completed the majority of the preclinical research establishing the safety profile of NSC in various animal species including non-human primates. In June 2016 we published the results of a 12-month pre-clinical non-human primate study, which demonstrated the safety, efficacy and mechanism of action of the ISC-

hpNSC®. In 2017 we dosed four patients in our Phase I trial of ISC-hpNSC®, human parthenogenetic stem cell-derived neural stem cells for the treatment of Parkinson's disease. We reported 12-month results from the first cohort and 6-month interim results of the second cohort at the Society for Neuroscience annual meeting (Neuroscience 2018) in November 2018. In April 2019, we announced the completion of subject enrollment, with the 12th subject receiving a transplantation of the highest dose of cells. There have been no safety signals or serious adverse effects seen to date as related to the transplanted ISC-hpNSC® cells. We anticipate providing full results of the active and follow up periods of the phase I clinical study in second quarter of 2021.

In November 2014 in an important ruling the FDA cleared our human parthenogenetic stem cells line for investigational clinical use. This was a necessary step in the process of advancing stem cell therapies based on our core technology into clinical development and on to commercialization. Although the Phase I study is conducted in Australia, and therefore not subject to FDA oversight, we anticipate that a significant portion of any future studies will likely be carried out in the United States where this approval is necessary.

In August 2014 we announced the launch of a stroke program, evaluating the use of ISC-hpNSC® transplantation for the treatment of ischemic stroke using a rodent model of the disease. The Company has a considerable amount of safety data on ISC-hpNSC® from the Parkinson's disease program and, as there is evidence that transplantation of ISC-hpNSC® may improve patient outcomes as an adjunctive therapeutic strategy in stroke, having a second program that can use this safety dataset is therefore a logical extension. In 2015 the Company together with Tulane University demonstrated that NSC can significantly reduce neurological dysfunction after a stroke in animal models.

In October 2016 we announced the results of the pre-clinical rodent study, evaluating the use of ISC-hpNSC® transplantation for the treatment of TBI. The study was conducted at the University of South Florida Morsani College of Medicine. We demonstrated that animals receiving injections of ISC-hpNSC® displayed the highest levels of improvements in cognitive performance and motor coordination compared to vehicle control treated animals. In February 2019, we published the results of the pre-clinical study in Theranostics, a prestigious peer-reviewed medical journal. The publication titled, "Human parthenogenetic neural stem cell grafts promote multiple regenerative processes in a traumatic brain injury model," demonstrated that the clinical-grade neural stem cells used in our Parkinson's disease clinical trial, ISC-hpNSC®, significantly improved TBI-associated motor, neurological, and cognitive deficits without any safety issues.

Anti-Aging Cosmetic Market – Skin Care Products

Our wholly-owned subsidiary LSC develops, manufactures and offers for sale anti-aging skin care products based on two core technologies: encapsulated extract derived from hpSC and specially selected targeted small molecules. LSC's products include:

- ProPlus Daily Defense Complex
- ProPlus Eye Firming Complex
- ProPlus Neck Firming Complex
- ProPlus Advanced Aquoues Treatment
- ProPlus Collagen Booster (Advanced Molecular Serum)
- ProPlus Elastin Booster
- Brightening Toner

LSC's products are regulated as cosmetics. LSC's products are sold domestically through a branded website, Amazon, ecommerce partners and through the professional channel (including dermatologists, plastic surgeons, medical, day and resort spas).

Biomedical Market – Primary Human Cell Research Products

Our wholly-owned subsidiary LCT develops, manufactures and commercializes approximately 200 human cell culture products, including frozen human "primary" cells and the reagents (called "media") needed to grow, maintain and differentiate the cells. LCT's scientists have used a standardized, methodical, scientific approach to basal medium optimization to systematically produce optimized products designed to culture specific human cell types and to elicit specific cellular behaviors. These techniques can also be used to produce products that do not contain non-human animal proteins, a feature desirable to the research and therapeutic markets. Each LCT cell product is quality tested for the expression of specific markers (to assure the cells are the correct type), proliferation rate, viability, morphology and absence of pathogens. Each cell system also contains associated donor information and all informed consent requirements are strictly followed. LCT's research products are marketed and sold by its internal sales force, OEM partners and LCT brand distributors in Europe and Asia.

Results of Operations

Comparison of the Years Ended December 31, 2020 and 2019

The following table summarizes our results of operations for the years ended December 31, 2020 and 2019, together with the dollar and percent change in those items (in thousands):

	Years Ended December 31,			
	2020	2019	$ Change	% Change
Product sales	$ 7,128	$ 9,472	$ (2,344)	-25%
Cost of sales	2,781	3,933	(1,152)	-29%
As a % of revenues	*39%*	*42%*		
Research and development	988	1,386	(398)	-29%
Selling and marketing	1,755	2,685	(930)	-35%
General and administrative	4,422	7,196	(2,774)	-39%
Other income, net	94	1,463	(1,369)	-94%
Net loss	$ (2,724)	$ (4,265)	$ 1,541	-36%
As a % of revenues	*-38%*	*-45%*		

Product Sales

Product sales revenue for the year ended December 31, 2020 was $7.1 million, compared to $9.5 million for the year ended December 31, 2019. The decrease of $2.4 million, or 25%, was primarily attributable to a $1.9 million decrease in media product sales in our biomedical market segment and a $446,000 decrease in professional channel sales in our anti-aging market in 2020 compared to 2019.

Our media product sales were adversely impacted by COVID-19 as universities and research laboratories in the United States closed, slowed or shifted operations during 2020. In addition, original equipment manufacturers have reduced purchases as inventory turnover has slowed. This may result in a continued decline in product sales as such customers deplete excess inventory in 2021 and beyond.

Our professional skin care products, which are largely marketed to medical professionals and spas that offer walk-up retail, experienced a significant decline in customer demand due to COVID-19 and the related restrictions as these businesses have continued with limited or reduced operations during the year ended December 31, 2020. The impact of these restrictions was mitigated in-part by expanding our offering of professional skin care products through our ecommerce channel. Anti-aging product sales through our ecommerce channel remained consistent year-over-year.

Cost of Sales

Cost of sales for the year ended December 31, 2020 was $2.8 million, compared to $3.9 million for the year ended December 31, 2019. The decrease of $1.1 million, or 29%, was primarily attributable to a $1.0 million decrease in costs as a result of decreased product sales and a $624,000 decrease in inventory transactions including a reduction in allowance for inventory excess and obsolescence, partially offset by a $393,000 increase in cost of sales due to unfavorable manufacturing variances and absorption due to reduced customer demand. Profit margins increased slightly for the year ended December 31, 2020 compared to 2019, which was largely attributable to the reduction in allowance for inventory excess and obsolescence during 2020 compared to the prior year.

Cost of sales consists primarily of salaries and benefits associated with employee efforts expended directly on the production of the Company's products, as well as related direct materials, general laboratory supplies and an allocation of overhead. We aim to continue refining our manufacturing processes and supply chain management to improve the cost of sales as a percentage of revenue for both LCT and LSC.

Research and Development Expenses

Research and development expenses for the year ended December 31, 2020 was $1.0 million, compared to $1.4 million for the year ended December 31, 2019. The decrease of $400,000, or 29%, was primarily attributable to a $729,000 decrease in personnel-related costs and stock-based compensation primarily as a result of headcount reductions following the conclusion of the treatment phase of the clinical trial in Australia, and a $61,000 decrease in materials and supplies, partially offset by a $458,000 decrease in our research and development tax credit related to qualifiable expenditures from our research and development activities of our Australia subsidiary, Cyto

Therapeutics, which reduced research and development expenses for years ended December 31, 2020 and 2019. We expect to continue to experience a decline in research and development expense for the first half of 2021 as we await the full results of the active and follow up periods from our phase 1 clinical trial of ISC-hpNSC®, which are expected to be received in second quarter of 2021.

Our research and development efforts are primarily focused on the development of treatments for Parkinson's disease, traumatic brain injury, liver diseases, stroke, and the creation of new GMP grade human parthenogenetic stem cell lines. These projects are long-term investments that involve developing both new stem cell lines and new differentiation techniques that can provide higher purity populations of functional cells. Research and development expenses are expensed as incurred and are accounted for on a project-by-project basis. However, much of our research has potential applicability to each of our projects.

Selling and Marketing Expenses

Selling and marketing expenses for the year ended December 31, 2020 was $1.8 million, compared to $2.7 million for the year ended December 31, 2019. The decrease of $930,000, or 35%, was primarily attributable to a $525,000 decrease in personnel-related costs, sales commissions and stock-based compensation, primarily as a result of headcount reductions, a $152,000 decrease in marketing and tradeshow related expenses and a $57,000 decrease in consulting and creative services. The reduction in marketing and tradeshow related expenses was largely attributable to travel restrictions as a result of COVID-19.

General and Administrative Expenses

General and administrative expenses for the year ended December 31, 2020 was $4.4 million, compared to $7.2 million for the year ended December 31, 2019. The decrease of $2.8 million, or 39%, was primarily attributable to a $1.4 million decrease in impairment of intangible assets, a $549,000 decrease in accounting and filing-related fees, a $527,000 decrease in personnel-related costs and stock-based compensation, primarily as a result of headcount reductions, a $121,000 decrease in legal fees, and a $46,000 decrease in investor relations fees, partially offset by a $63,000 increase in director and office liability insurance.

Other Income, Net

Other income, net, for the year ended December 31, 2020 was $94,000, compared to other income, net, of $1.5 million for the year ended December 31, 2019. The decrease of $1.4 million, or 94%, was primarily attributable to the change in the fair value of the warrant liability.

Liquidity and Capital Resources

As of December 31, 2020, we had an accumulated deficit of approximately $109.1 million and have, on an annual basis, incurred net losses and negative operating cash flows since inception. Substantially all of our operating losses have resulted from the funding of our research and development programs and general and administrative expenses associated with our operations. We incurred net losses of $2.7 million and $4.3 million for years ended December 31, 2020 and 2019, respectively. As of December 31, 2020, we had cash of $689,000, compared to $484,000 as of December 31, 2019.

In May 2020, we received a $654,000 loan (the "PPP Loan") from the U.S. Small Business Administration ("SBA") Paycheck Protection Program ("PPP") which provided additional liquidity to support our current operations. We have used the full amount of proceeds from the PPP Loan for what we believe to be qualifying expenses and intend to apply for forgiveness for at least a portion of the PPP Loan. There is no assurance that we will be able to obtain forgiveness of the PPP Loan in whole or in part. The terms of the PPP Loan, including eligibility and forgiveness, may be subject to further requirements in regulations and guidance adopted by the SBA. Our primary use of cash is to continue to fund our research and development programs and operations.

Cash Flows

Comparison of the Years Ended December 31, 2020 and 2019

The following table provides information regarding our cash flows for the years ended December 31, 2020 and 2019 (in thousands):

	Years Ended December 31,	
	2020	2019
Net cash used in operating activities	$ (341)	$ (1,397)
Net cash used in investing activities	(108)	(494)
Net cash provided by financing activities	654	1,300
Net increase (decrease) in cash	$ 205	$ (591)

Operating Cash Flows

For the year ended December 31, 2020, net cash used in operating activities was $341,000, resulting primarily from our net loss of $2.7 million and change in fair value of warrant liability of $207,000, offset by non-cash adjustments of stock-based compensation expense of $1.3 million, operating lease expense of $265,000 and depreciation and amortization of $253,000, coupled with net changes in operating assets and liabilities of $623,000. For the year ended December 31, 2019, net cash used in operating activities was $1.4 million, resulting primarily from our net loss of $4.3 million and change in fair value of warrant liability of $1.5 million, offset by non-cash adjustments of stock-based compensation of $2.1 million, impairment of intangible assets of $1.5 million, operating lease expense of $289,000, depreciation and amortization of $285,000, and net changes in operating assets and liabilities of $128,000.

Investing Cash Flows

Net cash used in investing activities for the year ended December 31, 2020 was $108,000, compared to $494,000 for the year ended December 31, 2019. The decrease of $386,000 was attributable to a decrease in payments for patent licenses of $250,000 and a decrease in purchases of property and equipment of $136,000 year-over-year.

Financing Cash Flows

Net cash provided by financing activities for year ended December 31, 2020 was $654,000, compared to $1.3 million for the year ended December 31, 2019. For the year ended December 31, 2020, net cash providing from financing activities consisted of $654,000 in proceeds from the Paycheck Protection Program loan. For the year ended December 31, 2019, net cash provided from financing activities consisted of $1.3 million from a note payable from a related party.

Liquidity and Going Concern

Management continues to evaluate various financing sources and options to raise working capital to help fund our current research and development programs and operations. We will need to obtain significant additional capital from sources including exercise of outstanding warrants, equity and/or debt financings, license arrangements, grants and/or collaborative research arrangements to sustain our operations and develop products. Unless we obtain additional financing, we do not have sufficient cash on hand to sustain our operations at least through one year after the issuance date. The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying our estimates for capital needs in 2021 and beyond;
- the extent that revenues from sales of LSC and LCT products cover the related costs and provide capital;
- scientific progress in our research and development programs;
- the magnitude and scope of our research and development programs and our ability to establish, enforce and maintain strategic arrangements for research, development, clinical testing, manufacturing and marketing;
- our progress with preclinical development and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims;
- the number and type of product candidates that we pursue;

- the development of major public health concerns, including COVID-19 or other pandemics arising globally, and the current and future impact that such concerns may have on our operations and funding requirements; and

- the extent, if any, of forgiveness of our loans under the SBA Paycheck Protection Program.

As a result of the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have recently experienced extreme volatility and disruptions, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. As the pandemic continues and restrictions remain in place or new restrictions are imposed, it may make any additional debt or equity financing more difficult, more costly and more dilutive. Our failure to raise capital or enter into applicable arrangements when needed would have a negative impact on our financial condition. Additional debt financing may be expensive and require the Company to pledge all or a substantial portion of its assets. Further, if additional funds are obtained through arrangements with collaborative partners, these arrangements may require the Company to relinquish rights to some of its technologies, product candidates or products that the Company would otherwise seek to develop and commercialize on its own. If sufficient capital is not available, the Company may be required to delay, reduce the scope of or eliminate one or more of its product initiatives.

We currently have no revenue generated from our principal operations in therapeutic and clinical product development through research and development efforts. There can be no assurance that we will be successful in maintaining our normal operating cash flow and obtaining additional funds and that the timing of our capital raising or future financing will result in cash flow sufficient to sustain our operations at least through one year after the issuance date.

Based on the factors above, there is substantial doubt about our ability to continue as a going concern. The consolidated financial statements were prepared assuming that we will continue to operate as a going concern. The consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classification of liabilities that may result from the outcome of this uncertainty. Management's plans in regard to these matters are focused on managing our cash flow, the proper timing of our capital expenditures, and raising additional capital or financing in the future.

Critical Accounting Policies and Estimates

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues, expenses and related disclosures. On an on-going basis, we evaluate our estimates and assumptions and we base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions and conditions.

Our significant accounting policies are more fully described in Note 1 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. Our most critical accounting estimates include intangible assets which impacts operating expenses and accrued liabilities, and stock-based compensation which impacts operating expenses. We review our estimates and assumptions periodically and reflect the effects of revisions in the period in which they are deemed to be necessary. We believe that the following accounting policies are critical to the judgments and estimates used in preparation of our consolidated financial statements.

Intangible Assets

Our intangible assets consist of acquired patent licenses and capitalized legal fees related to the acquisition, filing, maintenance, and defense of patents and trademarks. Amortization begins once the patent is issued by the appropriate authoritative bodies. In the period in which a patent application is rejected or efforts to pursue the patent are abandoned, all the related accumulated costs are expensed. Our patents and other intangible assets are amortized on a straight-line basis over the shorter of the useful life of the underlying patent, which is generally 15 years, or when the intangible asset is rejected or abandoned. All amortization expense and impairment charges related to intangible assets are included in general and administrative expense in our consolidated statements of operations.

Stock-Based Compensation

We are required to measure and recognize compensation expense for all stock-based payment awards made to employees and consultants based on estimated fair value. We estimate the fair value of stock options granted using the Black-Scholes option-pricing model.

The determination of fair value of stock-based awards using the Black-Scholes option-pricing model requires the use of certain estimates and highly judgmental assumptions that affect the amount of stock-based compensation expense recognized in our consolidated statements of operations. These include estimates of the expected volatility of our stock price, expected option life, expected dividends and the risk-free interest rate. Estimated volatility is a measure of the amount by which our stock price is expected to fluctuate each year during the expected life of the award. The expected option life is calculated using the mid-point method as prescribed by accounting guidance for stock-based compensation. We determined expected dividend yield to be 0% given that we have never declared or paid any cash dividends on our common stock, and we currently do not anticipate paying such cash dividends. The risk-free interest rate is based upon United States Treasury securities with remaining terms similar to the expected term of the share-based awards. If any of the assumptions used in the Black-Scholes model change significantly, stock-based compensation expense may differ materially from what we have recorded in the current period.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 1 to our consolidated financial statements included in this Annual Report on Form 10-K.

Off-Balance Sheet Arrangements

As of December 31, 2020 and 2019, we had no off-balance sheet arrangements, as defined in Item 303(a)(4)(ii) of Regulation S-K under the Exchange Act.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.

Not required.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.

The information required by this Item is set forth in our Consolidated Financial Statements and Notes thereto beginning at page F-1 of this Annual Report on Form 10-K.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.

None.

ITEM 9A. CONTROLS AND PROCEDURES.

Disclosure Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(e) and 15d-15(e) under the Exchange Act, the Company, with the participation of management, including our Chief Executive Officer and Principal Financial Officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in such rules) as of the end of the period covered by this report. Based on this evaluation, our Chief Executive Officer and Principal Financial Officer concluded that, at December 31, 2019, our disclosure controls and procedures were effective.

Disclosure controls and procedures are controls and other procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Principal Financial Officer, or persons performing similar functions, as appropriate, to allow timely decisions regarding required disclosure.

Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions; over time, controls may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

Remediation of Previously Reported Material Weakness

We previously identified and disclosed in our 2019 Annual Report on Form 10-K and for each interim period during the fiscal year 2020 in our Quarterly Reports on Form 10-Q a material weakness in internal control over financial reporting, including the areas of financial reporting and technical accounting, disclosures of equity, identification of the status of intangible assets as issued, pending, expired or abandoned, complex, non-routine, and significant transactions, and adoption of new accounting standards, collectively resulting from lack of continuity and sufficient accounting and finance resources.

In response to the material weakness described above, we made changes in our internal control over financial reporting, which included:

- Contracting with an external financial consultant group that specializes in complex accounting transactions and reporting.
- Redesigning controls and procedures over financial statement reporting, including certain controls related to identification of complex, non-routine, and significant transactions.
- More timely and robust review of our intangible asset portfolio and account reconciliation by management and our external financial consultant group.
- Enhanced review procedures by management and our external financial consultant group related to key financial statement account reconciliations.

- Mitigating deficiencies over segregation of duties by realigning the performance of certain control objectives within the accounting function.

We believe the actions taken to strength our internal control over financial reporting, as well as the results of our testing over the design and operating effectiveness of these controls, remediated the previously identified material weakness as of December 31, 2020. Our remediation efforts are subject to continued management review and supported by testing, as well as oversight by our Audit Committee.

Changes in Internal Control Over Financial Reporting

Other than the remediation efforts identified above, there were no changes in our internal control over financial reporting that occurred during the quarter ended December 31, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting except for the remediation of material weakness described above.

Management Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Our internal control system is 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 in the United States ("GAAP") and 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 GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorization 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 its financial statements.

Because of its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal controls over financial reporting may vary over time. Our system contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are identified.

Our management conducted an evaluation of the effectiveness of the system of internal control over financial reporting based on the framework in *Internal Control—Integrated* Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (the 2013 COSO Framework). Based on the above evaluation, the Company's Chief Executive Officer and Principal Financial Officer have concluded that our internal control over financial reporting was effective as of December 31, 2020.

ITEM 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item regarding our directors is incorporated by reference to the information in our definitive Proxy Statement (the "Proxy Statement") expected to be filed with the Securities and Exchange Commission within 120 days of December 31, 2020, in connection with our 2021 Annual Meeting of Stockholders under the heading "Election of Directors." The information required by this item regarding our Code of Conduct and Ethics in incorporated by reference to the information in the Proxy Statement, expected to be filed within 120 days of December 31, 2020, under the caption "Code of Conduct and Ethics." The information required by this item regarding our Governance Committee and Audit Committee is incorporated by reference to the information in the Proxy Statement, expected to be filed within 120 days of December 31, 2020, under the caption "Corporate Governance."

As of December 31, 2020, our executive officers were as follows:

Name	Position	Age
Andrey Semechkin	Co-Chairman and Chief Executive Officer	61
Russell Kern	Executive Vice President and Chief Scientific Officer	35
Sophia Garnette	Vice President, Legal Affairs & Operations and Principal Financial Officer	37

Andrey Semechkin, Ph.D., Co-Chairman and CEO, has been a Director of the Company since December 2008. Dr. Semechkin has served as our Chief Executive Officer since November 2009, and from December 2008 to November 2009 he served in other senior management positions with the Company. Dr. Semechkin is a specialist in system analysis, strategic planning and corporate management. He is a member of the Russian Academy of Sciences and has been Deputy Director of Institute of System Analysis since 2004. Dr. Semechkin was awarded the Russian Government Award in Science and Technology in 2006 and has written several scientific books. He has over 20 years' experience creating and managing businesses across different industries and scientific sectors.

Russell Kern, Ph.D, Executive Vice President, Chief Scientific Officer and CEO of Lifeline Skin Care Inc., became a Director in October 2008. Dr. Kern has served as our Chief Scientific officer since June 2013 and previously served since December 2008 in various scientific and management positions, including as Vice President Research and Development. Dr. Kern was trained in medical genetics, embryology and stem cell biology. He holds a Ph.D. degree in Human Physiology from the Russian Academy of Medical Sciences and has broad expertise in neuroscience, and was part of the team, along with scientists from the NYU Medical School that elucidated the physiological changes that occur in the brains of Parkinson's disease patients. Dr. Kern directs ISCO's R&D programs including stem cell derivation, differentiation and the pre-clinical and clinical evaluation of stem cell derived cells and tissue. He has developed a general method of deriving highly pure populations of neural stem cells and dopaminergic neurons from pluripotent stems cells that is novel, practical and suitable for use in a clinical setting. Dr. Kern is a well-known speaker on stem cell biology, including the use of stem cells for neurology and skin regeneration. He has more than 40 publications in the field of Parkinson's disease and stem cell biology and he is an active member of the American Academy of Neurology and the Society for Neuroscience. Dr. Russell Kern is the son of Dr. Andrey Semechkin, our Co-Chairman and Chief Executive Officer.

Sophia Garnette, J.D., Vice President, Legal Affairs & Operations and Principal Financial Officer, received her law degree from the University of Miami School of Law and has experience in various aspects of corporate and biotechnology law, regulatory affairs, project management, and business operations. After joining the Company in March 2011, she has held a variety of business and legal positions, including in-house counsel, advisor to the CEO, and Managing Director for Lifeline Skin Care.

Item 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference to the information in the Proxy Statement, expected to be filed within 120 days of December 31, 2020, under the caption "Executive Compensation."

Item 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated by reference to the information in the Proxy Statement, under the captions "Stock Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters" and "Equity Compensation Plan Information."

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated by reference to the information in the Proxy Statement, expected to be filed within 120 days of December 31, 2020, under the captions "Related Person Transactions" and "Corporate Governance – Director Independence."

Item 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference to the information in the Proxy Statement, expected to be filed within 120 days of December 31, 2020, under the caption "Principal Accounting Fees and Services."

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) Documents filed as part of this report.

1. **Financial Statements**

As part of this Annual report on Form 10-K, the consolidated financial statements are listed in the accompanying index to financial statements on page F-1.

2. **Financial Statement Schedules**

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

3. **Exhibit Index**

The following is a list of exhibits filed as part of this Annual Report on Form 10-K (including those incorporated herein by reference):

Exhibit Number	Exhibit Description
3.1	Certificate of Incorporation (incorporated by reference to Exhibit 3.4 of the Registrant's Form 10-SB filed on April 4, 2006).
3.2	Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Preliminary Information Statement on Form 14C filed on December 29, 2006).
3.3	Certificate of Amendment of Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on June 4, 2012).
3.4	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on December 5, 2014).
3.5	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on July 28, 2015).
3.6	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on May 19, 2017).
3.7	Amended and Restated Bylaws of the Registrant (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on May 6, 2011).
4.1	Form of Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 of the Registrant's Form 10-KSB filed on April 9, 2007).
4.2	Certification of Designation of Series B Preferred Stock (incorporated by reference to Exhibit 4.1 of the Registrant's Form 8-K filed on May 12, 2008).
4.3	Certification of Designation of Series D Preferred Stock (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on January 5, 2009).
4.4	Certificate of Designation of Series G Preferred Stock (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on March 14, 2012).
4.5	Certificate of Preferences, Rights and Limitations of Series I-1 Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K filed on March 10, 2016).
4.6	Certificate of Preferences, Rights and Limitations of Series I-2 Convertible Preferred Stock (incorporated by reference to Exhibit 3.2 of the Registrant's Form 8-K filed on March 10, 2016).
4.7	Description of the Registrant's Securities Registered Pursuant to Section 12 of the Securities Exchange Act of 1934 (filed herewith).

Exhibit Number	Exhibit Description
10.1*	International Stem Cell Corporation 2006 Equity Participation Plan (incorporated by reference to Exhibit 10.15 of the Registrant's Form 8-K filed on December 29, 2006).
10.2	Cell Culture Automation Agreement dated May 13, 2010 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on May 19, 2010).
10.3*	2010 Equity Participation Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on August 12, 2020).
10.4	Amended and Restated Investors Rights Agreement dated March 9, 2012 (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on March 15, 2012).
10.5	Management Rights Letter dated March 9, 2012 (incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K filed on March 15, 2012).
10.6	Dividend Waiver Agreement dated October 12, 2012 (incorporated by reference to Exhibit 10.29 of the Registrant's Form S-1 filed on October 18, 2012).
10.7	Amended and Restated License Agreement with Advanced Cell Technology, Inc. dated February 7, 2013 (ACT IP) (incorporated by reference to Exhibit 10.1 of the Registrant's Amendment to Form 8-K filed on February 14, 2013)
10.8	Amended and Restated License Agreement with Advanced Cell Technology, Inc. (UMass IP) (incorporated by reference to Exhibit 10.3 of the Registrant's Amendment to Form 8-K filed on February 14, 2013).
10.9	Amended and Restated License Agreement dated February 7, 2013 with Advanced Cell Technology, Inc. (Infigen IP) (incorporated by reference to Exhibit 10.2 of the Registrant's Amendment to Form 8-K filed on February 14, 2013).
10.10	Amendment dated November 13, 2014 to Amended and Restated Investor Rights Agreement dated as of March 9, 2012 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on November 18, 2014).
10.11	Waiver Agreement dated December 31, 2014 with holders of Series G Preferred Stock (incorporated by reference by Exhibit 10.32 of the Registrant's Form 10-K filed March 30, 2015).
10.12	Registration Rights Agreement, dated January 8, 2016, by and between International Stem Cell Corporation and Andrey Semechkin (incorporated by reference to Exhibit 10.3 of the Registrant's Form 8-K filed on January 12, 2016).
10.13	Form of Registration Rights Agreement (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K filed on March 10, 2016).
10.14	Restated Lease Agreement, dated March 1, 2020, by and between the Company and S Real Estate Holdings, LLC (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q filed on June 19, 2020).
10.15	Promissory Note, dated May 4, 2020, by and between the Company and Wells Fargo Bank, N.A. (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q filed on August 12, 2020).
10.16	Form of Note issued on March 5, 2021 (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K filed on March 8, 2021).
10.17	Promissory Note, dated March 18, 2021, by and between the Company and Endeavor Bank (filed herewith)
21.1	Subsidiaries of the Registrant (incorporated by reference to Exhibit 21.1 of the Registrant's Form 10-K filed on March 30, 2016).
23.1	Consent of BDO USA, LLP (filed herewith)
31.1	Rule 13a-14(a)/15d-14(a) Certification of Chief Executive Officer (filed herewith)
31.2	Rule 13a-14(a)/15d-14(a) Certification of Chief Financial Officer (filed herewith)
32.1	Section 1350 Certification of Chief Executive Officer (filed herewith)
32.2	Section 1350 Certification of Chief Financial Officer (filed herewith)
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema

Exhibit Number	Exhibit Description
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase

* Indicates management contract or compensatory plan.

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

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

INTERNATIONAL STEM CELL CORPORATION

By: /s/ ANDREY SEMECHKIN
Name: **Andrey Semechkin**
Title: **Chief Executive, Officer**

Dated: March 30, 2021

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature:	Capacity:	Date:
/ S/ ANDREY SEMECHKIN **Andrey Semechkin**	Co-Chairman of the Board and Chief Executive Officer (Principal Executive Officer)	March 30, 2021
/ S/ SOPHIA GARNETTE **Sophia Garnette**	Vice President Legal Affairs and Operations (Principal Financial Officer)	March 30, 2021
/ S/ RUSSELL KERN **Russell Kern**	Executive VP and Chief Scientific Officer and Director	March 30, 2021
/ S/ DONALD A. WRIGHT **Donald A. Wright**	Co-Chairman of the Board	March 30, 2021
/ S/ PAUL V. MAIER **Paul V. Maier**	Director	March 30, 2021

International Stem Cell Corporation and Subsidiaries
Index to Consolidated Financial Statements

Report of Independent Registered Public Accounting Firm

Board of Directors and Stockholders
International Stem Cell Corporation
San Diego, California

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of International Stem Cell Corporation (the "Company") as of December 31, 2020 and 2019, the related statements of operations, changes in redeemable convertible preferred stock and stockholders' deficit, and cash flows for the years then ended, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2020 and 2019, and the results of its operations and its cash flows for the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Going Concern Uncertainty

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has incurred recurring losses from operations that raise substantial doubt about its ability to continue as a going concern. Management's plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's consolidated financial statements 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 audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits 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. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matter

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of the critical audit matter 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 separate opinions on the critical audit matter or on the accounts or disclosures to which it relates.

Inventory Valuation – Excess and Obsolete Inventory

As described in Note 1 to the consolidated financial statements, the Company reviews the components of its inventory on a periodic basis for excess and obsolescence and adjusts inventory to the lower of cost or net realizable value as necessary. The Lifeline Cell Technology ("LCT") inventory has a long product life cycle,doesnot have a shelf life when frozen and future demand is uncertain. As such, management relies on historical sales to estimate future demand and obsolescence.

We identified auditing the accounting forLCTinventory valuation for excess and obsolete inventory as a critical audit matter.When estimating its inventory reserve for excess andobsolescence, the Companyuseshistorical sales data and inventory turnover rates. Auditing these elements involves especially challenging auditor judgment due to the uncertainty of future demand along with the nature and extent of audit effort required to address these matters.

The primary procedures we performed to address this critical audit matter included:

- Testing the completeness and accuracy ofthe calculation by (i) re-performing calculations including agreeing theunderlying data to relevant source reports, and (ii) testing the source reports used in the calculation by sampling recent transactions and agreeing sales and use movements to relevant source documents.

- Assessing the product life cycle assumptions by comparing the assumptions to historical inventory turnover rates and evaluating the impact that would result from a range of alternative assumptions.

/s/ BDO USA, LLP

We have served as the Company's auditor since 2019.

San Diego, California
March 30, 2021

International Stem Cell Corporation and Subsidiaries
Consolidated Balance Sheets
(In thousands, except share and par value data)

	December 31, 2020	December 31, 2019
Assets		
Current assets:		
Cash	$ 689	$ 484
Accounts receivable, net	403	1,515
Inventory, net	917	1,246
Prepaid expenses and other current assets	174	207
Total current assets	2,183	3,452
Non-current inventory	371	358
Property and equipment, net	534	668
Intangible assets, net	1,262	1,335
Right-of-use assets	874	717
Deposits and other assets	63	90
Total assets	$ 5,287	$ 6,620
Liabilities, Redeemable Convertible Preferred Stock and Stockholders' Deficit		
Current liabilities:		
Accounts payable	$ 360	$ 654
Accrued liabilities	386	642
Operating lease liabilities, current	346	367
Advances	250	250
Paycheck Protection Program loan, current	141	—
Total current liabilities	1,483	1,913
Related party note payable	2,475	2,370
Paycheck Protection Program loan, net of current portion	517	—
Fair value of warrant liability	—	207
Operating lease liabilities, net of current portion	845	718
Total liabilities	5,320	5,208
Commitments and contingencies (Note 11)		
Series D redeemable convertible preferred stock, $0.001 par value; 50 shares authorized; 43 shares issued and outstanding; liquidation preference of $4,300 at December 31, 2020 and 2019	4,300	4,300
Stockholders' Deficit:		
Non-redeemable convertible preferred stock, $0.001 par value; 10,006,310 shares authorized; 5,255,124 shares issued and outstanding; liquidation preference of $10,565 and $10,550 at December 31, 2020 and 2019, respectively	5	5
Common stock, $0.001 par value; 120,000,000 shares authorized; 7,539,089 shares issued and outstanding at December 31, 2020 and 2019	8	8
Additional paid-in capital	104,769	103,490
Accumulated deficit	(109,115)	(106,391)
Total stockholders' deficit	(4,333)	(2,888)
Total liabilities, redeemable convertible preferred stock and stockholders' deficit	$ 5,287	$ 6,620

See accompanying notes to consolidated financial statements.

International Stem Cell Corporation and Subsidiaries
Consolidated Statements of Operations
(In thousands, except per share data)

	Years Ended December 31,	
	2020	**2019**
Product sales	$ 7,128	$ 9,472
Operating expenses:		
Cost of sales	2,781	3,933
Research and development	988	1,386
Selling and marketing	1,755	2,685
General and administrative	4,422	7,196
Total operating expenses	9,946	15,200
Loss from operations	(2,818)	(5,728)
Other income (expense):		
Change in fair value of warrant liability	207	1,538
Interest expense	(113)	(77)
Miscellaneous income	—	2
Total other income, net	94	1,463
Net loss	$ (2,724)	$ (4,265)
Net loss per common share, basic and diluted	$ (0.36)	$ (0.57)
Weighted-average common shares used to compute net loss per share, basic and diluted	7,539	7,513

See accompanying notes to consolidated financial statements.

International Stem Cell Corporation and Subsidiaries
Consolidated Statements of Changes in Redeemable Convertible Preferred Stock and Stockholders' Deficit
(In thousands)

	Series D Redeemable Convertible Preferred Stock		Non-redeemable Convertible Preferred Stock		Common Stock		Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount	Shares	Amount			
Balance at December 31, 2018	—	$ —	5,255	$ 5	6,934	$ 7	$ 109,188	$ (106,663)	$ 2,537
Out of period correction	—	4,300	—	—	—	—	(8,837)	4,537	(4,300)
Conversion of bridge loan from a related party to common stock	—	—	—	—	599	1	1,048	—	1,049
Stock-based compensation	—	—	—	—	—	—	2,087	—	2,087
Issuance of common stock	—	—	—	—	6	—	4	—	4
Net loss	—	—	—	—	—	—	—	(4,265)	(4,265)
Balance at December 31, 2019	—	4,300	5,255	5	7,539	8	103,490	(106,391)	(2,888)
Stock-based compensation	—	—	—	—	—	—	1,279	—	1,279
Net loss	—	—	—	—	—	—	—	(2,724)	(2,724)
Balance at December 31, 2020	—	$ 4,300	5,255	$ 5	7,539	$ 8	$ 104,769	$ (109,115)	$ (4,333)

See accompanying notes to consolidated financial statements.

International Stem Cell Corporation and Subsidiaries
Consolidated Statements of Cash Flows
(In thousands)

	Years Ended December 31,	
	2020	**2019**
Cash flows from operating activities		
Net loss	$ (2,724)	$ (4,265)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	253	285
Operating lease expense	265	289
Stock-based compensation	1,279	2,087
Common stock issued for services	—	4
Change in fair value of warrant liability	(207)	(1,538)
Interest expense on related party note payable	105	73
Impairment of intangible assets	65	1,540
Changes in operating assets and liabilities:		
Accounts receivable, net	1,112	(864)
Inventory, net	316	702
Prepaid expenses and other current assets	33	336
Deposits and other assets	27	(12)
Accounts payable	(294)	196
Accrued liabilities	(256)	74
Operating lease liabilities	(315)	(304)
Net cash used in operating activities	(341)	(1,397)
Cash flows from investing activities		
Purchases of property and equipment	(28)	(164)
Payments for patent licenses	(80)	(330)
Net cash used in investing activities	(108)	(494)
Cash flows from financing activities		
Proceeds from Paycheck Protection Program loan	654	—
Proceeds from note payable from a related party	—	1,300
Net cash provided by financing activities	654	1,300
Net increase (decrease) in cash	205	(591)
Cash, beginning of period	484	1,075
Cash, end of period	$ 689	$ 484
Supplemental disclosure of cash flow information:		
Cash paid for interest	$ 5	$ 5
Supplemental disclosure of non-cash investing and financing activities:		
Right-of-use asset obtained in exchange for operating lease liability	$ 421	$ —
Patent license costs included in accrued liabilities	$ 3	$ —
Conversion of bridge loan from a related party to common stock	$ —	$ 1,049

See accompanying notes to consolidated financial statements.

1. Description of Business and Summary of Significant Accounting Policies

Description of Business

International Stem Cell Corporation (the "Company") was organized in Delaware in June 2005 and is publicly traded on the OTCQX under the symbol "ISCO". The Company is primarily a research and development company, for the therapeutic market, which has focused on advancing potential clinical applications of human parthenogenetic stem cells ("hpSCs") for the treatment of various diseases of the central nervous system and liver diseases. The Company has the following wholly-owned subsidiaries:

- Lifeline Cell Technology, LLC ("LCT") – for the biomedical market, develops, manufactures and commercializes primary human cell research products including over 200 human cell culture products, including frozen human "primary" cells and the reagents (called "media") needed to grow, maintain and differentiate the cells;
- Lifeline Skin Care, Inc. ("LSC") – for the anti-aging market, develops, manufactures and markets a category of anti-aging skin care products based on the Company's proprietary parthenogenetic stem cell technology and small molecule technology;
- Cyto Therapeutics Pty. Ltd. ("Cyto Therapeutics") – performs research and development ("R&D") for the therapeutic market and is currently conducting clinical trials in Australia for the use of ISC-hpNSC® in the treatment of Parkinson's disease.

COVID-19 Pandemic

The COVID-19 pandemic has caused business disruptions in the Company's business globally. The Company's consolidated financial statements reflect judgments and estimates that could change in the future as a result of the COVID-19 pandemic. For the year ended December 31, 2020, the Company experienced a year-over-year decline in product sales. In response, the Company has reduced its capital spending and, where possible, operating expenses while facilitating ongoing safe and reliable operations. As of the date of this report, the Company expects the COVID-19 pandemic will continue to adversely impact its business, financial condition, liquidity, and future results of operations. The full extent to which the COVID-19 pandemic will impact the Company remains uncertain and ultimately will be dictated by the length and severity of the pandemic, as well as the economic recovery and federal, state and local government actions taken in response. The Company is continuing to monitor the impact of COVID-19 on the Company's operations, workforce, suppliers, customers and industry.

Liquidity and Going Concern

The Company had an accumulated deficit of approximately $109.1 million as of December 31, 2020 and has, on an annual basis, incurred net losses and negative operating cash flows since inception. The Company has had no revenue from its principal operations in therapeutic and clinical product development through research and development efforts. Unless the Company obtains additional financing, the Company does not have sufficient cash on hand to sustain operations for at least through one year from the issuance date of these financial statements.

There can be no assurance that the Company will be successful in maintaining normal operating cash flow or obtaining additional funding. These circumstances raise substantial doubt about the Company's ability to continue as a going concern. For the foreseeable future, the Company's ability to continue its operations is dependent upon its ability to obtain additional financing. The accompanying consolidated financial statements do not include any adjustments to reflect the possible future effects on the recoverability and classification of assets or the amounts and classifications of liabilities that may result from the outcome of the uncertainty concerning the Company's ability to continue as a going concern.

The Company continues to evaluate various financing sources and options to raise working capital to help fund current research and development programs and operations. The Company will need to obtain significant additional funding from sources, including through the exercise of outstanding warrants, debt and/or equity financing, license arrangements, grants and/or collaborative research arrangements to sustain its operations and develop products.

The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying the estimates for capital needs in 2021 and beyond;
- the extent that revenues from sales of LSC and LCT products cover the related costs and provide capital;
- scientific progress in research and development programs;

- the magnitude and scope of the Company's research and development programs and its ability to establish, enforce and maintain strategic arrangements for research, development, clinical testing, manufacturing and marketing;
- the progress with preclinical development and clinical trials;
- the time and costs involved in obtaining regulatory approvals;
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims;
- the number and type of product candidates that the Company decides to pursue;
- the development of major public health concerns, including COVID-19 or other pandemics arising globally, and the current and future impact that such concerns may have on the Company's operations and funding requirements; and
- the extent, if any, of forgiveness of our loans under the SBA Paycheck Protection Program.

As a result of the COVID-19 pandemic and actions taken to slow its spread, the global credit and financial markets have experienced extreme volatility and disruptions, including inconsistent liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. As the pandemic continues and restrictions remain in place or new restrictions are imposed, it may make any additional debt and/or equity financing more difficult, more costly and more dilutive.

In addition, debt financing may be expensive and require the Company to pledge all or a substantial portion of its assets. If additional funds are obtained through arrangements with collaborative partners, these arrangements may require the Company to relinquish rights to some of its technologies, product candidates or products that the Company would otherwise seek to develop and commercialize on its own. Furthermore, if sufficient capital is not available, the Company may be required to delay, reduce the scope of or eliminate one or more of its product initiatives. The Company's failure to raise capital or enter into applicable arrangements when needed would have a negative impact on its financial condition.

Principles of Consolidation and Foreign Currency Transactions

The consolidated financial statements include the accounts of International Stem Cell Corporation and its subsidiaries. All intercompany balances and transactions have been eliminated in consolidation. The functional currency of the Company and its subsidiaries, including its wholly-owned Australian subsidiary, Cyto Therapeutics, is the U.S. dollar. Assets and liabilities that are not denominated in the functional currency are remeasured into U.S. dollars at foreign currency exchange rates in effect at the respective balance sheet dates. Revenue and expenses are translated at the average rate in effect on the date of the transaction. Net realized and unrealized gains and losses from foreign currency transactions and remeasurement are reported in general and administrative expense in the accompanying consolidated statements of operations and were not material for the periods presented.

Reclassifications

For the year ended December 31, 2019, the Company reclassified certain prior period amounts to conform to the current period presentation, as follows:

- The carrying value and shares of the Company's Series B, Series G, Series I-1 and Series I-2 non-redeemable convertible preferred stock were aggregated on the accompanying consolidated balance sheets and consolidated statements of changes in redeemable convertible preferred stock and stockholders' deficit. Refer to Note 6 – Convertible Preferred Stock, for further discussion;
- Non-cash operating lease expense was reclassified from changes in operating assets and liabilities to adjustments to reconcile net loss to net cash used in operating activities on the accompanying consolidated statements of cash flows; and
- Allowance for inventory obsolescence was reclassified from adjustments to reconcile net loss to net cash used in operating expenses to inventory, net, in the changes in operating assets and liabilities on the accompanying consolidated statements of cash flows.

These reclassifications had no effect on previously reported net loss, stockholders' deficit, or cash flows for the prior period.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the accompanying consolidated financial statements. Significant estimates include patent

life (remaining legal life versus remaining useful life), inventory carrying values, allowance for excess and obsolete inventories, allowance for sales returns and doubtful accounts, and transactions using the Black-Scholes option valuation model, for example, common stock options and warrants, as well as the Monte-Carlo simulation method for certain common stock warrants. Actual results could differ from those estimates.

Segments

The Company's chief operating decision-maker reviews financial information presented on a consolidated basis, accompanied by disaggregated information by each reportable company's statement of operations. The Company operates the business on the basis of three reporting segments, the parent company and two business units: ISCO – therapeutic market; LCT – biomedical market, and; LSC – anti-aging market.

Inventory

Inventory is accounted for using the average cost and first-in, first-out ("FIFO") methods for LCT cell culture media and reagents, average cost and specific identification methods for LSC products, and specific identification method for other LCT products. Inventory balances are stated at the lower of cost or net realizable value. Laboratory supplies used in the research and development process are expensed as consumed. LCT's inventory has a long product life cycle, does not have a shelf life when frozen, and future demand is uncertain. As such, at each reporting period, the Company estimates its reserve for allowance and obsolescence using historical sales data and inventory turnover rates. The establishment of a reserve for excess and obsolete inventory establishes a new cost basis in the inventory. If the Company is able to sell such inventory, any related reserves would be reduced in the period of sale. The value of the inventory that is not expected to be sold within twelve months of the current reporting period is classified as non-current inventory on the accompanying consolidated balance sheets.

Accounts Receivable

Trade accounts receivable are recorded at the net invoice value and are not interest bearing. Accounts receivable primarily consist of trade accounts receivable from the sales of LCT's products, timing of cash receipts by the Company related to LSC credit card sales to customers, as well as LSC trade receivable amounts related to spa and distributor sales. The Company considers receivables past due based on the contractual payment terms. The Company reviews its exposure to accounts receivable and reserves specific amounts if collectability is no longer reasonably assured. The Company recorded an allowance for doubtful accounts of $12,000 as of December 31, 2020 and 2019.

Advances

In June 2008, the Company entered into an agreement with BioTime, Inc. ("BioTime"), whereby BioTime paid an advance of $250,000 to LCT to produce, make, and distribute certain products. The $250,000 advance will be paid down with the first $250,000 of net revenues that otherwise would be allocated to LCT under the agreement. As of December 31, 2020, no revenues were realized and attributable to BioTime under this agreement.

Property and Equipment

Property and equipment are stated at cost. The provision for depreciation and amortization is computed using the straight-line method over the estimated useful lives of the assets, which are generally three to five years. The costs of major remodeling and leasehold improvements are capitalized and amortized over the shorter of the remaining term of the lease or the estimated life of the asset.

Intangible Assets

Intangible assets consist of acquired patent licenses and capitalized legal fees related to the acquisition, filing, maintenance, and defense of patents and trademarks. Amortization begins once the patent is issued by the appropriate authoritative bodies. In the period in which a patent application is rejected or efforts to pursue the patent are abandoned, all the related accumulated costs are expensed. Patents and other intangible assets are amortized on a straight-line basis over the shorter of the useful life of the underlying patent, which is generally 15 years, or when the intangible asset is rejected or abandoned. All amortization expense and impairment charges related to intangible assets are included in general and administrative expense in the accompanying consolidated statements of operations.

Long-Lived Asset Impairment

The Company reviews long-lived assets for impairment when events or changes in circumstances ("triggering event") indicate that the carrying value of an asset or group of assets may not be recovered. If a triggering event is determined to have occurred, the carrying

value of an asset or group of assets is compared to the future undiscounted cash flows expected to be generated by the asset or group of assets. If the carrying value exceeds the undiscounted cash flows of the asset or group of assets, then impairment exists. Fair value is generally determined using the asset's expected future discounted cash flows or market value, if readily determinable.

Revenue Recognition

The Company's revenue consists primarily of sales of products from its two revenue-generating operating segments, the biomedical products market and anti-aging products market. The biomedical market segment markets and sells primary human cell research products with two product categories, cells and media, which are sold both domestically within the United States and internationally. The anti-aging market segment markets and sells a line of skincare products sold through two sales channels: ecommerce and professional. The ecommerce channel sells direct to customers through online orders, while professional sales are to spas, salons and other skincare providers.

The following table presents the Company's revenue disaggregated by segment, product and geography (in thousands):

Biomedical market:

	Year Ended December 31, 2020			
	Domestic	International	Total Revenues	% of Total Revenues
Biomedical products				
Cells	$ 838	$ 389	$ 1,227	22%
Media	3,903	447	4,350	78%
Other	17	—	17	—
Total	$ 4,758	$ 836	$ 5,594	100%

	Year Ended December 31, 2019			
	Domestic	International	Total Revenues	% of Total Revenues
Biomedical products				
Cells	$ 851	$ 395	$ 1,246	17%
Media	5,750	483	6,233	83%
Other	20	—	20	—
Total	$ 6,621	$ 878	$ 7,499	100%

Anti-aging market:

	Years Ended December 31,			
	2020		2019	
	Total Revenues	% of Total Revenues	Total Revenues	% of Total Revenues
Skin care sales channels				
Ecommerce	$ 1,050	68%	$ 1,043	53%
Professional	484	32%	930	47%
Total	$ 1,534	100%	$ 1,973	100%

Contract terms for unit price, quantity, shipping and payment are governed by sales agreements, invoices or online order forms which the Company considers to be a customer's contract in all cases. The unit price is considered the observable stand-alone selling price for the arrangements. Any promotional or volume sales discounts are applied evenly to the units sold for purposes of calculating standalone selling price.

The Company recognizes revenue when its customer obtains control of the promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. Product sales generally consist of a single performance obligation that the Company satisfies at a point in time (i.e., upon delivery of the product).

For LSC products, online sales and professional sales are pre-paid through credit card charges. The Company sometimes extends 15, 30, or 60-day credit terms to select professional accounts. For biomedical products, standard payment terms for its customers are generally 30 days after the Company satisfies the performance obligation(s). For LSC, the Company honors a 30-day return policy, but

historical returns have been minimal and as such, no estimated allowance for sales returns was recorded as of December 31, 2020 and 2019.

The Company elects to account for shipping and handling costs as activities to fulfill the promise to transfer the goods to a customer. As a result, no consideration is allocated to shipping and handling costs. Rather, the Company accrues the cost of shipping and handling upon shipment of the product, and all contract revenue (i.e., the transaction price) is recognized at the same time.

Variable Consideration

The Company records revenue from customers in an amount that reflects the transaction price it expects to be entitled to after transferring control of those goods or services. From time to time, the Company offers sales promotions on its skincare products such as discounts and free product offers. Variable consideration is estimated at contract inception only to the extent that it is probable that a significant reversal of revenue will not occur and updated at the end of each reporting period as additional information becomes available.

Contract Balances

The Company records a receivable when it has an unconditional right to receive consideration after a performance obligation is satisfied. As of December 31, 2020 and 2019, accounts receivable, net, totaled $403,000 and $1.5 million, respectively. For the years ended December 31, 2020 and 2019, the Company did not incur material write-offs of its receivables.

Practical Expedients

The Company has elected the practical expedient to not determine whether contacts with customers contain significant financing components. The Company pays commissions on certain sales for its biomedical and anti-aging product markets once the customer payment has been received, which are accrued at the time of the sale. The Company generally expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within sales and marketing expenses. In addition, the Company has elected to exclude sales taxes consideration from the determined transaction price.

Allowance for Sales Returns

The Company's anti-aging products have a 30-day product return guarantee; however, the Company determined that there is a low probability that returns will occur based on its historical rate of returns. Historically, returns have not been significant and are recognized as a reduction to current period revenue. As of December 31, 2020 and 2019, the Company recorded no allowance for sales returns.

Cost of Sales

Cost of sales consists primarily of salaries and benefits associated with employee efforts expended directly on the production of the Company's products, as well as related direct materials, general laboratory supplies and an allocation of overhead. Certain of the Company's licensed technology agreements may require the Company to pay royalties based on the future sale of the Company's products. Such royalties will be recorded as a component of cost of sales when incurred. Additionally, milestone payments or the amortization of license fees related to developed technologies used in the Company's products will be included as a component of cost of sales to the extent that such payments become due in the future.

Research and Development Costs

Research and development costs, which are expensed as incurred, primarily consist of salaries and benefits associated with research and development personnel, overhead and occupancy costs, contract services costs and amortization of license costs for technology used in research and development with alternative future uses. Research and development costs are net of research and development tax credits earned by Cyto Therapeutics, the Company's wholly-owned subsidiary based in Australia. The Australian Taxation Office provides for a refundable tax credit in the form of a cash refund equal to 43.5% of qualified research and development expenditures, not to exceed established thresholds. Since the refund does not depend on an entity's tax status or tax position, it is outside of the scope of accounting for income taxes and is treated as grant income. The Company recognized reductions to research and development costs of $157,000 and $615,000 for the years ended December 31, 2020 and 2019, respectively, attributable to the refundable tax credit.

Stock-Based Compensation

The cost of a stock-based award is measured at the grant date based on the estimated fair value of the award, and is recognized as expense on a straight-line basis, net of forfeitures which are recognized as incurred, over the requisite service period of the award. The

fair value of stock options is estimated using the Black-Scholes option valuation model, which requires the input of subjective assumptions, including price volatility of the underlying stock, risk-free interest rate, dividend yield, and expected life of the option. The fair value of restricted stock awards is based on the market value of the Company's common stock on the date of grant.

Fair Value of Financial Instruments

The Company believes that the carrying value of its cash, accounts receivables, accounts payable, accrued liabilities, Paycheck Protection Program loan and related party note payable as of December 31, 2020 and 2019 approximate their fair values because of the short-term nature of those instruments. The fair value of warrants was determined at each issuance date and reporting date using the Monte-Carlo simulation model.

Fair Value Measurements

Fair value is defined as an exit price, representing the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. As such, fair value is a market-based measurement that should be determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the accounting guidance establishes a three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value as follows:

Level 1: Observable inputs such as quoted prices in active markets.

Level 2: Inputs, other than the quoted prices in active markets that are observable either directly or indirectly.

Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

The Company has no financial assets or liabilities, other than the warrant liability described below, measured at fair value on a recurring basis. No transfers between levels have occurred during the periods presented.

The table below sets forth a summary of the Company's liabilities which are measured at fair value on a recurring basis as of December 31, 2020 and 2019 (in thousands).

		Fair Value Measurements at Reporting Date Using		
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
As of December 31, 2020				
Warrant liability	$ —	$ —	$ —	$ —
As of December 31, 2019				
Warrant liability	$ 207	$ —	$ —	$ 207

The following table presents the rollforward activity of liabilities with inputs that are both significant to the fair value measurement and unobservable (supported by little or no market activity) (in thousands):

	Warrant Liability
Balance at December 31, 2018	$ 1,745
Change in fair value of warrant liability	(1,538)
Balance at December 31, 2019	207
Change in fair value of warrant liability	(207)
Balance at December 31, 2020	$ -

Warrant Liability

The Company is required to recognize warrant agreements as a liability since they did not meet the specific conditions for equity classification and therefore need to be recognized at its fair value. The fair value of the warrant liability is calculated using the Monte-

Carlo simulation model, which requires the use of certain estimates. The fair value of these warrants is re-measured at each financial reporting period with any changes in fair value being recognized as a component of other income, net, in the accompanying consolidated statements of operations.

The following assumptions were used as inputs to the model:

	December 31, 2020	December 31, 2019
Risk-free interest rate	0.08%	1.55% - 1.59%
Volatility	80.0%	85.0%
Term to expiration (in years)	0.21	0.29 - 1.21
Subsequent financing	0.0%	0.0%

Income Taxes

The Company uses the asset and liability method of accounting for income taxes. When the Company prepares its consolidated financial statements, it estimates income taxes based on the various jurisdictions and countries where it conducts business. This requires the Company to estimate current tax exposure and to assess temporary differences that result from differing treatments of certain items for tax and accounting purposes. Deferred income taxes are recognized based on the differences between the financial statement and income tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The Company then assesses the likelihood that deferred tax assets will be realized. Valuation allowances are established, when it is more likely than not the deferred tax assets will not be realized. When the Company establishes a valuation allowance or increases this allowance in an accounting period, it records a corresponding tax expense in the consolidated statements of operations. The Company includes interest and penalties related to income taxes within its provision for income taxes.

Net Loss Per Share

Basic net loss per share attributable to common stockholders is calculated by dividing the net loss attributable to common stockholders by the weighted-average number of common shares outstanding during the period. Diluted net loss per share attributable to common stockholders is computed by dividing the net loss attributable to common stockholders by the weighted-average number of common stock equivalents outstanding for the period determined using the treasury-stock and if-converted methods. Potentially dilutive common stock equivalents are comprised of stock options, common stock warrants and convertible preferred stock. For the years ended December 31, 2020 and 2019, there was no difference in the number of shares used to calculate basic and diluted shares outstanding as the Company was in a net loss position.

For the years ended December 31, 2020 and 2019, the following common stock options, common stock warrants and convertible preferred stock were not included in the diluted net loss per share calculation because the effect would be anti-dilutive.

	Years Ended December 31,	
	2020	2019
Options outstanding	4,652,988	4,936,673
Common stock warrants outstanding	3,949,281	3,951,052
Redeemable convertible preferred stock	2,457,143	2,457,143
Non-redeemable convertible preferred stock	3,675,135	3,675,135
Total	14,734,547	15,020,003

Comprehensive Loss

Comprehensive loss includes all changes in stockholders' equity except those resulting from investments by owners and distributions to owners. The Company did not have any items of comprehensive loss other than net loss from operations for the years ended December 31, 2020 and 2019.

Customer Concentrations

For the year ended December 31, 2020, one major customer accounted for approximately 41% of product sales. For the year ended December 31, 2019, two major customers accounted for 37% and 15% of product sales, respectively. No other single customer accounted for more than 10% of product sales for the year ended.

Recently Issued Accounting Pronouncements

In June 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-13, *Financial Instruments— Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"). The ASU introduced a new credit loss methodology, the Current Expected Credit Losses ("CECL") methodology, which requires earlier recognition of credit losses, while also providing additional transparency about credit risk. The CECL methodology utilizes a lifetime "expected credit loss" measurement objective for the recognition of credit losses for loans, held-to maturity debt securities, trade receivables and other receivables measured at amortized cost at the time the financial asset is originated or acquired. Subsequent to the issuance of ASU 2016-13, the FASB issued several additional ASUs to clarify implementation guidance, provide narrow-scope improvements and provide additional disclosure guidance. In November 2019, the FASB issued an amendment making this ASU effective for fiscal years beginning after December 15, 2022 for smaller reporting companies. The new standard will be effective for the Company on January 1, 2023 or at such earlier time where it is no longer a smaller reporting company. The Company is currently evaluating the potential impact that this standard may have on its consolidated financial statements and related disclosures.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes* ("ASU 2019-12"). ASU 2019-12 simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. ASU 2019-12 also improves the consistent application, and the simplification, of other areas of Topic 740 by clarifying and amending existing guidance. ASU 2019-12 is effective for fiscal years beginning after December 15, 2020, and interim periods within those fiscal years, with early adoption permitted. The Company is currently evaluating the potential impact that this standard may have on its consolidated financial statements and related disclosures.

In August 2020, the FASB issued ASU No. 2020-06, *Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815-40)* ("ASU 2020-06"). ASU 2020-06 simplifies the accounting for convertible debt instruments by reducing the number of accounting models and the number of embedded features that could be recognized separately from the host contract. Consequently, more convertible debt instruments will be accounted for as a single liability measured at its amortized cost, as long as no other features require bifurcation and recognition as derivatives. ASU 2020-06 also requires use of the if-converted method in the diluted earnings per share calculation for convertible instruments. ASU 2020-06 is effective for fiscal years beginning after December 15, 2023, and interim periods within those fiscal years for smaller reporting companies, with early adoption permitted. The new standard will be effective for the Company on January 1, 2024 or at such earlier time where it is no longer a smaller reporting company. The Company is currently evaluating the potential impact that this standard may have on its consolidated financial statements and related disclosures.

Recently Adopted Accounting Pronouncements

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework—Changes to the Disclosure Requirements for Fair Value Measurement* ("ASU 2018-13"). ASU 2018-13 adds and modifies certain disclosure requirements for fair value measurements. Under the new guidance, entities will no longer be required to disclose the amount of and reasons for transfers between Level 1 and Level 2 of the fair value hierarchy, or valuation process for Level 3 fair value measurements. ASU 2018-13 does require the disclosure for the range and weighted-average of significant unobservable inputs used to develop Level 3 fair value measurements. ASU 2018-13 is effective for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years, with early adoption permitted. The Company adopted ASU 2018-13 on January 1, 2020. The adoption of this standard did not have a material impact on the Company's consolidated financial statements or related disclosures.

2. Inventory

The components of inventories are as follows (in thousands):

	December 31, 2020	December 31, 2019
Raw materials	$ 427	$ 688
Work in process	481	492
Finished goods	991	1,219
	1,899	2,399
Less: allowance for inventory excess and obsolescence	(611)	(795)
Total current and non-current inventory, net	$ 1,288	$ 1,604
Inventory, net	$ 917	$ 1,246
Non-current inventory	371	358
Total current and non-current inventory, net	$ 1,288	$ 1,604

During the year ended December 31, 2020, the Company disposed of obsolete inventory in the amount of $131,000. The inventory had been fully reserved for and the write-off had no impact on the Company's consolidated statements of operations. No obsolete inventory was disposed of during the year ended December 31, 2019.

3. Property and Equipment

Property and equipment consist of the following (in thousands):

	December 31, 2020	December 31, 2019
Machinery and equipment	$ 1,661	$ 1,642
Computer equipment and software	241	236
Office equipment	230	230
Leasehold improvements	1,303	1,290
Construction in progress	3	12
	3,438	3,410
Less: accumulated depreciation and amortization	(2,904)	(2,742)
Property and equipment, net	$ 534	$ 668

Depreciation and amortization expense for the years ended December 31, 2020 and 2019 was $162,000 and $156,000, respectively.

4. Intangible Assets

Intangible Assets consists of the following (in thousands):

	December 31, 2020	December 31, 2019
Patents	$ 2,286	$ 2,268
Less: accumulated amortization	(1,099)	(1,008)
	1,187	1,260
Indefinite life logos and trademarks	75	75
Intangible assets, net	$ 1,262	$ 1,335

Amortization expense for the years ended December 31, 2020 and 2019 was $91,000 and $129,000, respectively. During the years ended December 31, 2020 and 2019, the Company abandoned and fully impaired certain patents that the Company concluded it would no longer defend or incur additional costs to maintain. Impairment charges for the years ended December 31, 2020 and 2019 was $65,000 and $1.5 million, respectively.

The timing of approval of pending patent applications is uncertain and, therefore, are included in the thereafter period below until issued. Pending patents at December 31, 2020 was $139,000. At December 31, 2020, future amortization expense related to intangible assets subject to amortization is expected to be as follows (in thousands):

Years ending December 31,	
2021	$ 93
2022	93
2023	93
2024	93
2025	93
Thereafter	722
Total	$ 1,187

5. Paycheck Protection Program Loan

In May 2020, the Company received a loan of $654,000 from its lender under the Paycheck Protection Program (the "PPP Loan"). The Paycheck Protection Program ("PPP"), as amended, was established under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act") and is administered by the U.S. Small Business Administration ("SBA"). The PPP Loan required the Company to, in good faith, certify that the current economic uncertainty made the loan request necessary to support the ongoing operations of the Company. This certification required the Company to take into account its current business activity and its ability to access other sources of liquidity sufficient to support ongoing operations in a manner that is not significantly detrimental to the business. Based in part on the Company's assessment of other sources of liquidity, uncertainty associated with future revenues created by the COVID-19 pandemic, and the going concern uncertainty reflected in the Company's consolidated financial statements, the Company believes in good faith that it met the eligibility requirements for the PPP Loan. If it is later determined that the Company had violated any applicable laws or regulations or it is otherwise determined the Company was ineligible to receive the PPP Loan, it may be required to repay the PPP Loan in its entirety and/or be subject to additional penalties and potential liabilities.

The PPP Loan has a two-year term and bears interest at a rate of 1% per annum. Principal and interest payments are deferred for ten months following the loan forgiveness period, which is defined as the 24-week period following the loan origination date, at which time the loan balance is payable in monthly installments unless the Company applies for, and receives, forgiveness in accordance with the CARES Act and the terms of the loan executed by the Company and its lender. As required by the CARES Act, the Company used the proceeds from the PPP Loan for payroll, healthcare benefits, rent and other qualifying expenses. The PPP provides that the use of the PPP Loan shall be limited to certain qualifying expenses and may be partially or wholly forgiven by the SBA in accordance with the requirements set forth in the CARES Act. While the Company intends to apply for forgiveness of at least a portion of the PPP Loan, there is no assurance that the Company will obtain forgiveness of the PPP Loan in whole or in part. As of December 31, 2020, $141,000 and $517,000 of outstanding principal and accrued interest of the PPP Loan was classified as current and non-current, respectively, on the accompanying consolidated balance sheets based on the contractual payment schedule of the PPP Loan.

On March 18, 2021, the Company applied for and received approval for a second draw under the Paycheck Protection Program ("Second Draw") in the amount of $474,147. See Note 13 – Subsequent Events, for further information.

6. Convertible Preferred Stock

As of December 31, 2020 and 2019, the Company was authorized to issue 20,000,000 shares of preferred stock, $0.001 par value per share. The Company has designated 50 shares of Series D redeemable convertible preferred stock and a total of 10,006,310 shares of Series B, Series G, Series I-1 and Series I-2 non-redeemable convertible preferred stock.

The Company's Series B, Series G, Series I-1 and Series I-2 non-redeemable convertible preferred stock has been classified as equity on the accompanying consolidated balance sheets. The authorized, issued and outstanding shares of non-redeemable convertible preferred stock as of December 31, 2020 consist of the following:

	Shares Authorized	Shares Issued and Outstanding	Liquidation Preference	Carrying Value
			(in thousands)	
Series B	5,000,000	250,000	$ 441	$ —
Series G	5,000,000	5,000,000	5,000	5
Series I-1	2,000	814	814	—
Series I-2	4,310	4,310	4,310	—
Total	10,006,310	5,255,124	$ 10,565	$ 5

The authorized, issued and outstanding shares of non-redeemable convertible preferred stock as of December 31, 2019 consist of the following:

	Shares Authorized	Shares Issued and Outstanding	Liquidation Preference	Carrying Value
			(in thousands)	
Series B	5,000,000	250,000	$ 426	$ —
Series G	5,000,000	5,000,000	5,000	5
Series I-1	2,000	814	814	—
Series I-2	4,310	4,310	4,310	—
Total	10,006,310	5,255,124	$ 10,550	$ 5

The significant rights and preferences of the Company's convertible preferred stock are as follows:

Dividends

Holders of the Company's convertible preferred stock are entitled to participating dividends with common stock when and if declared by the Company's board of directors. No dividends have been declared as of December 31, 2020.

Liquidation

Liquidation preference among classes of preferred shares is first with Series D with priority, followed by Series G, Series B, Series I-1 and Series I-2 on the proceeds from any sale or liquidation of the Company in an amount equal to the purchase price of shares plus (in the case of the Series B) an amount equal to 1% of the Series B original issue price for every two calendar months from February 1, 2008. Following the satisfaction of the liquidation preferences, all shares of common stock participate in any remaining distribution.

Conversion

The conversion rates of the Series B, Series D, Series I-1 and Series I-2 are subject to anti-dilution adjustments whereby, subject to specified exceptions, if the Company

issues equity securities or securities convertible into equity at a price below the applicable conversion price of the Series B, Series D, Series I-1 and Series I-2, the conversion price of each such series shall be adjusted downward to equal the price of the new securities. The conversion rate of the Series G is subject to a weighted-average adjustment in the event of the issuance of additional shares of common stock below the conversion price, subject to specified exceptions. Upon the occurrence of an event that triggers a down round protection, the Company will recognize the value of the down round as a beneficial conversion discount. The conversion price of the Series I-1 and Series I-2 are also subject to certain resets as set forth in the Certificates of Designation, including a reverse stock split.

The following table summarizes the number of shares of common stock into which each share of convertible preferred stock can be converted at December 31, 2020 and 2019:

	Initial Conversion Price	Current Conversion Price	Conversion Ratio to Common Stock
Series B	$ 75.00	$ 1.08	0.9259260
Series D	$ 37.50	$ 1.75	57,142.8605
Series G	$ 60.00	$ 9.70	0.103099
Series I-1	$ 1.75	$ 1.75	571.428571
Series I-2	$ 1.75	$ 1.75	571.428571

Voting

The holders of Series B, Series D, and Series G are entitled to one vote for each share of common stock into which it would convert. As long as there are at least 10 shares of Series D outstanding, the holders of Series D have (i) the right to nominate and elect two members of the Board of Directors, and (ii) the right to approve specified significant transactions affecting the Company. As long as there are at least 1,000,000 shares of Series G outstanding, the holders of Series G have the initial right to propose the nomination of two members of the Board, at least one of which such nominees shall be subject to the approval of the Company's independent directors, for election by the stockholders at the Company's next annual meeting of stockholders, or, elected by the full board of directors to fill a vacancy, as the case may be. At least one of the two directors nominated by holders of the Series G shall be independent based on the NASDAQ listing requirements. The holders of Series I-1 and Series I-2 have no voting rights, except as required by law.

Series D Preferred Stock Redemption

The Company's Series D redeemable convertible preferred stock contains a contingent redemption feature that is not solely within the Company's control. Accordingly, the Series D redeemable convertible preferred stock is classified in temporary equity (outside of permanent equity) on the accompanying consolidated balance sheets.

7. Stockholders' Deficit

Common Stock

As of December 31, 2020, the Company was authorized to issue 120,000,000 shares of common stock, $0.001 par value per share.

On January 21, 2019, the Company issued 599,222 shares of common stock upon conversion of a portion of the Company's outstanding indebtedness with a principal amount of $1.0 million and accrued and unpaid interest on the principal of $49,000. In accordance with the Series G Certificate of Designation, the issuance of common stock at the conversion price of $1.75 per share triggered further adjustment in the conversion price and conversion ratio of the Series G Preferred Stock from $9.92 per share and 0.1008 shares to $9.70 per share and 0.1031 shares, respectively. The deemed dividend as a result of the down-round adjustment was immaterial.

Common Stock Warrants

In October 2014 and March 2016, the Company issued warrants exercisable for 62,047 and 11,159,995 shares of common stock, respectively, at an exercise price of $1.75 per share to certain placement agents and existing investors in connection with financing arrangements. As of December 31, 2019, 2,483 common stock warrants issued in October 2014 were outstanding. In April 2020, the common stock warrants issued in October 2014 expired unexercised. The common stock warrants issued in March 2016 expire on March 15, 2021. As of December 31, 2020 and 2019, 3,948,569 common stock warrants issued in March 2016 were outstanding.

Common Stock Reserved for Future Issuance

At December 31, 2020, the Company had shares of common stock reserved for future issuance as follows:

Options outstanding	4,255,371
Common stock warrants outstanding	3,948,569
Common stock available for issuance under the 2010 Plan	5,281,104
Redeemable convertible preferred stock	2,457,143
Non-redeemable convertible preferred stock	3,675,135
Total	19,617,322

8. Equity Incentive Plans

The Company adopted the 2006 Equity Participation Plan (as amended the "2006 Plan"), which provides for the grant of stock options, restricted stock and other equity-based awards. Awards for up to 100,000 shares may be granted to employees, directors and consultants under this Plan. The options granted under the 2006 Plan may be either qualified or non-qualified options. Options may be granted with different vesting terms and expire no later than 10 years from the date of grant. The 2006 Plan expired on November 16, 2016. Options and other equity-based awards granted prior to the expiration of the 2006 Plan will continue in effect until the option or award is exercised or terminates pursuant to its terms. No new awards may be granted under the 2006 Plan following its expiration.

In April 2010, the Company adopted the 2010 Equity Participation Plan, as amended (the "2010 Plan"), which provides for the grant of stock options, restricted stock and other equity-based awards. Awards for up to 9,700,000 shares may be granted to employees, directors and consultants under the 2010 Plan. The options granted under the 2010 Plan may be either qualified or non-qualified options. Options may be granted with different vesting terms and expire no later than 10 years from the date of grant. In June 2020, the Company amended the 2010 Plan to extend the term of the 2010 Plan until March 2030. No other material provisions were amended.

Stock Options

Transactions involving stock options issued to employees, directors and consultants under the 2006 Plan and the 2010 Plan are summarized below. Options issued have a maximum life of 10 years. The following tables summarize the changes in options outstanding and the related exercise prices for the Company's common stock options issued:

	Number of Outstanding Options	Weighted-Average Exercise	Weighted-Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in thousands)
Outstanding at December 31, 2019	4,936,673	$ 3.38	8.09	$ —
Granted	245,714	$ 1.08		
Forfeited or canceled	(923,994)	$ 2.01		
Expired	(3,022)	$ 193.50		
Outstanding at December 31, 2020	4,255,371	$ 3.41	7.25	$ —
Vested and expected to vest at December 31, 2020	4,219,033	$ 3.43	7.24	$ —
Exercisable at December 31, 2020	3,541,030	$ 3.81	7.04	$ —

Restricted Stock Awards

Restricted stock awards are grants that entitle the holder to acquire shares of common stock at zero or a fixed price, which is typically nominal. The Company accounts for the restricted stock awards as issued and outstanding common stock, even though the shares covered by a restricted stock award cannot be sold, pledged, or otherwise disposed of until the award vests and any unvested shares may be reacquired by the Company for the original purchase price following the awardee's termination of service.

The fair value of restricted stock awards is based on the market value of the common stock on the date of grant. For the years ended December 31, 2020 and 2019, no restricted stock awards were awarded or vested. As of December 31, 2020, there was no unrecognized compensation costs related to unvested awards.

Stock-Based Compensation

The weighted-average assumptions used in the Black-Scholes option valuation model to determine the fair value of stock options grants for the years ended December 31, 2020 and 2019 were as follows:

	Years Ended December 31,	
	2020	2019
Risk-free interest rate	0.37%	2.44%
Expected stock price volatility	88.82%	84.95%
Expected dividend yield	0%	0%
Expected life of options (in years)	5.36	5.71

Total stock-based compensation expense for the years ended December 31, 2020 and 2019 was comprised of the following (in thousands):

	Years Ended December 31,	
	2020	2019
Cost of sales	$ 87	$ 112
Research and development	135	519
Selling and marketing	78	118
General and administrative	979	1,338
Total	$ 1,279	$ 2,087

Unrecognized compensation expense related to stock options as of December 31, 2020 was $604,000, which is expected to be recognized over a weighted-average period of less than one year. Unrecognized compensation expense related to stock options as of December 31, 2019 was $1.9 million, which was expected to be recognized over a weighted-average period of approximately 1.51 years.

9. Related Party Transactions

During the first quarter of 2011, the Company executed an operating lease for its corporate offices with S Real Estate Holdings LLC. S Real Estate Holdings LLC is owned by Dr. Russell Kern, the Company's Executive Vice President and Chief Scientific Officer and a director and was previously owned by Dr. Andrey Semechkin, the Company's Chief Executive Officer and Co-Chairman of the Board of Directors. The lease agreement was negotiated at arm's length and was reviewed by the Company's outside legal counsel. The terms of the lease were reviewed by a committee of independent directors, and the Company believes that, in total, those terms are at least as favorable to the Company as could be obtained for comparable facilities from an unaffiliated party. In March 2017, the Company signed an amendment to the lease agreement to extend the term of the lease until 2020 and include annual adjustments to the monthly lease payments. In March 2020, the Company entered into an amendment to the lease agreement. The amendment extended the term of the lease for three years (until February 28, 2023) and provided for a 2% increase in monthly rent. For the years ended December 31, 2020 and 2019, the Company recorded $169,000 and $160,000, respectively, in operating lease cost that was related to the facility lease arrangement with related parties.

Between March 6, 2018 and August 8, 2018, to obtain funding for working capital purposes, the Company borrowed a total of $2.0 million from Dr. Semechkin and issued an unsecured non-convertible promissory note in the principal amount of $2.0 million (the "Note") to Dr. Semechkin (the "Noteholder"). The outstanding principal amount under the Note accrued interest at a rate of 4% per annum. The Note was due and payable November 1, 2018 and on November 12, 2018, to satisfy the indebtedness incurred on the Note, an amendment to the Note was entered into extending the due date to January 15, 2019.

On January 21, 2019, the Company entered into a Note Conversion Agreement with Dr. Semechkin (the "Conversion Agreement"). The Conversion Agreement provides for the conversion of a total of $1.05 million (representing $1.0 million of principal and $49,000 of accrued interest, representing all accrued interest on the amount owed to Dr. Semechkin through January 21, 2019) under the promissory note issued to Dr. Semechkin on August 8, 2018, into a total of 599,222 shares of the Company's common stock, representing a conversion price of $1.75 per share, which was greater than the fair value of common stock on the date of conversion at a price of $1.60 per share. Dr. Semechkin took less than fair value to avoid further dilution by triggering down-round adjustments to outstanding common stock warrants and convertible preferred stock. Due to Dr. Semechkin's role and controlling interest in the Company, no gain was recorded by the Company upon conversion and the excess was recorded within additional paid-in capital due to the absence of retained earnings. Under the Conversion Agreement, the remaining $1.0 million owed to Dr. Semechkin under the Note has been reflected in a new unsecured, non-convertible promissory note in the principal amount of $1.0 million (the "Conversion Note"). The outstanding principal amount under the Conversion Note accrued interest at a rate of 4.5% per annum. The Conversion Note was due and payable on January 15, 2020.

On April 17, 2019, to obtain additional funding for working capital purposes, the Company issued an unsecured, non-convertible promissory note (the "New Promissory Note") in the amount of $1.8 million to Dr. Semechkin. Dr. Semechkin surrendered the Conversion Note and provided an additional $800,000 of funds to the Company. The outstanding principal amount accrued interest at a rate of 4.5% per annum and was due and payable on January 15, 2020.

On December 17, 2019, to obtain additional funding for working capital purposes the Company issued an unsecured, non-convertible promissory note in the principal amount of $2.3 million (the "New Note") to Dr. Andrey Semechkin. On December 17, 2019, the Noteholder provided an additional $500,000 of funds to the Company and surrendered the New Promissory Note, in return for the New Note. The outstanding principal amount under the New Note accrues interest at a rate of 4.5% per annum. The New Note, including

outstanding amounts of principal and accrued interest, is due and payable January 15, 2021 but may be pre-paid by the Company without penalty at any time.

On January 15, 2021, the Company and Dr. Semechkin agreed to extend the maturity date of the New Note to January 15, 2022. Additionally, on March 5, 2021, the Company issued Dr. Semechkin a promissory note in the amount of $2,650,000, and in exchange, Dr. Semechkin surrendered the New Note and provided an additional $350,000 of funds to the Company. See Note 13 – Subsequent Events, for further information.

10. Income Taxes

As of December 31, 2020, the Company had available net operating loss carryforwards for federal income tax reporting purposes of approximately $73.0 million and for state income tax reporting purposes of approximately $52.6 million, which may be applied against future taxable income and will expire in various years through 2037. However, any net operating loss carryforwards generated in 2018 and future years will not expire and are carried forward indefinitely. The increase in federal operating loss carryforwards for the year ended December 31, 2020 was approximately $2.0 million.

The amount of and ultimate realization of the benefits from the operating loss carryforwards for income tax purposes is dependent, in part, upon the tax laws in effect, the future earnings of the Company, and other future events, the effects of which cannot be determined at this time. Because of the uncertainty surrounding the realization of the loss carryforwards, the Company has established a valuation allowance equal to the tax effect of the loss carryforwards, research and development credits, and accruals; therefore, no net deferred tax asset has been recognized. A reconciliation of the statutory federal income tax rate and the effective income tax rate for the years ended December 31, 2020 and 2019 follows:

	Years Ended December 31,	
	2020	2019
Statutory federal income tax rate	21.0%	21.0%
Permanent items	(2.8%)	3.0%
State income taxes, net of federal taxes	(0.1%)	(0.4%)
Foreign	(0.3%)	5.0%
Change in valuation allowance	(19.1%)	(13.1%)
Lease accounting	(0.1%)	1.8%
Stock options true-up	(5.4%)	(18.3%)
Other	6.8%	1.0%
Effective income tax rate	0.0%	0.0%

The Company files income tax returns in the U.S. federal jurisdiction and various states. The Company is no longer subject to U.S. federal, state and local income tax examinations by tax authorities for years before 2016. The Company does not have any material uncertain tax positions as of December 31, 2020 and 2019. The Company does not believe it is reasonably possible that the total amount of unrecognized tax benefits as of December 31, 2020 will materially change in the next 12 months.

The Company may be subject to IRC Code Section 382 and 383, which could limit the amount of the net operating loss and tax credit carryovers that can be used in future years. The Company has not completed a study to assess whether an ownership change has occurred, as defined by IRC Sections 382 and 383, or whether there have been ownership changes since the Company's formation due to the complexity and cost associated with such study, and the fact that there may be additional such ownership changes in the future. The Company estimates that if such a change did occur, the federal and state net operating loss carryforwards and research and development credit carryforwards that can be utilized in the future would be significantly limited. There can be no assurance that the Company will ever be able to realize the benefit of some or all of the federal and state loss carryforwards or credit carryforwards, either due to ongoing operating losses or due to ownership change limitations.

The CARES Act provides sweeping tax changes in response to the COVID-19 pandemic. Some of the more significant provisions are removal of certain limitations on utilization of net operating losses, increasing the loss carryback period for certain losses to five years, and increasing the ability to deduct interest expense, as well as amending certain provisions of the previously enacted Tax Cuts and Jobs Act. As of December 31, 2020, the Company has not recorded any material adjustments to its income tax provision related to the provisions within the CARES Act. The Company will continue to analyze the impact that the CARES Act will have, if any, on its financial position, results of operations or cash flows.

Significant components of deferred tax assets and liabilities are as follows (in thousands):

	December 31, 2020	December 31, 2019
Net operating loss carryforwards	$ 19,152	$ 18,452
Stock-based compensation	1,936	1,980
Research and development tax credit	2,899	2,871
Other	397	547
Non-current deferred tax assets	24,384	23,850
Valuation allowance	(24,384)	(23,850)
Net deferred tax assets	$ —	$ —

11. Commitments and Contingencies

Leases

The Company has three operating leases for real estate in California and Maryland:

- Carlsbad, California – corporate offices with a term date of February 2023 and leased from a related party (see also Note 9 – Related Party Transactions);
- Oceanside, California – primary research facility and laboratory space with a term date of December 2021;
- Frederick, Maryland – mixed laboratory and administrative space with a term date of November 2025.

The Company's operating leases for real estate are subject to additional variable charges for common area maintenance and other variable costs, and do not include an option to extend the lease term. Right-of-use assets and lease liabilities are recognized at the lease commencement date based on the present value of future minimum lease payments over the lease term. As of December 31, 2020, total right-of-use assets and operating lease liabilities were approximately $874,000 and $1.2 million, respectively. All operating lease expense is recognized on a straight-line basis over the lease term. As of December 31, 2020, the Company had no finance leases.

Information related to the Company's right-of-use assets and related lease liabilities were as follows (in thousands):

	Years Ended December 31,	
	2020	2019
Operating lease costs	$ 464	$ 490
Short-term lease costs	7	11
Variable lease costs	211	228
Total lease costs	$ 682	$ 729
Operating cash used for operating leases	509	486
Right-of-use asset obtained in exchange for operating lease liability	421	—
Weighted-average remaining lease term (years)	3.90	5.02
Weighted-average discount rate	17.05%	17.65%

Maturities of lease liabilities as of December 31, 2020 were as follows (in thousands):

Years ending December 31,	
2021	$ 517
2022	394
2023	255
2024	233
2025	240
Total minimum lease payments	1,639
Less: imputed interest	(448)
Total future minimum lease payments	1,191
Less: operating lease liabilities, current	(346)
Operating lease liabilities, net of current portion	$ 845

Licensed Patents

The Company has a minimum annual license fee of $75,000 payable in two installments per year to Astellas Pharma pursuant to the amended UMass IP license agreement. The license agreement with Astellas Pharma may be terminated by the Company at any time with a 30-day notice.

12. Segments and Geographic Information

The Company operates the business on the basis of three reporting segments, the parent company and two business units: ISCO – therapeutic market; LCT – biomedical market, and; LSC – anti-aging market.

The Company does not measure the performance of its segments on any asset-based metrics. Therefore, segment information is presented only for operating income (loss). Revenues, expenses and operating income (loss) by market segment were as follows (in thousands):

	Years Ended December 31,	
	2020	2019
Revenues:		
Biomedical market	$ 5,594	$ 7,499
Anti-aging market	1,534	1,973
Total revenues	7,128	9,472
Operating expenses:		
Therapeutic market	3,410	6,345
Biomedical market	4,785	6,156
Anti-aging market	1,751	2,699
Total operating expenses	9,946	15,200
Operating income (loss)		
Therapeutic market	(3,410)	(6,345)
Biomedical market	809	1,343
Anti-aging market	(217)	(726)
Total operating loss	$ (2,818)	$ (5,728)

Geographic Information

The Company's wholly-owned subsidiaries are located in Maryland, California and Melbourne, Australia, and have customer and vendor relationships worldwide. Significant revenues in the following regions are those that are attributable to the individual country within the region to which the product was shipped (in thousands):

	Years Ended December 31,	
	2020	2019
North America	$ 6,277	$ 8,583
Asia	538	540
Europe	290	325
All other regions	23	24
Total	$ 7,128	$ 9,472

13. Subsequent Events

On January 15, 2021, the Company and Dr. Semechkin, the Company's Co-Chairman and Chief Executive Officer, agreed to extend the maturity date of the New Note to January 15, 2022. No other terms of the note were modified as a result of the extension. The New Note will continue to accrue interest at a rate of 4.5% per annum and may be pre-paid by the Company without penalty at any time.

On March 5, 2021, to obtain additional funding for working capital purposes, the Company issued an unsecured, non-convertible promissory note (the "2021 Promissory Note") in the amount of $2,650,000 to Dr. Semechkin. In exchange, Dr. Semechkin surrendered the New Note and provided an additional $350,000 of funds to the Company. The 2021 Promissory Note, including outstanding amounts of principal and accrued interest, is due and payable on January 15, 2022 but may be pre-paid by the Company without penalty at any time.

On March 18, 2021, the Company received a loan of $474,147 as a Second Draw of the Paycheck Protection Program. The Second Draw is available to certain eligible borrowers and may be used to help fund payroll and benefit costs, rent, utilities, worker protection costs related to COVID-19, certain supplier costs and expenses for operations, and other related expenses. The Company's Second Draw has a five-year term and bears interest at a rate of 1% per annum. Principal and interest payments are deferred until August 2022, at which time the loan balance is payable in monthly installments unless the Company applies for, and receives, forgiveness in accordance with the CARES Act, as amended, and the terms of the loan executed by the Company and its lender.

DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES
EXCHANGE ACT OF 1934

International Stem Cell Corporation ("ISCO," "we," "our," or "us") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock.

DESCRIPTION OF CAPITAL STOCK

The following summary of the terms of our capital stock is based upon our Amended and Restated Certificate of Incorporation, as amended (the "Certificate of Incorporation") and our Amended and Restated Bylaws, as amended (the "Bylaws"). The summary is not complete, and is qualified by reference to our Certificate of Incorporation and our Bylaws, which are filed as exhibits to our Annual Report on Form 10-K and are incorporated by reference herein. We encourage you to read our Certificate of Incorporation, our Bylaws and the applicable provisions of the Delaware General Corporation Law (the "DGCL") for additional information.

Authorized Shares of Capital Stock

Our authorized capital stock consists of 120,000,000 (One Hundred Twenty Million) shares of common stock, $0.001 par value, and 20,000,000 (Twenty Million) shares of preferred stock, $0.001 par value, 5,000,000 of which is designated as Series B Convertible preferred stock ("Series B preferred stock"), 50 of which is designated as Series D Convertible preferred stock ("Series D preferred stock"), 5,000,000 of which is designated as Series G Convertible preferred stock ("Series G preferred stock"), 2,000 of which is designated as Series I-1 Convertible preferred stock ("Series I-1 preferred stock") and 4,310 of which is designated as Series I-2 Convertible preferred stock ("Series I-2 preferred stock" and, together with the Series I-1 preferred stock, the "Series I preferred stock").

Our Board of Directors is authorized to establish one or more series of preferred stock and to set the powers, preferences and rights, as well as the qualifications, limitations or restrictions, of such series. These rights of the series of preferred stock may include, without limitation, dividend rights, dividend rates, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions) and liquidation preferences.

Listing

Our common stock is quoted on the OTCQB under the symbol "ISCO." Our preferred stock is not listed or quoted on any market.

Voting Rights

The holders of common stock are entitled to one vote per share on all matters voted on by the stockholders, including the election of directors. Except as otherwise provided by law, our Certificate of Incorporation or our Bylaws, matters will generally be decided by a majority of the shares present in person or represented by proxy at the meeting and entitled to vote on the matter. Our stockholders do not have the right to vote cumulatively.

Rights upon Liquidation

Subject to any preferential rights of outstanding shares of preferred stock, upon any liquidation or dissolution of ISCO, holders of our common stock are entitled to share pro rata in all remaining assets legally available for distribution to stockholders.

Dividend Rights

Subject to any preferential dividend rights granted to the holders of any shares of our preferred stock that may at the time be outstanding, holders of our common stock are entitled to receive dividends as may be declared from time to time by our Board of Directors out of funds legally available therefor.

Other Rights and Preferences

Our common stock has no sinking fund, redemption provisions, or preemptive, conversion, or exchange rights. There are no restrictions on transfer of our common stock, except as required by law.

Board of Directors

Our Bylaws provide that, subject to the rights of any holders of any series of preferred stock authorized, the authorized number of directors shall be fixed from time to time by a resolution duly adopted by the Board of Directors.

Our Bylaws provide that, subject to the rights of any holders of any series of preferred stock authorized, directors may be removed with or without cause by the affirmative vote of the holders of two-thirds of the shares entitled to vote at an election of directors.

Our Bylaws provide that a vacancy on the Board of Directors resulting from an increase in the number of authorized directors or death, resignation, retirement, disqualification, removal or other causes shall be filled by a majority of the directors then in office.

Certain Anti-Takeover Effects

Certain provisions of our Certificate of Incorporation and Bylaws may be deemed to have an anti-takeover effect.

Business Combinations. Section 203 of the DGCL restricts a wide range of transactions ("business combinations") between a corporation and an interested stockholder. An "interested stockholder" is, generally, any person who beneficially owns, directly or indirectly, 15% or more of the corporation's outstanding voting stock. Business combinations are broadly defined to include (i) mergers or consolidations with, (ii) sales or other dispositions of more than 10% of the corporation's assets to, (iii) certain transactions resulting in the issuance or transfer of any stock of the corporation or any subsidiary to, (iv) certain transactions resulting in an increase in the proportionate share of stock of the corporation or any subsidiary owned by, or (v) receipt of the benefit (other than proportionately as a stockholder) of any loans, advances or other financial benefits by, an interested stockholder. Section 203 provides that an interested stockholder may not engage in a business combination with the corporation for a period of three years from the time of becoming an interested stockholder unless (a) the Board of Directors approved either the business combination or the transaction which resulted in the person becoming an interested stockholder prior to the time that person became an interested stockholder; (b) upon consummation of the transaction which resulted in the person becoming an interested stockholder, that person owned at least 85% of the corporation's voting stock (excluding, for purposes of determining the voting stock outstanding (but not the outstanding voting stock owned by the interested stockholder) shares owned by persons who are directors and also officers and shares owned by certain employee stock plans); or (c) the business combination is approved by the Board of Directors and authorized by the affirmative vote of at least $66^{2/3}\%$ of the outstanding voting stock not owned by the interested stockholder. The restrictions on business combinations with interested stockholders contained in Section 203 of the DGCL do not apply to a corporation whose certificate of incorporation or bylaws contains a provision expressly electing not to be governed by the statute. Our Certificate of Incorporation contains a provision electing to "opt-out" of Section 203.

Advance Notice and Proxy Access Provisions. Our Bylaws require timely advance notice for stockholders seeking to bring business before our annual meeting of stockholders or to nominate candidates for election as directors at our annual meeting of stockholders and specify certain requirements regarding the form and content of a stockholder's notice. The chair of the annual meeting has the ability to determine and declare at the meeting that business was not properly brought before the meeting in accordance with the provisions of our Bylaws, and, if he or she should so determine, he or she shall so declare at the meeting that any such business not properly brought before the meeting shall not be transacted.

These provisions might preclude our stockholders from bringing matters before our annual meeting of stockholders or from making nominations for directors at our annual meeting of stockholders if the proper procedures are not followed.

Special Meetings. Special meetings of stockholders may be called at any time by the Chair of the Board, the Chief Executive Officer, the President or two or more members of our Board of Directors.

Stockholder Action by Written Consent without a Meeting. Our Bylaws provides that action may be taken by the stockholders by written consent and specify certain requirements regarding the form and content of a stockholder's notice who desires to take such action.

Additional Authorized Shares of Capital Stock. The additional shares of authorized common stock and preferred stock available for issuance under our Certificate of Incorporation could be issued at such times, under such circumstances and with such terms and conditions as to impede a change in control.

Transfer Agent and Registrar

Securities Transfer Corporation is the transfer agent for our common stock.

U.S. Small Business Administration

NOTE

SBA Loan #	2487468609
SBA Loan Name	International Stem Cell Corporation
Date	March 18, 2021
Loan Amount	$474,147.00
Interest Rate	1.00%
Borrower	International Stem Cell Corporation
Operating Company	N/A
Lender	Endeavor Bank

1. PROMISE TO PAY:

In return for the Loan, Borrower promises to pay to the order of Lender the amount of Four hundred and seventy four thousand one hundred and forty seven 00/100 Dollars, interest on the unpaid principal balance, and all other amounts required by this Note.

2. DEFINITIONS:

"Collateral" means any property taken as security for payment of this Note or any guarantee of this Note.
"Guarantor" means each person or entity that signs a guarantee of payment of this Note.
"Loan" means the loan evidenced by this Note.
"Loan Documents" means the documents related to this loan signed by Borrower, any Guarantor, or anyone who pledges collateral.
"SBA" means the Small Business Administration, an Agency of the United States of America.

3. PAYMENT TERMS:

Borrower must make all payments at the place Lender designates. The payment terms for this Note are:
The interest rate is 1% per year, beginning on the date of this Note. To the extent the loan amount is not forgiven under the Paycheck Protection Program (Sections 1102 and 1106 of the Coronavirus Aid, Relief, and Economic Security Act (CARES Act)), Borrower must make equal monthly payments of principal and interest, beginning seventeen (17) months from the date of this Note, until the maturity date, which is five (5) years from the date of the Note. This Note may be prepaid in part or in full, at any time, without penalty.

4. DEFAULT:

Borrower is in default under this Note if Borrower does not make a payment when due under this Note, or if Borrower or Operating Company:
A. Fails to do anything required by this Note and other Loan Documents;
B. Defaults on any other loan with Lender;
C. Does not preserve, or account to Lender's satisfaction for, any of the Collateral or its proceeds;
D. Does not disclose, or anyone acting on their behalf does not disclose, any material fact to Lender or SBA;
E. Makes, or anyone acting on their behalf makes, a materially false or misleading representation to Lender or SBA;
F. Defaults on any loan or agreement with another creditor, if Lender believes the default may materially affect Borrower's ability to pay this Note;
G. Fails to pay any taxes when due;
H. Becomes the subject of a proceeding under any bankruptcy or insolvency law;
I. Has a receiver or liquidator appointed for any part of their business or property;
J. Makes an assignment for the benefit of creditors;
K. Has any adverse change in financial condition or business operation that Lender believes may materially affect Borrower's ability to pay this Note;
L. Reorganizes, merges, consolidates, or otherwise changes ownership or business structure without Lender's prior written consent; or
M. Becomes the subject of a civil or criminal action that Lender believes may materially affect Borrower's ability to pay this Note.

5. LENDER'S RIGHTS IF THERE IS A DEFAULT:

Without notice or demand and without giving up any of its rights, Lender may:
A. Require immediate payment of all amounts owing under this Note;
B. Collect all amounts owing from any Borrower or Guarantor;
C. File suit and obtain judgment;
D. Take possession of any Collateral; or
E. Sell, lease, or otherwise dispose of, any Collateral at public or private sale, with or without advertisement.

6. LENDER'S GENERAL POWERS:

Without notice and without Borrower's consent, Lender may:
A. Bid on or buy the Collateral at its sale or the sale of another lienholder, at any price it chooses;
B. Incur expenses to collect amounts due under this Note, enforce the terms of this Note or any other Loan Document, and preserve or dispose of the Collateral. Among other things, the expenses may include payments for property taxes, prior liens, insurance, appraisals, environmental remediation costs, and reasonable attorney's fees and costs. If Lender incurs such expenses, it may demand immediate repayment from Borrower or add the expenses to the principal balance;
C. Release anyone obligated to pay this Note;
D. Compromise, release, renew, extend or substitute any of the Collateral; and
E. Take any action necessary to protect the Collateral or collect amounts owing on this Note.

7. WHEN FEDERAL LAW APPLIES:

When SBA is the holder, this Note will be interpreted and enforced under federal law, including SBA regulations. Lender or SBA may use state or local procedures for filing papers, recording documents, giving notice,

foreclosing liens, and other purposes. By using such procedures, SBA does not waive any federal immunity from state or local control, penalty, tax, or liability. As to this Note, Borrower may not claim or assert against SBA any local or state law to deny any obligation, defeat any claim of SBA, or preempt federal law.

8. SUCCESSORS AND ASSIGNS:

Under this Note, Borrower and Operating Company include the successors of each, and Lender includes its successors and assigns.

9. GENERAL PROVISIONS:

A. All individuals and entities signing this Note are jointly and severally liable.
B. Borrower waives all suretyship defenses.
C. Borrower must sign all documents necessary at any time to comply with the Loan Documents and to enable Lender to acquire, perfect, or maintain Lender's liens on Collateral.
D. Lender may exercise any of its rights separately or together, as many times and in any order it chooses. Lender may delay or forgo enforcing any of its rights without giving up any of them.
E. Borrower may not use an oral statement of Lender or SBA to contradict or alter the written terms of this Note.
F. If any part of this Note is unenforceable, all other parts remain in effect.
G. To the extent allowed by law, Borrower waives all demands and notices in connection with this Note, including presentment, demand, protest, and notice of dishonor. Borrower also waives any defenses based upon any claim that Lender did not obtain any guarantee; did not obtain, perfect, or maintain a lien upon Collateral; impaired Collateral; or did not obtain the fair market value of Collateral at a sale.

10. STATE-SPECIFIC PROVISIONS:

Not Applicable

11. BORROWER'S NAME(S) AND SIGNATURE(S):

By signing below, each individual or entity becomes obligated under this Note as Borrower.

International Stem Cell Corporation

By: Andrey Semechkin, CEO

Andrey Semechkin
Andrey Semechkin (Mar 18, 2021 10:00 PDT)

Authorized Signer

Mar 18, 2021

Date

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

International Stem Cell Corporation
San Diego, California

We hereby consent to the incorporation by reference in the Registration Statements on Form S-1 (Nos. 333-210840, 333-201589, and 333-199799) and Form S-8 (Nos. 333-226844, 333-211411, 333-206930, 333-169549, 333-166883, 333-166421, 333-166420, 333-164539, 333-159424, 333-159421, and 333-150920) of International Stem Cell Corporation (the "Company") of our report dated March 30, 2021, relating to the consolidated financial statements, which appears in this Form 10-K. Our report contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

/s/ BDO USA, LLP

San Diego, California
March 30, 2021

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Andrey Semechkin, certify that:

1. I have reviewed this annual report on Form 10-K of International Stem Cell Corporation;

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 periods 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 period 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.

Date: March 30, 2021

/S/ ANDREY SEMECHKIN

Andrey Semechkin

Chief Executive Officer

(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Sophia Garnette, certify that:

1. I have reviewed this annual report on Form 10-K of International Stem Cell Corporation;

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 periods 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 period 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.

Date: March 30, 2021

/s/ Sophia Garnette

Sophia Garnette

Vice President, Legal Affairs and Operations

(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
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 International Stem Cell Corporation (the "Company") on Form 10-K for the year ended December 31, 2020 as filed with the Securities and Exchange Commission on March 30, 2021 (the "Report"), I, Andrey Semechkin, Chief Executive Officer 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, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 30, 2021

/S/ ANDREY SEMECHKIN
Andrey Semechkin
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO
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 International Stem Cell Corporation (the "Company") on Form 10-K for the year ended December 31, 2020 as filed with the Securities and Exchange Commission on March 30, 2021 (the "Report"), I, Sophia Garnette, Vice President, Legal Affairs & Operations 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, that, to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 30, 2021

/s/ Sophia Garnette
Sophia Garnette
Vice President, Legal Affairs & Operations
(Principal Financial Officer)