

BioRestorative Therapies, Inc.  
Form S-1  
October 05, 2017

**As filed with the Securities and Exchange Commission on October 5, 2017**

**Registration No. 333-**

**UNITED STATES**

**SECURITIES AND EXCHANGE COMMISSION**

**Washington, D.C. 20549**

**FORM S-1**

**REGISTRATION STATEMENT**

***UNDER***

***THE SECURITIES ACT OF 1933***

**BIORESTORATIVE THERAPIES, INC.**

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

<b>Delaware</b>	<b>8099</b>	<b>91-1835664</b>
<b>(State or other jurisdiction of</b>	<b>(Primary Standard Industrial</b>	<b>(I.R.S. Employer</b>
<b>incorporation or organization)</b>	<b>Classification Code Number)</b>	<b>Identification Number)</b>

**40 Marcus Drive, Suite One**

**Melville, New York 11747**

**(631) 760-8100**

**(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)**

**Mark Weinreb, President and Chief Executive Officer**

**BioRestorative Therapies, Inc.**

**40 Marcus Drive, Suite One**

**Melville, New York 11747**

**(631) 760-8100**

**(Name, address, including zip code, and telephone number, including area code, of agent for service)**

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**(516) 296-7048**

**(212) 370-1300**

**Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this registration statement.**

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box.  [X]

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.  [ ]

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If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. [ ]

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. [ ]

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 (check one):

Large accelerated filer [ ] Accelerated filer [ ]  
 Non-accelerated filer [ ] (Do not check if a smaller reporting company) Smaller reporting company [X]  
 Emerging growth company [X]

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 7(a)(2)(B) of the Securities Act. [ ]

**Calculation of Registration Fee**

<b>Title of each class of securities to be registered</b>	<b>Proposed maximum aggregate offering price <sup>(1)</sup></b>	<b>Amount of registration fee <sup>(2)</sup></b>
Common Stock, par value \$.001 per share <sup>(3)</sup>	\$-	\$-
Series A Convertible Preferred Stock, par value \$.01 per share <sup>(3)</sup>	\$-	\$-
Common Stock Purchase Warrants <sup>(4)</sup>	\$-	\$-
Placement Agent’s Warrant to Purchase Common Stock <sup>(4)</sup>	\$-	\$-
Common Stock Underlying Common Stock Purchase Warrants <sup>(3)</sup>	\$-	\$-
Common Stock Underlying Placement Agent’s Warrant <sup>(3)(5)</sup>	\$-	\$-
<b>TOTAL REGISTRATION FEE</b>	<b>\$31,500,000</b>	<b>\$ 3,921.75</b>

(1) Estimated solely for the purpose of calculating the amount of the registration fee pursuant to Rule 457(o) under the Securities Act of 1933.

(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

Pursuant to Rule 416 under the Securities Act of 1933, the shares of common stock and preferred stock registered hereby also include an indeterminate number of additional shares of common stock and preferred stock as may (3) from time to time become issuable by reason of stock splits, stock dividends, recapitalizations or other similar transactions.

(4) No registration fee pursuant to Rule 457(g) under the Securities Act of 1933.

Estimated solely for the purposes of calculating the registration fee pursuant to Rule 457(g) under the Securities Act of 1933. The warrant is exercisable at a per share exercise price equal to 125% of the public offering price. As (5) estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(g) under the Securities Act, the proposed maximum aggregate offering price of the shares of common stock underlying the placement agent's warrant is \$ (which is equal to 125% of 8% of \$ ).

**The registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until this registration statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.**

The information in this preliminary prospectus is not complete and may be changed. These securities may not be sold until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS SUBJECT TO COMPLETION DATED OCTOBER 5, 2017

**Up to \$15,000,000**

**Common Stock**

**Series A Convertible Preferred Stock**

**Warrants to Purchase Common Stock**

We are offering up to \_\_\_\_\_ shares of our common stock, together with warrants to purchase up to \_\_\_\_\_ shares of our common stock (and the shares issuable from time to time upon exercise of the warrants), pursuant to this prospectus. The shares and warrants will be separately issued and sold to purchasers in equal proportion. Each warrant will have an exercise price of \$ \_\_\_\_\_ per share ( \_\_\_\_\_ % of the public offering price per share of common stock in this offering), will be exercisable upon issuance and will expire \_\_\_\_\_ years from the date of issuance.

We are also offering to those purchasers, if any, whose purchase of common stock and warrants in this offering would result in the purchaser (together with its affiliates and certain related parties) beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock immediately following the consummation of this offering, the opportunity to purchase, if they so choose, shares of Series A convertible preferred stock, par value \$.01 per share, referred to as Series A preferred stock, together with warrants to purchase shares of common stock. Each share of Series A preferred stock is convertible at any time at the holder's option into a number of shares of common stock equal to \$1,000 divided by \$ \_\_\_\_\_, referred to as the "Conversion Price", subject to adjustment for reverse stock splits, stock splits and the like. Purchasers of the Series A preferred stock will also receive warrants to purchase a number of shares of our common stock equal to \_\_\_\_\_ % of the shares of common stock issuable upon conversion of the Series A preferred stock. The public offering price per combined share of Series A preferred stock and related warrant is \$1,000. The shares of Series A preferred stock and warrants will be separately issued and sold to purchasers in equal proportion. Each warrant will have an exercise price of \$ \_\_\_\_\_ per share ( \_\_\_\_\_ % of the Conversion Price of the Series A preferred stock), will be exercisable upon issuance and will expire \_\_\_\_\_ years from the date of issuance.

Our common stock is quoted on the OTCQB market under the symbol "BRTX." On October 4, 2017, the last reported sale price of our common stock on the OTCQB market was \$3.15 per share.

We intend to apply to list our common stock and the warrants being sold in this offering on The Nasdaq Capital Market under the symbols "BRTX" and "BRTXW", respectively. No assurance can be given that our application will be approved. If it is not, our shares of common stock, including the shares we sell in this offering, will continue to be quoted for trading on the OTCQB market. However, if the shares and warrants are not listed on Nasdaq, we will only be able to sell the shares and warrants to certain types of investors, such as institutional investors, and in the limited states in which we have made blue sky filings in connection with this offering. As a result, this may limit the number of shares and warrants we can sell in this offering. See "Plan of Distribution" beginning on page 88 of this prospectus. We do not intend to apply for listing of the shares of Series A preferred stock offered pursuant to this prospectus on any securities exchange or trading system.

All references in this prospectus to numbers of shares of common stock and per share information give retroactive effect to the 1-for-20 reverse split of our shares of common stock effected as of July 7, 2015.

**Investing in the offered securities involves a high degree of risk. See “Risk Factors” beginning on page 8 of this prospectus for a discussion of information that you should consider before investing in our securities.**

**NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR DETERMINED IF THIS PROSPECTUS IS TRUTHFUL OR COMPLETE. ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.**

	Combined Per Share of Common Stock and Warrant	Combined Per Share of Series A Preferred Stock and Warrant	<b>Total<sup>(1)</sup></b>
Public offering price	\$	\$	\$
Placement agent fees <sup>(2)</sup>	\$	\$	\$
Proceeds to us, before expenses <sup>(3)</sup>	\$	\$	\$

(1) Assumes the sale of all \$15,000,000 of securities offered by this prospectus.

(2) See “Plan of Distribution” beginning on page 88 of this prospectus for a description of the compensation payable to the placement agent. The registration statement of which this prospectus is a part also covers the placement agent’s warrant and the shares of common stock issuable from time to time upon the exercise of the placement agent’s warrant.

(3) We estimate the total expenses of this offering, excluding the placement agent fees, will be approximately \$ .

We plan to market this offering to potential investors through WestPark Capital, Inc., acting as the placement agent. WestPark Capital, Inc. is marketing the securities offered hereby on a reasonable best efforts basis. The placement agent has no obligation to buy any of the securities from us or to arrange for the purchase or sale of any specific number or dollar amount of the securities. Because there is no minimum offering amount required as a condition to closing in this offering, the actual public offering amount, placement agent’s fees, and proceeds to us, if any, are not presently determinable and may be substantially less than the total maximum offering amounts set forth above. The offering will terminate by , , which is days after the date of this prospectus, unless we sell an aggregate of \$15,000,000 of common stock and warrants (and/or Series A preferred stock and warrants) before that date or we decide to terminate this offering prior to that date. Additionally, we have the right to extend this offering until , which is days after the date of this prospectus.

**WestPark Capital, Inc.**

The date of this prospectus is 2017.



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We have not, and the placement agent has not, authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. This prospectus is an offer to sell the securities offered hereby, but only under the circumstances and in the jurisdictions where it is lawful to do so. The information contained in this prospectus or in any applicable free writing prospectus is current only as of its date, regardless of its time of delivery or any sale of our securities. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside the United States: we have not, and the placement agent has not, taken any action that would permit this offering, or the possession or distribution of this prospectus, in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of securities and the distribution of this prospectus outside the United States.

This prospectus includes references to our federally registered trademarks, *BioRestorative Therapies*, the *Dragonfly Logo*, *brtxDISC*, *ThermoStem*, *Stem Cellutrition*, *Stem Pearls* and *Stem the Tides of Time*. The Dragonfly Logo is also registered with the U.S. Copyright Office. This prospectus also includes references to trademarks, trade names and service marks that are the property of other organizations. Solely for convenience, trademarks and trade names referred to in this prospectus appear without the ®, <sup>SM</sup> or <sup>TM</sup> symbols, and copyrighted content appears without the use of the symbol ©, but the absence of use of these symbols does not reflect upon the validity or enforceability of the intellectual property owned by us or third parties.

## PROSPECTUS SUMMARY

*This summary is not complete and does not contain all of the information you should consider before investing in the securities offered by this prospectus. Before making an investment decision, you should read the entire prospectus carefully, including the sections titled “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and the notes to the financial statements included elsewhere in this prospectus.*

*Prior to purchasing our securities in this offering, we strongly urge each potential investor to obtain legal and tax advice as to the potential tax and other effects to the investor as a result of purchasing such securities.*

*Unless the context of this prospectus indicates otherwise, the terms “BioRestorative,” “the Company,” “we,” “us” or “our” refer to BioRestorative Therapies, Inc. and its consolidated subsidiaries, and the number of shares of common stock to be outstanding after this offering excludes shares issuable upon any exercise of the warrant to be issued to the placement agent.*

*All references in this prospectus to numbers of shares of common stock and per share information give retroactive effect to the 1-for-20 reverse split of our shares of common stock effected as of July 7, 2015.*

### What We Do

We develop therapeutic products and medical therapies using cell and tissue protocols, primarily involving adult (non-embryonic) stem cells. Our two core programs, as described below, relate to the treatment of disc/spine disease and metabolic disorders:

***Disc/Spine Program.*** Our lead cell therapy candidate, *BRTX-100*, is a product formulated from autologous (or a person’s own) cultured mesenchymal stem cells, or MSCs, collected from the patient’s bone marrow. We intend that the product will be used for the non-surgical treatment of protruding and bulging lumbar discs in patients suffering from chronic lumbar disc disease. The *BRTX-100* production process involves collecting bone marrow from a patient, isolating and culturing stem cells from the bone marrow and cryopreserving the cells. In an outpatient procedure, *BRTX-100* is to be injected by a physician into the patient’s damaged disc. The treatment is intended for patients whose

pain has not been alleviated by non-surgical procedures or conservative therapies and who potentially face the prospect of surgery. In February 2017, we obtained clearance from the Food and Drug Administration, or the FDA, to commence a Phase 2 clinical trial using our lead cell therapy candidate, *BRTX-100*, to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs. We intend to commence such clinical trial during the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding).

***Metabolic Program (ThermoStem).*** We are developing a cell-based therapy to target obesity and metabolic disorders using brown adipose (fat) derived stem cells, or BADSC, to generate brown adipose tissue, or BAT. We refer to this as our *ThermoStem Program*. BAT is intended to mimic naturally occurring brown adipose depots that regulate metabolic homeostasis in humans. Initial preclinical research indicates that increased amounts of brown fat in the body may be responsible for additional caloric burning, as well as reduced glucose and lipid levels. Researchers have found that people with higher levels of brown fat may have a reduced risk for obesity and diabetes. In March 2014, we entered into a Research Agreement with Pfizer, Inc., a global pharmaceutical company, pursuant to which we were engaged to provide research and development services with regard to a joint study of the development and validation of a human brown adipose (fat) cell model. A United States patent related to the *ThermoStem Program* was issued in September 2015, and an Australian patent related to the *ThermoStem Program* was issued in August 2017.

We have also licensed a curved needle device designed to deliver cells and/or other therapeutic products or material to the spine and discs. In August 2015, a United States patent for this device was issued to the licensor, Regenerative Sciences, LLC.

In addition, we have developed a human cellular extract that has been demonstrated in *in vitro* skin studies to increase the production of collagen and fibronectin, which are proteins that are essential to combating the aging of skin. We also offer plant stem cell-based facial creams and beauty products under the *Stem Pearls* brand.

## **Significant Accomplishments**

We have made significant progress toward our goal of offering therapeutic products and medical therapies, using cell and tissue protocols, in the treatment of disc/spine disease and metabolic disorders. In addition to raising approximately \$23,000,000 in equity and debt financings over the past five years, our accomplishments include the following:

### ***Disc/Spine Program***

We have obtained a worldwide (except Asia and Argentina) exclusive license to utilize or sublicense a method for the hypoxic (low oxygen) culturing of cells for use in treating, among other things, disc and spine conditions, including protruding and bulging discs.

We have developed our lead cell therapy product candidate, *BRTX-100*.

Institutional review board, or IRB, approved human studies were undertaken with regard to our licensed culturing technology with success rates and no known adverse results.

We have assembled a management team with significant biotechnology expertise.

We have a four member Scientific Advisory Board, including a Professor of Medicine at the Harvard Medical School and the Dana-Faber Cancer Institute, the Director of Interventional and Endovascular Neurosurgery at George Washington University Medical Center and the former Director of Quality Assurance for the FDA's Center for Biologics Evaluation and Research.

We have engaged a Chief Medical Advisor for Spine Medicine who is a Professor of Clinical Rehabilitation Medicine at Weill Medical College of Cornell and established the Physiatry Department at the Hospital for Special Surgery.

We have engaged highly experienced FDA consultants in connection with our contemplated clinical trials.

We have established a laboratory in Melville, New York that we use for research purposes and the possible development of cellular-based treatment protocols.

We intend to seek clean room certification with regard to a portion of our laboratory.

In February 2017, we obtained clearance from the FDA to commence a Phase 2 clinical trial using *BRTX-100* to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs.

***Metabolic Program (ThermoStem)***

We established a relationship with Pfizer with regard to a joint study of the development and validation of a human brown adipose (fat) cell model.

Our research with regard to the identification of a population of brown adipose derived stem cells was published in *Stem Cells*, a respected stem cell journal.

We have established an extensive and unique human brown adipose library.

We have undertaken pre-clinical animal studies with regard to brown adipose tissue pursuant to which metabolic impact (weight loss; reduced glucose levels) has been observed in mice.

We have begun to evaluate encapsulation technology for potential use as a cell delivery system for our metabolic program.

We have entered into a research collaboration agreement with the University of Pennsylvania with regard to the understanding of brown adipose (fat) biology and its role in metabolic disorders.

A United States patent related to the *ThermoStem Program* was issued in September 2015, and an Australian patent related to the *ThermoStem Program* was issued in August 2017.

## **Key Risks and Uncertainties**

We are subject to numerous risks and uncertainties, including the following:

We have a very limited operating history; we have incurred substantial losses since inception; we expect to continue to incur losses for the near term; and we have a substantial working capital deficiency and a stockholders' deficiency.

Due to the best efforts nature of this offering, no assurance can be given that we will receive sufficient proceeds from this offering to commence and complete the Phase 2 clinical trial using *BRTX-100*.

Even if we sell all of the securities offered by this prospectus, following the offering, we will need to obtain a significant amount of additional financing to complete our clinical trials with regard to our *Disc/Spine Program* and to implement our other programs, including our metabolic brown fat initiative.

Our future success is significantly dependent on the timely and successful development and commercialization of *BRTX-100*, our lead product candidate for the treatment of chronic lumbar disc disease; we anticipate that such commercialization will not take place for at least five years; if we encounter delays or difficulties in the development of this product candidate, as well as any other product candidates, our business prospects would be significantly harmed.

We may experience delays in enrolling patients in our clinical trials which could delay or prevent the receipt of necessary regulatory approvals; we may not complete them at all.

Any disruption to our access to the media (including cell culture media) and reagents we are using in the clinical development of our cell therapy product candidates could adversely affect our ability to perform clinical trials and seek future regulatory submissions.

Our clinical trials may fail to demonstrate adequately the safety and efficacy of our product candidates, which would prevent or delay regulatory approval and commercialization.

We presently lack manufacturing capabilities to produce our 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 products.

We are required to pay certain minimum amounts to maintain our exclusive license rights with regard to our disc/spine technology; the loss of such exclusive rights would have a material adverse effect upon us.

If safety problems are encountered by us or others developing new stem cell-based therapies, our stem cell initiatives could be materially and adversely affected.

Ethical and other concerns surrounding the use of stem cell therapy may negatively impact the public perception of our stem cell products and/or services, thereby suppressing demand for our products and/or services.

We have limited experience in the development and marketing of cell therapies and may be unsuccessful in our efforts to establish a profitable business.



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

We may be subject to significant product liability claims and litigation, including potential exposure from the use of our product candidates in human subjects, and our insurance may be inadequate to cover claims that may arise.

Our inability to obtain reimbursement for our products and services from private and governmental insurers could negatively impact demand for our products and services.

We may not be able to protect our proprietary rights.

We operate in a highly-regulated environment and may be unable to comply with applicable federal, state, local, and international requirements; failure to comply with applicable government regulation may result in a loss of licensure, registration, and approval or other government enforcement actions.

For a more detailed description of the material risks and uncertainties we face, please see “Risk Factors” beginning on page 8 of this prospectus.

### **Reverse Stock Split and Recapitalization**

All references in this prospectus to numbers of shares of common stock and per share information give retroactive effect to the 1-for-20 reverse split of our shares of common stock effected as of July 7, 2015. In connection with the reverse split, we reduced the number of our authorized shares of common stock from 200,000,000 to 30,000,000.

### **Corporate Information**

Our headquarters are located at 40 Marcus Drive, Suite One, Melville, New York 11747. Our telephone number is (631) 760-8100. We maintain certain information on our website at [www.biorestorative.com](http://www.biorestorative.com). Our subsidiary, Stem Pearls, LLC, also has a website at [www.stempearls.com](http://www.stempearls.com). The information on those websites is not (and should not be considered) part of this prospectus and is not incorporated into this prospectus by reference.



## The Offering

Up to \_\_\_\_\_ shares of our common stock, together with warrants to purchase up to \_\_\_\_\_ shares of our common stock. The shares and warrants will be separately transferable immediately upon issuance, but the shares and warrants will be issued and sold to purchasers in equal proportion.

Securities offered by us

We are also offering to those purchasers, if any, whose purchase of common stock and warrants in this offering would result in the purchaser (together with its affiliates and certain related parties) beneficially owning more than 4.99% (or, at the election of the purchaser, 9.99%) of our outstanding common stock following the consummation of this offering, the opportunity to purchase, if they so choose, shares of Series A preferred stock. Purchasers of the Series A preferred stock will also receive warrants to purchase the same number of shares of our common stock that the purchaser would have received had the purchaser acquired common stock instead of Series A preferred stock. See “Description of Securities—Series A Preferred Stock to be Issued as Part of This Offering”.

Description of warrants

Each warrant will have an exercise price equal to \$ \_\_\_\_\_ per share of common stock ( \_\_\_\_\_ % of the public offering price per share of common stock in this offering), will be exercisable upon issuance and will expire \_\_\_\_\_ years from the date of issuance. See “Description of Securities—Warrants to be Issued as Part of this Offering”.

Description of Series A preferred stock

Each share of Series A preferred stock is convertible at any time at the holder’s option into a number of shares of common stock equal to \$1,000 divided by \$ \_\_\_\_\_, referred to as the “Conversion Price”, subject to adjustment for reverse stock splits, stock splits and the like. Notwithstanding the foregoing, we shall not effect any conversion of Series A preferred stock, with certain exceptions, to the extent that, after giving effect to an attempted conversion, the holder of shares of Series A preferred stock (together with such holder’s affiliates, and any persons acting as a group together with such holder or any of such holder’s affiliates) would beneficially own a number of shares of our common stock in excess of 4.99% (or, at the election of the purchaser, 9.99%) of the shares of our common stock then outstanding after giving effect to such conversion. See “Description of Securities—Series A Preferred Stock to be Issued as Part of this Offering”.

Common stock outstanding before this offering

5,599,178 shares

Common stock to be outstanding after this

\_\_\_\_\_ shares

offering(1)

Best efforts offering      The placement agent is selling the securities offered in this prospectus on a reasonable best efforts basis and is not required to sell any specific number or dollar amount of the shares and warrants offered by this prospectus, but will use its reasonable best efforts to sell such securities. See “Plan of Distribution.”

Use of proceeds      We intend to use the net proceeds of this offering as follows: undertaking of clinical trials with respect to *BRTX-100* and its related collection and delivery procedure; pre-clinical research and development with respect to *ThermoStem Program*; repayment of indebtedness; and for general corporate and working capital purposes. For a more complete description of our anticipated use of proceeds from this offering, see “Use of Proceeds.”

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Risk factors      An investment in our securities involves a high degree of risk. You should carefully read and consider the risks discussed under the caption “Risk Factors” beginning on page 8 of this prospectus and all other information included in this prospectus before making a decision to invest in our securities in this offering.

OTCQB  
symbol for our BRTX  
common stock

Listing      We intend to file an application to list our common stock and the warrants offered pursuant to this prospectus on The Nasdaq Capital Market under the symbols “BRTX” and “BRTXW”, respectively. No assurance can be given that our application will be accepted. The closing of this offering is not conditioned upon the acceptance of our application. We do not intend to apply for listing of the shares of Series A preferred stock offered hereby on any securities exchange or trading system.

(1) The number of shares of our common stock to be outstanding after this offering is based on 5,599,178 shares outstanding as of September 27, 2017 and includes      shares of our common stock sold in this offering (assuming the maximum offering size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock). Unless otherwise indicated, the number of outstanding shares of common stock presented in this prospectus assumes the maximum offerings size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock and excludes:

    shares of our common stock issuable upon the exercise of the warrants sold in this offering (assuming the maximum offering size of \$15,000,000 is achieved);

3,275,700 shares of our common stock issuable upon the exercise of outstanding options granted under our 2010 Equity Participation Plan, or the Plan, as of September 27, 2017;

929,300 shares of our common stock that are available for future issuance under the Plan as of September 27, 2017;

3,644,956 shares of our common stock issuable upon the exercise of outstanding warrants as of September 27, 2017; and

Up to      shares of our common stock issuable upon the exercise of the warrant issued to the placement agent in connection with this offering.

**Summary Financial Data**

The following table sets forth summary consolidated financial data of BioRestorative Therapies, Inc. The financial data as of June 30, 2017 and for the six months ended June 30, 2017 and 2016 have been derived from our unaudited condensed consolidated financial statements included in this prospectus under “Index to Financial Statements”. The financial data as of December 31, 2016 and 2015 and for the years then ended have been derived from our audited consolidated financial statements included in this prospectus under “Index to Financial Statements”. The summary consolidated financial results in the table below are not necessarily indicative of our expected future operating results. The following summary historical financial information should be read together with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the historical financial statements and notes thereto appearing in this prospectus under “Index to Financial Statements”.

	For The Six Months Ended June 30, 2017		For The Years Ended December 31, 2016	
	2016	2015	2016	2015
<b>(unaudited)</b>				
Statement of Operations Data:				
Revenues	\$27,000	\$25,280	\$36,355	\$628,915
Cost of sales	-	81	102	261,504
Gross Profit	27,000	25,199	36,253	367,411
Operating Expenses				
Marketing and promotion	38,123	40,695	86,451	168,352
Consulting	1,339,444	834,813	1,605,917	1,394,037
Research and development	1,416,578	1,474,732	2,883,563	2,105,059
General and administrative	2,291,241	1,885,239	3,257,579	3,870,325
Total Operating Expenses	5,085,386	4,235,479	7,833,510	7,537,773
Loss From Operations	(5,058,386)	(4,210,280)	(7,797,257)	(7,170,362)
Other (Expense) Income				
Interest expense	(193,204 )	(87,848 )	(221,608 )	(263,583 )
Amortization of debt discount	(216,909 )	(402,469 )	(542,336 )	(339,443 )
Loss on extinguishment of notes payable, net	(59,938 )	(16,660 )	(58,787 )	(35,677 )
Warrant modification expense	(4,500 )	(28,486 )	(28,486 )	(114,415 )
Gain on settlement of payables	-	-	12,182	-
Total Other Expense	(474,551 )	(535,463 )	(839,035 )	(753,118 )
Net Loss	\$ (5,532,937)	\$ (4,745,743)	\$ (8,636,292)	\$ (7,923,480)

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Net Loss Per Share - Basic and Diluted	\$ (1.06	) \$ (1.26	) \$ (2.10	) \$ (3.20	)
Weighted Average Number of Common	5,196,300	3,776,207	4,105,820	2,472,889	
Shares Outstanding - Basic and Diluted					

	<b>June 30, 2017 (unaudited)</b>	<b>December 31,</b>	
		<b>2016</b>	<b>2015</b>
Balance Sheet Data:			
Cash	\$ 1,891	\$ 31,822	\$ 166,555
Working capital deficiency	\$ (6,947,637)	\$ (5,783,184)	\$ (5,323,179)
Total assets	\$ 1,423,680	\$ 1,580,015	\$ 2,017,006
Total liabilities	\$ 7,138,724	\$ 6,580,297	\$ 5,925,469
Total stockholders' deficiency	\$ (5,715,044)	\$ (5,000,282)	\$ (3,908,463)

## RISK FACTORS

In addition to the other information included in this prospectus and any free writing prospectus we authorize for use in connection with this offering, the following factors should be carefully considered before making a decision to invest in our securities. Any of the following risks, either alone or taken together, could materially and adversely affect our business, financial condition, liquidity, results of operations and prospects. If one or more of these or other risks or uncertainties materialize, or if our underlying assumptions prove to be incorrect, we could be materially and adversely affected. There may be additional risks that we do not presently know or that we currently believe are immaterial that could also materially and adversely affect our business, financial condition, liquidity, results of operations and prospects. In any such case, the market price of our common stock could decline substantially and you could lose all or a part of your investment.

### **Risks Related to Our Business Generally**

***We have a limited operating history; we have incurred substantial losses since inception; we expect to continue to incur losses for the near term; we have a substantial working capital deficiency and a stockholders' deficiency; we believe these conditions indicate that there is substantial doubt about our ability to continue as a going concern within the next twelve months from the date of this filing; the report of our independent registered public accounting firm contains an explanatory paragraph that expresses substantial doubt about our ability to continue as a going concern.***

We have a limited operating history. Since our inception, we have incurred net losses. As of June 30, 2017, we had a working capital deficiency of \$6,947,637 and stockholders' deficiency of \$5,715,044. We believe these conditions indicate that there is substantial doubt about our ability to continue as a going concern within the next twelve months from the date of this filing. The report of our independent registered public accounting firm with respect to our financial statements as of December 31, 2016 and 2015 and for the years then ended indicates that our financial statements have been prepared assuming that we will continue as a going concern. The report states that, since we have incurred net losses since inception and we need to raise additional funds to meet our obligations and sustain our operations, there is substantial doubt about our ability to continue as a going concern. Our plans in regard to these matters are described in footnote 2 to our audited financial statements as of December 31, 2016 and 2015 and for the years then ended, which are included in this prospectus. Our financial statements do not include any adjustments that might result from the outcome of this uncertainty.

***We will need to obtain a significant amount of financing to initiate and complete our clinical trials and implement our business plan; due to the best efforts nature of this offering, no assurance can be given that we will raise sufficient net proceeds from this offering to fund these plans.***



Since our inception, we have not generated significant revenues from our operations and have funded our operations through the sale of our equity securities (approximately \$14,000,000) and debt securities (approximately \$14,000,000). The implementation of our business plan, as described in this prospectus under the caption “Business”, will require the receipt of sufficient equity and/or debt financing to purchase necessary equipment, technology and materials, fund our research and development efforts, retire our outstanding debt and otherwise fund our operations. We anticipate that we will require approximately \$10,000,000 in financing to commence and complete a Phase 2 clinical trial using *BRTX-100*. We anticipate that we will require approximately \$30,000,000 in further additional funding to complete our clinical trials using *BRTX-100* (assuming the receipt of no revenues). We will also require a substantial amount of additional funding if we determine to establish a manufacturing operation with regard to our *Disc/Spine Program* (as opposed to utilizing a third party manufacturer) and to implement our other programs described in this prospectus under the caption “Business”, including our metabolic *ThermoStem Program*. Due to the best efforts nature of this offering, no assurance can be given that we will raise sufficient net proceeds from this offering to commence and complete the Phase 2 clinical trial using *BRTX-100*. In any event, even if all of the securities offered by this prospectus are sold, we will require a substantial amount of additional funding to complete our clinical trials with regard to our *Disc/Spine Program* and to implement our other programs, including our *ThermoStem Program*. No assurance can be given that the anticipated amounts of required funding are correct or that we will be able to accomplish our goals within the timeframes projected. In addition, no assurance can be given that we will be able to obtain any required financing on commercially reasonable terms or otherwise. In the event we do not obtain the financing required for the above purposes, we may have to curtail our development, marketing and promotional activities, which would have a material adverse effect on our business, financial condition and results of operations, and ultimately we could be forced to discontinue our operations and liquidate.

***We will need to obtain additional financing to satisfy debt obligations.***

As described in this prospectus under the caption “Management’s Discussion and Analysis of Financial Condition and Results of Operations – Liquidity and Capital Resources – Availability of Additional Funds”, as of June 30, 2017, our outstanding debt of \$2,654,062, together with interest at rates ranging between 0% and 15% per annum, was due on various dates through February 2018. Subsequent to June 30, 2017 and through October 4, 2017, we have received aggregate equity proceeds and debt proceeds of \$30,000 and \$710,000, respectively, debt and accrued interest of \$133,735 and \$9,234, respectively, has been converted into or exchanged for common stock, we have repaid \$40,000 of debt, and the due date for the repayment of \$1,724,313 of debt has been extended from dates between February 2017 and August 2017 to dates between October 2017 and October 2018. Giving effect to the above actions, we currently have notes payable aggregating \$557,265 which are past due. As of October 5, 2017, the outstanding balance of our debt of \$3,240,162, together with accrued interest, was due and payable either on demand or on various dates through October 2018. Unless we obtain additional financing or, upon our request, the debt holders agree to convert their debt into equity or extend the maturity dates of the debt, we will not be able to repay such debt. Based upon our working capital deficiency and outstanding debt, we expect to be able to fund our operations through October 2017. Even if we are able to satisfy our debt obligations, our cash balance and the revenues for the foreseeable future from our anticipated operations will not be sufficient to fund the development of our business plan.

***Our business strategy is high risk.***

We are focusing our resources and efforts primarily on the development of cellular-based products and services which will require extensive cash for research, development and commercialization activities. This is a high-risk strategy because there is no assurance that our products and services, including our *Disc/Spine Program* and our *ThermoStem* metabolic brown fat research initiative, will ever become commercially viable (commercial risk), that we will prevent other companies from depriving us of market share and profit margins by offering services and products based on our inventions and developments (legal risk), that we will successfully manage a company in a new area of business, regenerative medicine, and on a different scale than we have operated in the past (operational risk), that we will be able to achieve the desired therapeutic results using stem and regenerative cells (scientific risk), or that our cash resources will be adequate to develop our products and services until we become profitable, if ever (financial risk). We are using our cash in one of the riskiest industries in the economy (strategic risk). This may make our stock an unsuitable investment for many investors.

***We will need to enter into agreements in order to implement our business strategy.***

Except for a certain license agreement described in this prospectus under the caption “Business”, we do not have any material agreements or understandings in place with respect to the implementation of our business strategy. No assurances can be given that we will be able to enter into any necessary agreements with respect to the development of our business. Our inability to enter into any such agreements would have a material adverse effect on our results of

operations and financial condition.

***We depend on our executive officers and on our ability to attract and retain additional qualified personnel; we do not currently have a Chief Financial Officer.***

Our performance is substantially dependent on the performance of Mark Weinreb, our Chief Executive Officer. We rely upon him for strategic business decisions and guidance. Mr. Weinreb is subject to an employment agreement with us that is scheduled to expire in December 2017. We are also dependent on the performance of Francisco Silva, our Vice President of Research and Development, in establishing and developing our products. Mr. Silva is also subject to an employment agreement with us. We do not have any key-man insurance policies on the lives of any of our executive officers. We do not currently have a Chief Financial Officer. Pending the hiring of a Chief Financial Officer, we are utilizing financial consultants with regard to the preparation of our financial statements. We believe that our future success in developing marketable products and services and achieving a competitive position will depend in large part upon whether we can attract and retain additional qualified management and scientific personnel, including a Chief Financial Officer. Competition for such personnel is intense, and there can be no assurance that we will be able to attract and retain such personnel. The loss of the services of Mr. Weinreb and/or Mr. Silva or the inability to attract and retain additional personnel, including a Chief Financial Officer, and develop expertise as needed would have a substantial negative effect on our results of operations and financial condition.

***Turmoil in the economy could harm our business.***

Negative trends in the general economy, including, but not limited to, trends resulting from an actual or perceived recession, tightening credit markets, increased cost of commodities, actual or threatened military action by the United States and threats of terrorist attacks in the United States and abroad, could cause a reduction of investment in and available funding for companies in certain industries, including ours. Our ability to raise capital has been and may in the future be adversely affected by downturns in current credit conditions, financial markets and the global economy.

***Risks Related to Our Cell Therapy Product Development Efforts***

***Our future success is significantly dependent on the timely and successful development and commercialization of BRTX-100, our lead product candidate for the treatment of chronic lumbar disc disease; if we encounter delays or difficulties in the development of this product candidate, as well as any other product candidates, our business prospects would be significantly harmed.***

We are dependent upon the successful development, approval and commercialization of our product candidates. Before we are able to seek regulatory approval of our product candidates, we must conduct and complete extensive clinical trials to demonstrate their safety and efficacy in humans. Our lead product candidate, *BRTX-100*, is in early stages of development and we only recently received FDA clearance to commence a Phase 2 clinical trial using *BRTX-100* to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs.

Clinical testing is expensive, difficult to design and implement, and can take many years to complete. Importantly, a failure of one or more of these or any other clinical trials can occur at any stage of testing. We may experience numerous unforeseen events during, or as a result of, clinical trials that could delay or prevent our ability to complete our clinical studies, receive regulatory approval or commercialize our cell therapy product candidates, including the following:

suspensions, delays or changes in the design, initiation, enrollment, implementation or completion of required clinical trials; adverse changes in our financial position or significant and unexpected increases in the cost of our clinical development program; changes or uncertainties in, or additions to, the regulatory approval process that require us to alter our current development strategy; clinical trial results that are negative, inconclusive or less than desired as to safety and/or efficacy, which could result in the need for additional clinical studies or the termination of the product's development; delays in our ability to manufacture the product in quantities or in a form that is suitable for any required clinical trials; intellectual property constraints that prevent us from making, using, or commercializing any of our cell therapy product candidates;

the supply or quality of our product candidates or other materials necessary to conduct clinical trials of these product candidates may be insufficient or inadequate; inability to generate sufficient pre-clinical, toxicology, or other *in vivo* or *in vitro* data to support the initiation of clinical studies;

delays in reaching agreement on acceptable terms with prospective contract research organizations, or CROs, and clinical study sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical study sites;

delays in obtaining required Institutional Review Board, or IRB, approval at each clinical study site;

imposition of a temporary or permanent clinical hold by regulatory agencies for a number of reasons, including after review of an IND application or amendment, or equivalent application or amendment; as a result of a new safety finding that presents unreasonable risk to clinical trial participants; a negative finding from an inspection of our clinical study operations or study sites; developments on trials conducted by competitors or approved products post-market for related technology that raises FDA concerns about risk to patients of the technology broadly; or if the FDA finds that the investigational protocol or plan is clearly deficient to meet its stated objectives;

difficulty collaborating with patient groups and investigators;  
failure by our CROs, other third parties, or us to adhere to clinical study requirements;  
failure to perform in accordance with the FDA's current Good Clinical Practices, or cGCP, requirements, or applicable regulatory guidelines in other countries;  
delays in having patients qualify for or complete participation in a study or return for post-treatment follow-up;  
patients dropping out of a study;  
occurrence of adverse events associated with the product candidate that are viewed to outweigh its potential benefits;  
changes in the standard of care on which a clinical development plan was based, which may require new or additional trials;  
the requirement by the FDA that we conduct additional research or studies, and/or to provide additional preclinical data, prior to or in connection with our clinical trials;  
transfer of manufacturing processes from our academic collaborators to larger-scale facilities operated by either a contract manufacturing organization, or CMO, or by us, and delays or failure by our CMOs or us to make any necessary changes to such manufacturing process;  
delays in manufacturing, testing, releasing, validating, or importing/exporting sufficient stable quantities of our product candidates for use in clinical studies or the inability to do any of the foregoing; and  
the FDA may not accept clinical data from trials that are conducted at clinical sites in countries where the standard of care is potentially different from the United States.

Any inability to successfully complete pre-clinical and clinical development could result in additional costs to us or impair our ability to generate revenue. In addition, if we make manufacturing or formulation changes to our product candidates, we may be required, or we may elect, to conduct additional studies to bridge our modified product candidates to earlier versions. Clinical study delays could also shorten any periods during which our products have patent protection and may allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business and results of operations.

Even if we are able to successfully complete our clinical development program for our product candidates, and ultimately receive regulatory approval to market one or more of the products, we may, among other things:

obtain approval for indications that are not as broad as the indications we sought;  
have the product removed from the market after obtaining marketing approval;  
encounter issues with respect to the manufacturing of commercial supplies;  
be subject to additional post-marketing testing requirements; and/or  
be subject to restrictions on how the product is distributed or used.

We anticipate that we will not be able to commercialize our *BRTX-100* product for at least five years.

***We may experience delays and other difficulties in enrolling a sufficient number of patients in our clinical trials which could delay or prevent the receipt of necessary regulatory approvals.***

We may not be able to initiate or complete as planned any clinical trials if we are unable to identify and enroll a sufficient number of eligible patients to participate in the clinical trials required by the FDA or other regulatory authorities. We also may be unable to engage a sufficient number of clinical trial sites to conduct our trials.

We may face challenges in enrolling patients to participate in our clinical trials due to the novelty of our cell-based therapies, the size of the patient populations and the eligibility criteria for enrollment in the trial. In addition, some patients may have concerns regarding cell therapy that may negatively affect their perception of therapies under development and their decision to enroll in the trials. Furthermore, patients suffering from diseases within target indications may enroll in competing clinical trials, which could negatively affect our ability to complete enrollment of our trials. Enrollment challenges in clinical trials often result in increased development costs for a product candidate, significant delays and potentially the abandonment of the clinical trial.

***We may have other delays in completing our clinical trials and we may not complete them at all.***

We have not commenced the clinical trials necessary to obtain FDA approval to market *BRTX-100* or any of our other products in development. Our management lacks significant experience in completing clinical trials and bringing a drug through commercialization. Clinical trials for *BRTX-100* and other products in development may be delayed or terminated as a result of many factors, including the following:

patients failing to complete clinical trials due to dissatisfaction with the treatment, side effects or other reasons;  
failure by regulators to authorize us to commence a clinical trial;  
suspension or termination by regulators of clinical research for many reasons, including concerns about patient safety or our failure, or the failure of our contract manufacturers, to comply with current Good Manufacturing Practices, or cGMP, requirements;  
delays or failure to obtain clinical supply for our products necessary to conduct clinical trials from contract manufacturers;  
treatment candidates demonstrating a lack of efficacy during clinical trials;  
inability to continue to fund clinical trials or to find a partner to fund the clinical trials;  
competition with ongoing clinical trials and scheduling conflicts with participating clinicians; and  
delays in completing data collection and analysis for clinical trials.

Any delay or failure to complete clinical trials and obtain FDA approval for our product candidates could have a material adverse effect on our cost to develop and commercialize, and our ability to generate revenue from, a particular product candidate.

***The development of our cell therapy product candidates is subject to uncertainty because autologous cell therapy is inherently variable.***

When manufacturing an autologous cell therapy, the number and the composition of the cell population varies from patient to patient. Such variability in the number and composition of these cells could adversely affect our ability to manufacture autologous cell therapies in a cost-effective or profitable manner and meet acceptable product release specifications for use in a clinical trial or, if approved, for commercial sale. As a consequence, the development and regulatory approval process for autologous cell therapy products could be delayed or may never be completed.

***Any disruption to our access to the media (including cell culture media) and reagents we are using in the clinical development of our cell therapy product candidates could adversely affect our ability to perform clinical trials and seek future regulatory submissions.***



Certain media (including cell culture media) and reagents, as well as devices, materials and systems, that we intend to use in our planned clinical trials, and that we may need or use in commercial production, are provided by unaffiliated third parties. Any lack of continued availability of these media, reagents, devices, materials and systems for any reason would have a material adverse effect on our ability to complete these studies and could adversely impact our ability to achieve commercial manufacture of our planned therapeutic products. Although other available sources for these media, reagents, devices, materials and systems may exist in the marketplace, we have not evaluated their cost, effectiveness, or intellectual property foundation and therefore cannot guarantee the suitability or availability of such other potential sources.

***Products that appear promising in research and development may be delayed or may fail to reach later stages of clinical development.***

The successful development of cellular based products is highly uncertain. Product candidates that appear promising in research and development may be delayed or fail to reach later stages of development. Decisions regarding the further development of product candidates must be made with limited and incomplete data, which makes it difficult to ensure or even accurately predict whether the allocation of limited resources and the expenditure of additional capital on specific product candidates will result in desired outcomes. Pre-clinical and clinical data can be interpreted in different ways, and negative or inconclusive results or adverse events during a clinical trial could delay, limit or prevent the development of a product candidate.

***Our clinical trials may fail to demonstrate adequately the safety and efficacy of our product candidates, which would prevent or delay regulatory approval and commercialization.***

The clinical trials of our product candidates are, and the manufacturing and marketing of our products will be, subject to extensive and rigorous review and regulation by numerous government authorities in the United States and in other countries where we intend to test and market our product candidates. Before obtaining regulatory approvals for the commercial sale of any of our product candidates, we must demonstrate through lengthy, complex and expensive preclinical testing and clinical trials that our product candidates are both safe and effective for use in each target indication. In particular, because our product candidates are subject to regulation as biological drug products, we will need to demonstrate that they are safe, pure, and potent for use in their target indications. Each product candidate must demonstrate an adequate risk versus benefit profile in its intended patient population and for its intended use. The risk/benefit profile required for product licensure will vary depending on these factors and may include decrease or elimination of pain, adequate duration of response, a delay in the progression of the disease, an improvement in function and/or decrease in disability.

In addition, even if such trials are successfully completed, we cannot guarantee that the FDA will interpret the results as we do, and more trials could be required before we submit our product candidates for approval. To the extent that the results of the trials are not satisfactory to the FDA for support of a marketing application, we may be required to expend significant resources, which may not be available to us, to conduct additional trials in support of potential approval of our product candidates.

***We presently lack manufacturing capabilities to produce our 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 products.***

Currently, we expect our laboratory (or a contract laboratory) to provide the cell processing services necessary for clinical production of *BRTX-100* for our disc clinical trial. To date, we have not produced any products at our laboratory. We expect that we would need to significantly expand our manufacturing capabilities to meet potential commercial demand for *BRTX-100* and any other of our product candidates, if approved, as well as any of our other product candidates that might attain regulatory approval. 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. 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, sales of the products and their long-term commercial prospects could be significantly damaged.

We do not presently have a third-party manufacturer for *BRTX-100* or any of our other product candidates. If our facilities at which these product candidates would be manufactured or our equipment were significantly damaged or

destroyed, or if there were other disruptions, delays or difficulties affecting manufacturing capacity, our planned and future clinical studies and commercial production for these product candidates 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 cell therapy product candidates to meet commercial demand (assuming commercial approval is obtained), 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.

***The commercial potential and profitability of our products are unknown and subject to significant risk and uncertainty.***

Even if we successfully develop and obtain regulatory approval for our cell therapy product candidates, the market may not understand or accept the products, which could adversely affect both the timing and level of future sales. Ultimately, the degree of market acceptance of our product candidates (or any of our future product candidates) will depend on a number of factors, including:

the clinical effectiveness, safety and convenience of the product particularly in relation to alternative treatments; our ability to distinguish our products (which involve adult cells) from any ethical and political controversies associated with stem cell products derived from human embryonic or fetal tissue; and the cost of the product, the reimbursement policies of government and third-party payors and our ability to obtain sufficient third-party coverage or reimbursement.

Even if we are successful in achieving sales of our product candidates, it is not clear to what extent, if any, the products will be profitable. The costs of goods associated with production of cell therapy products are significant. In addition, some changes in manufacturing processes or procedures generally require FDA or foreign regulatory authority review and approval prior to implementation. We may need to conduct additional pre-clinical studies and clinical trials to support approval of any such changes. Furthermore, this review process could be costly and time-consuming and could delay or prevent the commercialization of product candidates.

***We may have difficulties in sourcing brown adipose (fat) tissue.***

Our research agreement with the University of Utah (which expired in June 2015) provided an opportunity for us to obtain brown adipose (fat) tissue that we use to identify and characterize brown adipose derived stem cells for use in our pre-clinical *ThermoStem Program*. There is no certainty that we will be able to continue to collect brown adipose samples through relationships that we may establish with other potential sources of brown adipose tissue. The loss of brown tissue procurement would have a material adverse effect upon our ability to advance the *ThermoStem Program*.

***We are required to complete a certain milestone or pay a certain royalty amount to maintain our exclusive license rights with regard to the disc/spine technology. The loss of such exclusive rights would have a material adverse effect upon us.***

Pursuant to our license agreement with Regenerative Sciences, LLC, we must complete a certain milestone or pay a certain royalty amount in order to maintain our exclusive rights with regard to the disc/spine technology. No

assurances can be given that we will achieve such milestone or have the funds, if necessary, to pay such royalty amount. Any loss of such exclusive rights would have a material adverse effect upon our business, results of operations and financial condition. See “Business—Disc/Spine Program-License”.

***If safety problems are encountered by us or others developing new stem cell-based therapies, our stem cell initiatives could be materially and adversely affected.***

The use of stem cells for therapeutic indications is still in the very early stages of development. If an adverse event occurs during clinical trials related to one of our proposed products and/or services or those of others, the FDA and other regulatory authorities may halt clinical trials or require additional studies. The occurrence of any of these events would delay, and increase the cost of, our development efforts and may render the commercialization of our proposed products and/or services impractical or impossible.

***Ethical and other concerns surrounding the use of stem cell therapy may negatively impact the public perception of our stem cell products and/or services, thereby suppressing demand for our products and/or services.***

Although our contemplated stem cell business pertains to adult stem cells only, and does not involve the more controversial use of embryonic stem cells, the use of adult human stem cells for therapy could give rise to similar ethical, legal and social issues as those associated with embryonic stem cells, which could adversely affect its acceptance by consumers and medical practitioners. Additionally, it is possible that our business could be negatively impacted by any stigma associated with the use of embryonic stem cells if the public fails to appreciate the distinction between adult and embryonic stem cells. Delays in achieving public acceptance may materially and adversely affect the results of our operations and profitability.

***We are vulnerable to competition and technological change, and also to physicians' inertia.***

We will compete with many domestic and foreign companies in developing our technology and products, including biotechnology, medical device and pharmaceutical companies. Many current and potential competitors have substantially greater financial, technological, research and development, marketing, and personnel resources. There is no assurance that our competitors will not succeed in developing alternative products and/or services that are more effective, easier to use, or more economical than those which we may develop, or that would render our products and/or services obsolete and non-competitive. In general, we may not be able to prevent others from developing and marketing competitive products and/or services similar to ours or which perform similar functions or which are marketed before ours.

Competitors may have greater experience in developing products, therapies or devices, conducting clinical trials, obtaining regulatory clearances or approvals, manufacturing and commercialization. It is possible that competitors may obtain patent protection, approval or clearance from the FDA or achieve commercialization earlier than we can, any of which could have a substantial negative effect on our business.

We will compete against cell-based therapies derived from alternate sources, such as bone marrow, adipose tissue, umbilical cord blood and potentially embryos. Doctors historically are slow to adopt new technologies like ours, whatever the merits, when older technologies continue to be supported by established providers. Overcoming such inertia often requires very significant marketing expenditures or definitive product performance and/or pricing superiority.

We expect that physicians' inertia and skepticism will also be a significant barrier as we attempt to gain market penetration with our future products and services. We may need to finance lengthy time-consuming clinical studies (so as to provide convincing evidence of the medical benefit) in order to overcome this inertia and skepticism.

*We may form or seek collaborations or strategic alliances or enter into additional licensing arrangements in the future, and we may not realize the benefits of such alliances or licensing arrangements.*

We may form or seek strategic alliances, create joint ventures or collaborations, or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop. Any of these relationships may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue securities that dilute the shares of our existing stockholders, or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. Moreover, we may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort, and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy.

Further, collaborations involving our product candidates, such as our collaborations with third-party research institutions, are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to a collaboration;

- collaborators may not pursue development and commercialization of our product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results, changes in their strategic focus due to the acquisition of competitive products, availability of funding, or other external factors, such as a business combination that diverts resources or creates competing priorities;

- collaborators may delay clinical trials, provide insufficient funding for a clinical trial, stop a clinical trial, abandon a product candidate, repeat or conduct new clinical trials, or require a new formulation of a product candidate for clinical testing;

- collaborators could independently develop, or develop with third parties, products that compete directly or indirectly with our products or product candidates;

- a collaborator with marketing and distribution rights to one or more products may not commit sufficient resources to their marketing and distribution;

collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability; disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our product candidates, or that result in costly litigation or arbitration that diverts management attention and resources; collaborations may be terminated and, if terminated, may result in a need for additional capital to pursue further development or commercialization of the applicable product candidates; and collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we would not have the exclusive right to commercialize such intellectual property.

As a result, if we enter into collaboration agreements and strategic partnerships or license our products or businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture, which could delay our timelines or otherwise adversely affect our business. We also cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction. Any delays in entering into new collaborations or strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies for certain indications, which would harm our business prospects, financial condition, and results of operations.

***We have limited experience in the development and marketing of cell therapies and may be unsuccessful in our efforts to establish a profitable business.***

Over the past six years, our business plan has been focused on capturing a piece of the burgeoning field of cell therapy. We have limited experience in the areas of cell therapy product development and marketing, and in the related regulatory issues and processes. Although we have recruited a team that has experience with designing and conducting clinical trials, as a company, we have limited experience in conducting clinical trials and no experience in conducting clinical trials through to regulatory approval of any product candidate. In part because of this lack of experience, we cannot be certain that planned clinical trials will begin or be completed on time, if at all. We cannot assure that we will successfully achieve our clinical development goals or fulfill our plans to capture a piece of the cell therapy market.

***Our cell therapy 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 cell therapy product. In general, cell-based or tissue-based 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. In addition, *BRTX-100* is a cell-based candidate that is produced by using a patient's own stem cells derived from bone marrow. Regulatory approval of novel product candidates such as *BRTX-100*, which is manufactured using novel manufacturing processes, can be more complex and expensive and take longer than other, more well-known or extensively studied pharmaceutical or biopharmaceutical products, due to the FDA's lack of experience with them. To our knowledge, the FDA has not yet approved a disc related stem cell therapy product. This lack of experience may lengthen the regulatory review process, require us to conduct additional studies or clinical trials, which would increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these product candidates or lead to significant post-approval limitations or restrictions. 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 large global market for cell- and tissue-based therapies and our ability to capture a share of this market with our product candidates.

***Our cell therapy product candidates for which we intend to seek approval as biologic products may face competition sooner than anticipated.***

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as “interchangeable” based on its similarity to an existing reference product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product is approved under a biologics license application, or BLA. Although the FDA has approved several biosimilar products, complex provisions of the law are still being implemented by the FDA and interpreted by the federal courts. As a result, the ultimate impact, implementation, and meaning of the BPCIA are still subject to some uncertainty and FDA actions and court decisions concerning the law could have a material adverse effect on the future commercial prospects for our biological products.

We believe that, if any of our product candidates are approved as a biological product under a BLA, it should qualify for the 12-year period of exclusivity. However, there is a risk that the FDA could permit biosimilar applicants to reference approved biologics other than our therapeutic candidates, thus circumventing our exclusivity and potentially creating the opportunity for competition sooner than anticipated. Additionally, this period of regulatory exclusivity does not apply to companies pursuing regulatory approval via their own traditional BLA, rather than via the abbreviated pathway. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

***We may be subject to significant product liability claims and litigation, including potential exposure from the use of our product candidates in human subjects, and our insurance may be inadequate to cover claims that may arise.***

Our business exposes us to potential product liability risks inherent in the testing, processing and marketing of cell therapy products. Such liability claims may be expensive to defend and result in large judgments against us. We face an inherent risk of product liability exposure related to the testing of our current and any future product candidates in human clinical trials and will face an even greater risk with respect to any commercial sales of our products should they be approved. No product candidate has been widely used over an extended period of time, and therefore safety data is limited. Cell therapy companies derive the raw materials for manufacturing of product candidates from human cell sources, and therefore the manufacturing process and handling requirements are extensive, which increases the risk of quality failures and subsequent product liability claims.

We will need to maintain insurance coverage adequate to cover our clinical trials and increase that coverage before commercializing product candidates, if ever. At any time during our clinical trials or after commercialization, if that occurs, we may not be able to obtain or maintain product liability insurance on acceptable terms with adequate

coverage or at all, or if claims against us substantially exceed our coverage, then our financial position could be significantly impaired.

Whether or not we are ultimately successful in any product liability litigation that may arise, such litigation could consume substantial amounts of our financial and managerial resources, result in decreased demand for our products and injure our reputation.

We seek to maintain errors and omissions, directors and officers, workers' compensation and other insurance at levels we believe to be appropriate to our business activities. If, however, we were subject to a claim in excess of this coverage or to a claim not covered by our insurance and the claim succeeded, we would be required to pay the claim from our own limited resources, which could have a material adverse effect on our financial condition, results of operations and business. Additionally, liability or alleged liability could harm our business by diverting the attention and resources of our management and damaging our reputation.

***Our internal computer systems, or those that are expected to be used by our clinical investigators, clinical research organizations or other contractors or consultants, may fail or suffer security breaches, which could result in a material disruption of development programs for our product candidates.***

We rely on information technology systems to keep financial records, maintain laboratory and corporate records, communicate with staff and external parties and operate other critical functions. Any significant degradation or failure of these computer systems could cause us to inaccurately calculate or lose data. Despite the implementation of security measures, these internal computer systems and those used by our clinical investigators, clinical research organizations, and other contractors and consultants are vulnerable to damage from computer viruses, unauthorized access, natural disasters, terrorism, war, and telecommunication and electrical failures. The techniques that could be used by criminal elements or foreign governments to attack these computer systems are sophisticated, change frequently and may originate from less regulated and remote areas of the world. While we have not experienced any such system failure, theft of information, accident or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our clinical development activities. For example, the loss of clinical trial data from historical or future clinical trials could result in delays in regulatory approval efforts and significantly increase costs to recover or reproduce the data. To the extent that any disruption, theft of information, or security breach were to result in a loss of or damage to data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and the clinical development and the future development of our product candidates could be delayed.

***To operate and sell in international markets carries great risk.***

We intend to market our products and services both domestically and in foreign markets. A number of risks are inherent in international transactions. In order for us to market our products and services in non-U.S. jurisdictions, we need to obtain and maintain required regulatory approvals or clearances in these countries and must comply with the country specific regulations regarding safety, manufacturing processes and quality. These regulations, including the requirements for approvals or clearances to market, may differ from the FDA regulatory scheme. International operations and sales also may be limited or disrupted by political instability, price controls, trade restrictions and changes in tariffs. Additionally, fluctuations in currency exchange rates may adversely affect demand for our services and products by increasing the price of our products and services in the currency of the countries in which the products and services are offered.

There can be no assurance that we will obtain regulatory approvals or clearances in all of the countries where we intend to market our products and services, or that we will not incur significant costs in obtaining or maintaining foreign regulatory approvals or clearances, or that we will be able to successfully commercialize our products and services in various foreign markets. Delays in receipt of approvals or clearances to market our products and services in foreign countries, failure to receive such approvals or clearances or the future loss of previously received approvals or clearances could have a substantial negative effect on our results of operations and financial condition.

***Our inability to obtain reimbursement for our products and services from private and governmental insurers could negatively impact demand for our products and services.***

Successful sales of health care products and services generally depends, in part, upon the availability and amounts of reimbursement from third party healthcare payor organizations, including government agencies, private healthcare insurers and other healthcare payors, such as health maintenance organizations and self-insured employee plans. Uncertainty exists as to the availability of reimbursement for such new therapies as stem cell-based therapies. There can be no assurance that such reimbursement will be available in the future at all or without substantial delay or, if such reimbursement is provided, that the approved reimbursement amounts will be sufficient to support demand for our products and services at a level that will be profitable.

**Risks Related to Our Intellectual Property**

***We may not be able to protect our proprietary rights.***

Our commercial success will depend in large part upon our ability to protect our proprietary rights. There is no assurance, for example, that any additional patents will be issued to us or, if issued, that such patents will not become the subject of a re-examination, will provide us with competitive advantages, will not be challenged by any third parties, or that the patents of others will not prevent the commercialization of products and services incorporating our technology. Furthermore, there can be no guarantee that others will not independently develop similar products and services, duplicate any of our products and services, or design around any patents we obtain.

Our commercial success will also depend upon our ability to avoid infringing patents issued to others. If we were judicially determined to be infringing on any third-party patent, we could be required to pay damages, alter our products, services or processes, obtain licenses, or cease certain activities. If we are required in the future to obtain any licenses from third parties for some of our products and/or services, there can be no guarantee that we would be able to do so on commercially favorable terms, if at all. United States and foreign patent applications are not immediately made public, so we might be surprised by the grant to someone else of a patent on a technology we are actively using. Although we conducted a freedom to operate, or FTO, search on the licensed technology associated with our *Disc/Spine Program*, modifications made, and/or further developments that may be made, to that technology may not be covered by the initial FTO. No FTO has been undertaken with respect to our *ThermoStem* brown fat initiative.

Litigation, which would result in substantial costs to us and the diversion of effort on our part, may be necessary to enforce or confirm the ownership of any patents issued or licensed to us, or to determine the scope and validity of third-party proprietary rights. If our competitors claim technology also claimed by us and prepare and file patent applications in the United States, we may have to participate in interference proceedings declared by the U.S. Patent and Trademark Office, or the Patent Office, or a foreign patent office to determine priority of invention, which could result in substantial costs and diversion of effort, even if the eventual outcome is favorable to us. Any such litigation or interference proceeding, regardless of outcome, could be expensive and time-consuming.

Successful challenges to our patents through oppositions, re-examination proceedings or interference proceedings could result in a loss of patent rights in the relevant jurisdiction. If we are unsuccessful in actions we bring against the patents of other parties, and it is determined that we infringe upon the patents of third parties, we may be subject to litigation, or otherwise prevented from commercializing potential products and/or services in the relevant jurisdiction, or may be required to obtain licenses to those patents or develop or obtain alternative technologies, any of which could harm our business. Furthermore, if such challenges to our patent rights are not resolved in our favor, we could be delayed or prevented from entering into new collaborations or from commercializing certain products and/or services, which could adversely affect our business and results of operations.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential or sensitive information could be compromised by disclosure in the event of litigation. In addition, during the course of litigation there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

In addition to patents, we intend to also rely on unpatented trade secrets and proprietary technological expertise. Some of our intended future cell-related therapeutic products and/or services may fit into this category. We intend to rely, in part, on confidentiality agreements with our partners, employees, advisors, vendors, and consultants to protect our trade secrets and proprietary technological expertise. There can be no guarantee that these agreements will not be breached, or that we will have adequate remedies for any breach, or that our unpatented trade secrets and proprietary technological expertise will not otherwise become known or be independently discovered by competitors.

Failure to obtain or maintain patent protection, failure to protect trade secrets, third-party claims against our patents, trade secrets, or proprietary rights or our involvement in disputes over our patents, trade secrets, or proprietary rights, including involvement in litigation, could divert our efforts and attention from other aspects of our business and have a substantial negative effect on our results of operations and financial condition.

***We may not be able to protect our intellectual property in countries outside of the United States.***

Intellectual property law outside the United States is uncertain and, in many countries, is currently undergoing review and revisions. The laws of some countries do not protect our patent and other intellectual property rights to the same extent as United States laws. Third parties may attempt to oppose the issuance of patents to us in foreign countries by initiating opposition proceedings. Opposition proceedings against any of our patent filings in a foreign country could have an adverse effect on our corresponding patents that are issued or pending in the United States. It may be necessary or useful for us to participate in proceedings to determine the validity of our patents or our competitors' patents that have been issued in countries other than the United States. This could result in substantial costs, divert our efforts and attention from other aspects of our business, and could have a material adverse effect on our results of operations and financial condition.

***Changes to United States patent law may have a material adverse effect on our intellectual property rights.***

The Leahy-Smith America Invents Act, or AIA, which was signed into law in 2011, significantly changes United States patent law. It may take some time to establish what the law means, since it is just being interpreted by the lower courts, Federal Circuit Courts of Appeal, and the Supreme Court. The effects of these decisions are still not known. The first major change is that AIA switches the United States patent system from a "first to invent" system to a "first to file" system. Now that the first to file system is in effect, there is a risk that another company may independently develop identical or similar patents at approximately the same time, and be awarded the patents instead of us. Further, for the second major change, AIA abolished interference proceedings, and establishes derivation proceedings to replace interference proceedings in all cases in which the time period for instituting an interference proceeding has not lapsed where an inventor named in an earlier application derived the claimed invention from a named inventor. Now that the derivation proceedings are in effect, there is a risk that the inventorship of any pending patent application can be challenged for reasons of derivation. The third major change is that AIA established post-grant opposition proceedings that will apply only to patent applications filed after "first to file" became effective. Post-grant opposition will enable a person who is not the patent owner to initiate proceedings in the Patent Office within nine months after the grant of a patent that can result in cancellation of a patent as invalid. In addition to AIA, recent court decisions have created uncertainty with regard to our ability to obtain and maintain patents. Therefore there is a risk that any of our patents once granted may be subject to post-grant opposition, which will increase uncertainty on the validity of any newly granted patent or may ultimately result in cancellation of the patent.

In addition, the Supreme Court has recently taken more limiting positions as to what constitutes patentable subject matter. As a result, many patents covering what were previously patentable inventions are now determined to cover inventions which are deemed non-statutory subject matter and are now invalid. As a result of this and subsequent opinions by the Court of Appeals for the Federal Circuit, the Patent Office is now applying more stringent limitations to claims in patent applications and is refusing to grant patents in areas of technology where patents were previously deemed available. Therefore there is a risk that we will be unable to acquire patents to cover our products and if such patents are granted they may subsequently be found to be invalid.



***In certain countries, patent holders may be required to grant compulsory licenses, which would likely have a significant and detrimental effect on any future revenues in such country.***

Many countries, including some countries in Europe, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In addition, most countries limit the enforceability of patents against government agencies or government contractors. In these countries, the patent owner may be limited to monetary relief and may be unable to enjoin infringement, which could materially diminish the value of the patent. Compulsory licensing of life-saving products is also becoming increasingly common in developing countries, either through direct legislation or international initiatives. Such compulsory licenses could be extended to our product candidates, which may limit our potential revenue opportunities, including with respect to any future revenues that may result from our product candidates.

**Risks Related to Government Regulation**

***We operate in a highly-regulated environment and may be unable to comply with applicable federal, state, local, and international requirements. Failure to comply with applicable government regulation may result in a loss of licensure, registration, and approval or other government enforcement actions.***

We intend to develop stem cell based therapeutic products and related device accessories. These products and operations are subject to regulation in the United States by the FDA, the Federal Trade Commission, or the FTC, the Centers for Medicare and Medicaid Services, or the CMS, state authorities and comparable authorities in foreign jurisdictions. Government regulation is a significant factor affecting the research, development, formulation, manufacture, and marketing of our products. If we fail to comply with applicable regulations, we may be subject to, among other things, fines, suspension or withdrawal of regulatory approvals, product recalls, operating restrictions and criminal prosecution.

The FDA requires facilities that are engaged in the recovery, processing, storage, labeling, packaging, or distribution of human cells, tissues, cellular and tissue-based products, or HCT/Ps, or in the screening or testing of donors of HCT/Ps to register and list the HCT/Ps that it manufactures, comply with current Good Tissue Practices, or cGTPs, and other procedures to prevent the introduction, transmission, and spread of communicable diseases. Our New York-based laboratory and any treatment centers we may open in the United States may be required to comply with the HCT/P regulations. In addition, any third party retained by us that engages in the manufacture of an HCT/P on our behalf must also comply with the HCT/P regulations. If we or our third-party contractors fail to register, update registration information, or comply with any HCT/P regulation, we will be out of compliance with FDA regulations, which could adversely affect our business. Furthermore, adverse events in the field of stem cell therapy may result in greater governmental regulation, which could create increased expenses, potential delays, or otherwise affect our business.

We believe that some of our products and services may be regulated solely as HCT/Ps; however, it is possible that some or all of our products may be regulated as prescription drugs, medical devices, and/or biological products and therefore will likely require FDA regulatory approval or clearance prior to being marketed in the United States. The FDA approval process can be lengthy, expensive, and uncertain and there is no guarantee of ultimate approval or clearance. Even if our products are approved, FDA regulation of manufacturing activities can affect our ability to market a drug, biologic or medical device. These products must comply with the applicable current Good Manufacturing Practices (for drug products), Quality System Regulations (for medical devices), and/or General Biological Product Standards (for biological products) as set forth in Title 21 of the Code of Federal Regulations. These regulations govern the manufacture, processing, packaging, and holding of the products. The FDA conducts inspections to enforce compliance with these regulations. We and any third-party contractor that manufactures these products on our behalf must comply with the applicable regulations. If we or any third party retained by us that engages in the manufacture of a drug, medical device, or biological product fails to comply with the applicable regulations, our business could be adversely affected. Discovery before and after FDA 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:

- a delay in or failure to receive FDA approval;
- warning letters or untitled 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
- finances, restitution or disgorgement of profits or revenue, the imposition of civil penalties or criminal prosecution.

In addition, the FDA regulates and prescribes good laboratory practices, or GLPs, for conducting nonclinical laboratory studies that support applications for research or marketing permits for products regulated by the FDA. GLPs provide requirements for organization, personnel, facilities, equipment, testing, facilities operation, test and control articles, protocol for nonclinical laboratory study, records, reports, and disqualification by the FDA to ensure the quality and integrity of the safety data filed in research and marketing permits. Failure to comply with the GLPs could adversely affect our business.

Further, the FDA regulates the advertising and promotion in the United States of prescription drugs, medical devices, and biological products. The FDA requires such advertising and promotion to be truthful and not misleading. The omission of safety risks, overstatement of effectiveness information, improper product comparisons, and/or marketing of unapproved uses can result in enforcement actions by the FDA, such as the issuance of warning and untitled letters and the imposition of civil penalties or criminal prosecution. To the extent our products are regulated by the FDA as drugs, medical devices and/or biological products, violations of these requirements could have an adverse effect on our business.

The FTC regulates advertising in the United States of medical treatments, procedures, and regimens that take place inside and outside of the United States. FTC regulations are designed to prevent unfair and deceptive practices and false advertising. The FTC requires advertisers and promoters to have a reasonable basis to substantiate and support claims. Failure to sufficiently substantiate and support claims can lead to enforcement action by the FTC, such as a disgorgement order of any profits made from the promoted business or an injunction from further violative promotion. Such enforcement actions could have an adverse effect on our business.

State and local governments impose additional licensing and other requirements for clinical laboratories and facilities that collect, process, and administer stem cells. Our laboratory and any future treatment facilities that we may operate in the United States must comply with these additional licensing and other requirements. The licensing regulations require personnel with specific education, experience, training, and other credentials. There can be no assurance that these individuals can be retained or will remain retained or that the cost of retaining such individuals will not materially and adversely affect our ability to operate our business profitably. There can be no assurance that we can obtain the necessary licensure required to conduct business in any state or that the cost of compliance will not adversely affect our ability to operate our business profitably.

The CMS has authority to implement the Clinical Laboratories Improvement Amendments, or CLIA, program. Our laboratory operations in the United States will need to comply with the CLIA program standards. CLIA is designed to establish quality laboratory testing by ensuring the accuracy, reliability, and timeliness of patient test results. Laboratories that handle stem cells and other biologic matter are included under the CLIA program. Under the CLIA program, laboratories must be certified by the government, satisfy governmental quality and personnel standards, undergo proficiency testing, be subject to inspections, and pay fees. The failure to comply with CLIA standards could result in suspension, revocation, or limitation of a laboratory's CLIA certificate. In addition, fines or criminal penalties could also be levied. To the extent that our business activities require CLIA certification, we intend to obtain and maintain such certification. There is no guarantee that we will be able to gain CLIA certification. Failure to gain CLIA certification or comply with the CLIA requirements will adversely affect our business.

The Department of Health and Human Services, or HHS, published the *Standards for Privacy of Individually Identifiable Health Information*, or the Privacy Rule, and the *Security Standards for the Protection of Electronic Protected Health Information*, or the Security Rule, pursuant to the Health Insurance Portability and Accountability Act of 1996, or HIPAA. The Privacy Rule specifies the required, permitted and prohibited uses and disclosures of an individual's protected health information by health plans, health care clearinghouses, and any health care provider that

transmits health information in electronic format (referred to as covered entities). The Security Rule establishes a national security standard for safeguarding protected health information that is held or transferred in electronic form (referred to as electronic protected health information). The Security Rule addresses the technical and non-technical safeguards that covered entities must implement to secure individuals' electronic protected health information.

In addition to covered entities, the Health Information Technology for Economic and Clinical Health Act, enacted as part of the American Recovery Act of 2009, or the HITECH Act, made certain provisions of the Security Rule, as well as the additional requirements the HITECH Act imposed that relate to security and privacy and that are imposed on covered entities, directly applicable as a matter of law to individuals and entities that perform permitted functions on behalf of covered entities when those functions involve the use or disclosure of protected health information. These individuals and entities are referred to as business associates. Covered entities are required to enter into a contract with business associates, called a business associate agreement, that also imposes many of the Privacy Rule requirements on business associates as a matter of contract.

Regulations implementing the majority of the requirements created by the HITECH Act were issued in January 2013 (we refer to these regulations as the Final Rule). Among other things, the Final Rule broadened the definition of business associate to include subcontractors. As a result, a subcontractor who performs tasks involving the use or disclosure of protected health information on behalf of a business associate must likewise comply with the same obligations as the business associate.

The HITECH Act also established notification requirements in the event that a breach of the protected health information occurs at a covered entity or business associate. These notification obligations mandate that each affected individual whose protected health information was impermissibly accessed receive written notification mailed to his residence of record and that the Secretary of HHS and potentially the media also be notified. HHS, through its Office for Civil Rights, investigates breach reports and determines whether administrative or technical modifications are required and whether civil or criminal sanctions should be imposed. Companies failing to comply with HIPAA and the implementing regulations may also be subject to civil money penalties or in the case of knowing violations, potential criminal penalties, including monetary fines, imprisonment, or both. In some cases, the State Attorneys General may seek enforcement and appropriate sanctions in federal court.

To the extent that our business requires compliance with HIPAA, we intend to fully comply with all requirements as well as to other additional federal or state privacy laws and regulations that may apply to us. As HIPAA is amended and changed, we will incur additional compliance burdens. We may be required to spend substantial time and money to ensure compliance with ever-changing federal and state standards as electronic and other means of transmitting protected health information evolve.

In addition to the above-described regulation by United States federal and state government, the following are other federal and state laws and regulations that could directly or indirectly affect our ability to operate the business:

- state and local licensure, registration, and regulation of the development of pharmaceuticals and biologics;
- state and local licensure of medical professionals;
- state statutes and regulations related to the corporate practice of medicine;
- laws and regulations administered by U.S. Customs and Border Protection related to the importation of biological material into the United States;
- other laws and regulations administered by the FDA;
- other laws and regulations administered by HHS;
- state and local laws and regulations governing human subject research and clinical trials;
- the federal physician self-referral prohibition, also known as Stark Law, and any state equivalents to Stark Law;
- the federal Anti-Kickback Statute and any state equivalent statutes and regulations;
- federal and state coverage and reimbursement laws and regulations;
- state and local laws and regulations for the disposal and handling of medical waste and biohazardous material;
- Occupational Safety and Health Administration, or OSHA, regulations and requirements;

the Intermediate Sanctions rules of the IRS providing for potential financial sanctions with respect to “excess benefit transactions” with tax-exempt organizations;  
the Physician Payments Sunshine Act (in the event that our products are classified as drugs, biologics, devices or medical supplies and are reimbursed by Medicare, Medicaid or the Children’s Health Insurance Program); and  
state and other federal laws governing the privacy of health information.

Any violation of these laws could result in a material adverse effect on our business.

In the event we determine to operate in foreign jurisdictions, including conducting clinical trials, we will need to comply with the United States Foreign Corrupt Practices Act of 1977, or FCPA. The FCPA prohibits a corporation, including its subsidiaries, third-party contractors, distributors, consultants and employees, from corruptly making or offering to make payments to foreign officials for the purpose of obtaining or enhancing business. Under the law, “foreign officials” include employees of health systems operated by government entities. The FCPA also establishes specific record-keeping and internal accounting controls. Violations of the FCPA can result in the imposition of civil penalties or criminal prosecution. Failure to comply with the FCPA will adversely affect our business.

In addition to the FCPA, we will also need to comply with the foreign government laws and regulations of each individual country in which any therapy centers that we may establish are located and products are to be distributed and sold. These regulations vary in complexity and can be as stringent, and on occasion even more stringent, than FDA regulations in the United States. Due to the fact that there are new and emerging cell therapy and cell banking regulations that have recently been drafted and/or implemented in various countries around the world, the application and subsequent implementation of these new and emerging regulations have little to no precedence. Therefore, the level of complexity and stringency is not always precisely understood today for each country, creating greater uncertainty for the international regulatory process. Furthermore, government regulations can change with little to no notice and may result in up-regulation of our products, thereby creating a greater regulatory burden for our cell processing technology products. We have not yet thoroughly explored the applicable laws and regulations that we will need to comply with in foreign jurisdictions. It is possible that we may not be permitted to expand our business into one or more foreign jurisdictions.

We intend to conduct our business in full compliance with all applicable federal, state and local, and foreign laws and regulations. However, the laws and regulations affecting our business are complex, often are not contemplated by existing legal régimes, and are subject to change without notice. As a result, the laws and regulations affecting our business are uncertain and have not been the subject of judicial or regulatory interpretation. Furthermore, stem cells and cell therapy are topics of interest in the government and public arenas. There can be no guarantee that laws and regulations will not be implemented, amended and/or reinterpreted in a way that will negatively affect our business. Likewise, 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.

***The failure to receive regulatory approvals for our cell therapy product candidates would likely have a material and adverse effect on our business and prospects.***

To date, we have not received regulatory approval to market any of our product candidates in any jurisdiction. If we seek approval of any of our cell therapy product candidates, we will be required to submit to the FDA and potentially other regulatory authorities extensive pre-clinical and clinical data supporting its safety and efficacy, as well as information about the manufacturing process and to undergo inspection of our manufacturing facility or other contract manufacturing facilities, among other things. 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 cell-based product candidates. Changes in regulatory approval requirements or policies 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 preclinical, clinical or other studies. In addition, varying agency interpretations of the data obtained from preclinical and clinical testing could delay, limit or prevent regulatory approval of a product candidate. 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. Similarly, 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.

***If we are unable to conduct clinical studies in accordance with regulations and accepted standards, we may be delayed in receiving, or may never receive, regulatory approvals of our product candidates from the FDA and other regulatory authorities.***

To obtain marketing approvals for our product candidates in the United States and abroad, we must, among other requirements, complete adequate and well-controlled clinical trials sufficient to demonstrate to the FDA and other regulatory bodies that the product candidate is safe and effective for each indication for which approval is sought. If the FDA finds that patients enrolled in the trial are or would be exposed to an unreasonable and significant risk of illness or injury, due to, among other things, occurrence of a serious adverse event in an ongoing clinical trial, the FDA can place one or more of our clinical trials on hold. If safety concerns develop, we may, or the FDA or an institutional review board may require us to, stop the affected trials before completion.

The completion of our clinical trials also may be delayed or terminated for a number of other reasons, including if:

third-party clinical investigators do not perform the clinical trials on the anticipated schedule or consistent with the clinical trial protocol, good clinical practices required by the FDA and other regulatory requirements, or other third parties do not perform data collection and analysis in a timely or accurate manner; inspections of clinical trial sites by the FDA or other regulatory authorities reveal violations that require us to undertake corrective action, suspend or terminate one or more sites, or prohibit use of some or all of the data in support of marketing applications; or the FDA or one or more institutional review boards suspends or terminates the trial at an investigational site, or precludes enrollment of additional subjects.

Our development costs will increase if there are material delays in our clinical trials, or if we are required to modify, suspend, terminate or repeat a clinical trial. If we are unable to conduct our clinical trials properly, we may never receive regulatory approval to market our product candidates.

***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, or the FCA, including under healthcare reform legislation, have made it easier for private parties to bring “*qui tam*” (or whistleblower) lawsuits against companies under which the whistleblower may be entitled to receive a percentage of any money paid to the government. The FCA 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 FCA. 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 provisions.

We are not aware of any government investigations involving any of our facilities or management. While we believe that we are in compliance with applicable governmental healthcare laws and regulations, 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.

***It is uncertain to what extent the government, private health insurers and third-party payors will approve coverage or provide reimbursement for the therapies and products to which our services relate. Availability for such reimbursement may be further limited by reductions in Medicare, Medicaid and other federal healthcare program funding in the United States.***

To the extent that health care providers cannot obtain coverage or reimbursement for our products and therapies, they may elect not to provide such products and therapies to their patients and, thus, may not need our services. Further, as cost containment pressures are increasing in the health care industry, government and private payors may adopt strategies designed to limit the amount of reimbursement paid to health care providers.

Similarly, the trend toward managed health care and bundled pricing for health care services in the United States, could significantly influence the purchase of healthcare products and services, resulting in lower prices and reduced demand for our therapeutic products under development.

We may directly or indirectly receive revenues from federal health care programs, such as Medicare. Federal health care programs are subject to changes in coverage and reimbursement rules and procedures, including retroactive rate adjustments. These contingencies could materially decrease the range of services covered by such programs or the reimbursement rates paid directly or indirectly for our products and services. To the extent that any health care reform favors the reimbursement of other therapies over our therapeutic products under development, such reform could affect our ability to sell our services, which may have a material adverse effect on our revenues.

The limitation on reimbursement available from private and government payors may reduce the demand for, or the price of, our products and services, which could have a material adverse effect on our revenues. Additional legislation or regulation relating to the health care industry or third-party coverage and reimbursement may be enacted in the future which could adversely affect the revenues generated from the sale of our products and services.

Furthermore, there has been a trend in recent years towards reductions in overall funding for Medicare, Medicaid and other federal health care programs. There has also been an increase in the number of people who are not eligible for or enrolled in Medicare, Medicaid or other governmental programs. The reduced funding of governmental programs could have a negative impact on the demand for our services to the extent it relates to products and services which are reimbursed by government and private payors.

***Unintended consequences of healthcare reform in the United States may adversely affect our business.***

The healthcare industry is undergoing fundamental changes resulting from political, economic and regulatory influences. In the United States, the Affordable Care Act, or ACA, was signed into law in 2010 under the Obama administration. By implementing comprehensive reforms, the law seeks to, among other things, increase access to healthcare for the uninsured and control the escalation of healthcare expenditures within the economy. While we do not believe this law will have a direct impact on our business, the law requires the adoption of various implementing regulations, which may have unintended consequences or indirectly impact our business. Under the Trump administration, Congress has proposed legislation to alter and/or repeal the ACA and/or transform existing federal health programs. While such proposed legislation has not been enacted to date, it is difficult to predict how enforcement initiatives under the ACA and/or additional legislation or regulation enacted in the future may impact our business. If the ACA and/or additional legislation or regulation enacted in the future cause such unintended consequences or indirect impact, they could have a material adverse effect on our business, financial condition and results of operations.

***Competitor companies or hospitals in the European Union, or EU, may be able to take advantage of EU rules permitting sales of unlicensed medicines for individual patients to sell competing products without a marketing authorization.***

The EU medicines rules allow individual member states to permit the supply of a medicinal product without a marketing authorization to fulfill special needs, where the product is supplied in response to a bona fide unsolicited order, formulated in accordance with the specifications of a healthcare professional and for use by an individual patient under his direct personal responsibility. This may in certain countries also apply to products manufactured in a country outside the EU and imported to treat specific patients or small groups of patients. In addition, advanced therapy medicinal products do not need a marketing authorization if they are prepared on a non-routine basis and are used within the same EU member state in a hospital in accordance with a medical prescription for an individual patient.

These exemptions could allow our competitors to make sales in the EU without having obtained a marketing authorization and without undergoing the expense of clinical trials, especially if those competitors have cell processing facilities in the relevant EU member state. Similarly, certain hospitals may be able to compete with us on the basis of these rules.

**Risks Related to This Offering and the Securities Offered Hereby**

***We pay no dividends.***

We have never paid cash dividends in the past, and currently do not intend to pay any cash dividends in the foreseeable future.

***There is, at present, only a limited market for our common stock and there is no assurance that an active trading market for our common stock will develop; the closing of this offering is not conditioned upon the listing of our common stock and warrants on Nasdaq.***

Although our common stock is quoted on the OTCQB market from time to time, the market for our common stock is extremely limited. We intend to apply for the listing of our common stock and the warrants being offered pursuant to this prospectus on The Nasdaq Capital Market. However, no assurance can be given that such application will be approved, or, if approved, that an active market for our shares and warrants will develop or, if developed, will be sustained. The closing of the offering is not conditioned upon the acceptance by Nasdaq of our listing application. If we do not qualify for listing on the Nasdaq Capital Market, we will only be able to sell the shares to certain types of investors, such as institutional investors, and in the limited states in which we have made blue sky filings in connection with this offering. As a result, this may limit the number of shares and warrants we can sell in this offering.

In addition, although there have been market makers in our securities, we cannot assure that these market makers will continue to make a market in our securities or that other factors outside of our control will not cause them to stop market making in our securities. Making a market in securities involves maintaining bid and ask quotations and being able to effect transactions in reasonable quantities at those quoted prices, subject to various securities laws and other regulatory requirements. Furthermore, the development and maintenance of a public trading market depends upon the existence of willing buyers and sellers, the presence of which is not within our control or that of any market maker. Market makers are not required to maintain a continuous two-sided market, are required to honor firm quotations for only a limited number of securities, and are free to withdraw firm quotations at any time. Even with a market maker, factors such as our past losses from operations and the small size of our company mean that there can be no assurance of an active and liquid market for our securities developing in the foreseeable future. Even if a market develops, we cannot assure that a market will continue, or that stockholders will be able to resell their securities at any price.

***The Series A preferred stock is unlisted and there is no public market for it.***

There is no established public trading market for the Series A preferred stock and we do not expect a market to develop. In addition, the Series A preferred stock is not listed on any securities exchange or trading system, and we do not intend to apply for listing on any securities exchange or trading system. Without an active market, the liquidity of the Series A preferred stock is limited, and investors may be unable to liquidate their investments in such securities.

***The offering may not be fully subscribed, and, even if the offering is fully subscribed, we will need additional capital in the future. If additional capital is not available, we may not be able to continue to operate our business pursuant to our business plan or we may have to discontinue our operations entirely.***

The placement agent in this offering will offer the securities on a reasonable best efforts basis, meaning that we may raise substantially less than the total maximum offering amount. We will not provide any refund to investors if less than all of the securities are sold. We have incurred losses in each year since our inception. If we continue to use cash at our historical rates of use, we will need significant additional financing, which we may seek through a combination of private and public equity offerings, debt financings and collaborations and strategic and licensing arrangements. To the extent that we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of any such offerings may include liquidation or other preferences that may adversely affect the then-existing shareholders' rights. Debt financing, if available, would result in increased fixed payment obligations and may involve agreements that include covenants limiting or restricting our ability to take specific actions such as incurring debt or making capital expenditures. If we raise additional funds through collaboration, strategic alliance or licensing arrangements with third parties, we may have to relinquish valuable rights to our technologies, future revenue streams or product candidates, or grant licenses on terms that are not favorable to us.

***Our common stock is classified as a “penny stock”; the restrictions of the penny stock regulations of the Securities and Exchange Commission, or SEC, may result in less liquidity for our common stock.***

The SEC has adopted regulations which define a “penny stock” to be any equity security that has a market price (as therein defined) of less than \$5.00 per share or an exercise price of less than \$5.00 per share, subject to certain exceptions. Based upon the last reported sale price of our common stock on the OTCQB market on October 4, 2017, as of such date, our common stock was a “penny stock”. For any transactions involving a penny stock, unless exempt, the rules require the delivery, prior to any transaction involving a penny stock by a retail customer, of a disclosure schedule prepared by the SEC relating to the penny stock market. Disclosure is also required to be made about commissions payable to both the broker/dealer and the registered representative and current quotations for the securities. Finally, monthly statements are required to be sent disclosing recent price information for the penny stock held in the account and information on the limited market in penny stocks. If the market price for shares of our common stock remains below \$5.00, and we do not satisfy any of the exceptions to the SEC’s definition of penny stock, our common stock will continue to be classified as a penny stock. If such classification should remain in place, as a result of the penny stock restrictions, brokers or potential investors may be reluctant to trade in our securities, which may result in less liquidity for our common stock.

***Stockholders who hold unregistered shares of our common stock are subject to resale restrictions pursuant to Rule 144 due to our former status as a “shell company”.***

We previously were a “shell company” pursuant to Rule 144, promulgated under the Securities Act of 1933, as amended, or Rule 144, and, as such, sales of our securities pursuant to Rule 144 cannot be made unless, among other things, we continue to remain subject to Section 13 or 15(d) of the Securities Exchange Act of 1934, or the Exchange Act, and we file all of our required periodic reports with the SEC under the Exchange Act. Because our unregistered securities cannot be sold pursuant to Rule 144 unless we continue to meet such requirements, any unregistered securities we sell in the future or issue to consultants or employees, in consideration for services rendered or for any other purpose, will have no liquidity unless we continue to comply with such requirements. As a result, it may be more difficult for us to obtain financing to fund our operations and pay our consultants and employees with our securities instead of cash.

***We have incurred, and will continue to incur, increased costs as a result of being an SEC reporting company.***

The Sarbanes-Oxley Act of 2002, as well as a variety of related rules implemented by the SEC, have required changes in corporate governance practices and generally increased the disclosure requirements of public companies. As a reporting company, we incur significant legal, accounting and other expenses in connection with our public disclosure and other obligations. Based upon SEC regulations currently in effect, we are required to establish, evaluate and report on our internal control over financial reporting. We believe that compliance with the myriad of rules and regulations applicable to reporting companies and related compliance issues will require a significant amount of time and



attention from our management.

***Our stock price may fluctuate significantly and be highly volatile and this may make it difficult for you to resell our common stock and warrants at the volume, prices and times you find attractive.***

The market price of our common stock may be subject to significant fluctuations and be highly volatile, which may make it difficult for you to resell shares of our common stock, and the warrants issued pursuant to this offering, at the volume, prices and times you find attractive. There are many factors that will impact our stock and warrant prices and trading volume, including, but not limited to, the factors listed above under “Risks Related to Our Business Generally”, “Risks Related to Our Cell Therapy Product Development Efforts”, “Risks Related to Our Intellectual Property”, “Risks Related to Government Regulation”, and “Risks Related to This Offering and the Securities Offered Hereby.”

Stock markets, in general, experience significant price and volume volatility, and the market price of our common stock and warrants may continue to be subject to such market fluctuations that may be unrelated to our operating performance and prospects. Increased market volatility and fluctuations could result in a substantial decline in the market price of our common stock and warrants.

***There may be future issuances or resales of our common stock which may materially and adversely dilute stockholders' ownership interest and affect the market price of our common stock and warrants.***

Except as described under "Plan of Distribution," we are not restricted from issuing additional shares of our common stock in the future, including securities convertible into, or exchangeable or exercisable for, shares of our common stock. Our issuance of additional shares of common stock in the future will dilute the ownership interests of our then existing stockholders.

We have effective registration statements on Form S-8 under the Securities Act of 1933, as amended, or the Securities Act, registering an aggregate of 4,250,000 shares of our common stock issuable under the Plan. As of September 27, 2017, options to purchase 3,275,700 shares of our common stock were outstanding under the Plan. In addition, as of such date, 45,000 shares of common stock were issued as restricted stock grant pursuant to the Plan and 929,300 shares were reserved for future grants under the Plan. The shares issuable pursuant to the registration statements on Form S-8 will be freely tradable in the public market, except for shares held by affiliates.

The sale of a substantial number of shares of our common stock or securities convertible into, or exchangeable or exercisable for, shares of our common stock, whether directly by us in this offering or future offerings or by our existing stockholders in the secondary market, the perception that such issuances or resales could occur or the availability for future issuances or resale of shares of our common stock or securities convertible into, or exchangeable or exercisable for, shares of our common stock could materially and adversely affect the market price of our common stock and our ability to raise capital through future offerings of equity or equity-related securities on attractive terms or at all.

In addition, our Board of Directors is authorized to designate and issue preferred stock without further stockholder approval, and we may issue other equity and equity-related securities that are senior to our common stock in the future for a number of reasons, including, without limitation, to support operations and growth, and to comply with any future changes in regulatory standards.

***Our principal stockholders currently own a substantial number of shares of our common stock and have, and following the offering will continue to have, the power to significantly influence the vote on all matters submitted to a vote of our stockholders.***

As of September 27, 2017, John M. Desmarais, one of our directors, beneficially owned 1,941,241 shares of our common stock (including 1,447,843 shares of our common stock issuable pursuant to currently exercisable options and warrants), representing 27.5% of the outstanding shares of our common stock. In addition, as of September 27, 2017, Westbury (Bermuda), Ltd., or Westbury, beneficially owned 1,191,662 shares of our common stock (including 239,182 shares of our common stock issuable pursuant to currently exercisable warrants), representing 20.4% of the outstanding shares of our common stock. Mr. Desmarais and Westbury will beneficially own       % and       %, respectively, of the outstanding shares of our common stock following the offering (assuming the maximum offering size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock).

Mr. Desmarais and Westbury, through their beneficial ownership of our common stock, have and following the offering will continue to have, the power to significantly influence the vote on all matters submitted to a vote of our stockholders, including the election of directors, amendments to our certificate of incorporation or bylaws, mergers or other business combination transactions and certain sales of assets outside the usual and regular course of business. The interests of Mr. Desmarais and Westbury may not coincide with the interests of our other stockholders, and they could take actions that advance their own interests to the detriment of our other stockholders.

***We may invest or spend the proceeds from this offering in ways with which you may not agree and in ways that may not earn a profit.***

We intend to use the net proceeds of this offering for the following purposes: undertaking of clinical trials with respect to *BRTX-100* and its related collection and delivery procedure; pre-clinical research and development with respect to our *ThermoStem Program*; repayment of indebtedness; and general corporate and working capital purposes. However, we will retain broad discretion over the use of the proceeds from this offering and may use them for purposes other than those contemplated at the time of this offering. You may not agree with the ways we decide to use these proceeds, and our use of the proceeds may not yield any profits. See “Use of Proceeds.”

***Anti-takeover provisions and the regulations to which we may be subject may make it more difficult for a third party to acquire control of us, even if the change in control would be beneficial to our stockholders.***

We are incorporated in Delaware. Anti-takeover provisions in Delaware law and our certificate of incorporation and bylaws could make it more difficult for a third party to acquire control of us and may prevent stockholders from receiving a premium for their shares of common stock. Our certificate of incorporation provides that our Board of Directors may issue up to 5,000,000 shares of preferred stock (including the Series A preferred stock), in one or more series, without stockholder approval and with such terms, preferences, rights and privileges as the Board of Directors may deem appropriate. These provisions and other factors may hinder or prevent a change in control, even if the change in control would be beneficial to, or sought by, our stockholders.

***In the event that a significant amount of our outstanding debt is converted into equity, the percentage ownership of existing stockholders will be substantially diluted.***

As of October 5, 2017, we had outstanding indebtedness in the amount of \$3,240,162. We intend to seek to have the debtholders convert all or a significant amount of such debt into equity. In the event of any such conversion, the percentage ownership of existing stockholders will be substantially diluted.

***The warrants are speculative in nature.***

The warrants being offered pursuant to this prospectus do not confer any rights of common stock ownership on its holders, such as voting rights or the right to receive dividends, but rather merely represent the right to acquire shares of common stock at a fixed price for a limited period of time. Specifically, commencing on the date of issuance, holders of the warrants may exercise their right to acquire the common stock and pay an exercise price of \$      per

share ( % of the public offering price per share of common stock in this offering), prior to years from the date of issuance, after which date any unexercised warrants will expire and have no further value. Moreover, following this offering, the market value of the warrants is uncertain and there can be no assurance that the market value of the warrants will equal or exceed their public offering price. There can be no assurance that the market price of the common stock will ever equal or exceed the exercise price of the warrants and consequently whether it will ever be profitable for holders of the warrants to exercise the warrants.

***You will experience immediate and substantial dilution in the net tangible book value per share of the common stock you purchase.***

Since the price per share of our common stock being offered is higher than the net tangible book value per share of our common stock, you will suffer substantial dilution in the net tangible book value of the common stock you purchase in this offering. Based on the assumed public offering price of \$ per share, which is the last reported sale price of our common stock on the OTCQB market on , 2017, after deducting the placement agent's commissions and estimated offering expenses payable by us, if you purchase shares of common stock in this offering, you will suffer immediate and substantial dilution of \$ per share in the net tangible book value of the common stock (assuming the maximum offering size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A Preferred Stock). See "Dilution" for a more detailed discussion of the dilution you will incur if you purchase securities in this offering.

To the extent that outstanding options or warrants or awards are exercised, you will experience further dilution. As of June 30, 2017, there were exercisable options outstanding to purchase 1,721,212 shares of common stock at a weighted average exercise price of \$4.74 per share, and warrants outstanding to purchase 3,592,831 shares of common stock at a weighted average exercise price of \$4.93.

In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

In this offering we will sell up to \_\_\_\_\_ shares of our common stock (assuming no investors in this offering choose to purchase shares of Series A preferred stock), or up to approximately \_\_\_\_\_ % of our outstanding common stock as of \_\_\_\_\_, 2017, together with warrants to purchase up to \_\_\_\_\_ shares of our common stock. This sale and any future sales of a substantial number of shares of our common stock in the public market, or the perception that such sales may occur, could adversely affect the price of our common stock. We cannot predict the effect, if any, that market sales of those shares of common stock or the availability of those shares of common stock for sale will have on the market price of our common stock.

***We are an emerging growth company, and we cannot be certain if the reduced reporting requirements applicable to emerging growth companies will make our common stock less attractive to investors.***

We are an emerging growth company, as defined in The Jumpstart Our Business Startups Act, or the JOBS Act. For as long as we continue to be an emerging growth company, we may take advantage of exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies, including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act, reduced disclosure obligations regarding executive compensation in this prospectus and our periodic reports and proxy statements and exemptions from the requirements of holding nonbinding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved. We could remain as an emerging growth company until December 31, 2020, although circumstances could cause us to lose that status earlier.

Even after we no longer qualify as an emerging growth company, we may still qualify as a “smaller reporting company” which would allow us to take advantage of many of the same exemptions from disclosure requirements including not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act and reduced disclosure obligations regarding executive compensation. We cannot predict whether investors will find our common stock less attractive because we may rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and warrants and the prices for our securities may be more volatile.

## **SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS**

Certain statements contained in this prospectus under the captions “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” “Risk Factors,” and elsewhere are “forward-looking statements” within the meaning of the protections of Section 27A of the Securities Act and Section 21E of the Exchange Act. These forward-looking statements are covered by the safe harbor provisions for forward-looking statements contained in the Private Securities Litigation Reform Act of 1995, and we are including this statement for purposes of invoking these safe harbor provisions.

Forward-looking statements are made based on our management’s expectations and beliefs concerning future events impacting our company and are subject to uncertainties and factors relating to our operations and economic environment, all of which are difficult to predict and many of which are beyond our control. You can identify these statements from our use of the words “estimate,” “project,” “believe,” “intend,” “anticipate,” “expect,” “target,” “plan,” “may” expressions. These forward-looking statements may include, among other things:

- statements relating to projected growth and management’s long-term performance goals;
- statements relating to the anticipated effects on results of operations or our financial condition from expected developments or events;
- statements relating to our business and growth strategies; and
- any other statements which are not historical facts.

Forward-looking statements involve known and unknown risks, uncertainties and other important factors that could cause our actual results, performance or achievements, or industry results, to differ materially from our expectations of future results, performance or achievements expressed or implied by these forward-looking statements. These forward-looking statements may not be realized due to a variety of factors, including without limitation:

- our anticipated cash needs and our need for additional financing;
- federal, state and foreign regulatory requirements;
- our ability to conduct clinical trials with respect to our products and services;
- our ability to develop and commercialize our products and services;
- our ability to enter into agreements to implement our business strategy;
- the acceptance of our products and services by patients and the medical community;
- our ability to secure necessary media and reagents, as well as devices, materials and systems, for our clinical trials and commercial production;
- our manufacturing capabilities to produce our products;
- our ability to obtain brown adipose (fat) tissue in connection with our *ThermoStem Program*;
- our ability to maintain exclusive rights with respect to our licensed disc/spine technology;
- our ability to protect our intellectual property;
- our ability to obtain and maintain an adequate level of product liability insurance;
- our ability to obtain third party reimbursement for our products and services from private and governmental insurers;
- the effects of competition in our market areas;
- our reliance on certain key personnel;
- further sales or other dilution of our equity, which may adversely affect the market price of our common stock; and
- other factors and risks described under “Risk Factors” beginning on page 8 of this prospectus.

You should not place undue reliance on any forward-looking statement. We undertake no obligation to update any forward-looking statement to reflect events or circumstances after the date of this prospectus or to reflect the occurrence of unanticipated events.

## USE OF PROCEEDS

We estimate that the net proceeds from this offering, after deducting placement agent commissions and expenses payable by us and other offering expenses payable by us, will be approximately \$            million. However, this is a best efforts offering and there is no assurance that we will sell any shares or receive any proceeds.

We intend to use the net proceeds of this offering for the following purposes:

- undertaking of clinical trials with respect to *BRTX-100* and its related collection and delivery procedure;



pre-clinical research and development with respect to our *ThermoStem Program*;  
repayment of indebtedness; and  
general corporate and working capital purposes.

If we do not sell substantially all of the securities offered by this prospectus, we will need to raise additional capital from other sources in order to fund these purposes, which may delay our planned clinical trials and research and development initiatives.

Before we apply any of the proceeds for any uses, they likely will be temporarily invested in short-term investment securities. The precise amounts and timing of the application of proceeds has yet to be determined by our management.

## **DIVIDEND POLICY**

Holders of our shares of common stock are entitled to dividends when, as and if declared by our Board of Directors out of funds legally available.

We have not declared or paid any dividends in the past to the holders of our common stock and we do not currently anticipate declaring or paying any dividends in the foreseeable future. We intend to retain earnings, if any, to finance the development and expansion of our business. Future dividend policy will be subject to the discretion of our Board of Directors and will be contingent upon future earnings, if any, our financial condition, capital requirements, general business conditions, and other factors. Therefore, we can give no assurance that any dividends of any kind will ever be paid to holders of our common stock. See “Description of Securities-Series A Preferred Stock to be Issued as Part of this Offering” for a discussion of a limitation on our ability to pay dividends to the holders of our common stock.

**CAPITALIZATION**

The following table sets forth our consolidated capitalization as of June 30, 2017 (i) on an actual basis, and (ii) as adjusted to give effect to the sale of \_\_\_\_\_ shares of our common stock, together with warrants to purchase shares of our common stock, at the assumed public offering price of \$ \_\_\_\_\_ per share and warrant (which is the last reported sale price of our common stock on the OTCQB market on \_\_\_\_\_, 2017), for total net proceeds of approximately \$ \_\_\_\_\_ (assuming the maximum offering size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock).

This information should be read together with our consolidated financial statements and other financial information set forth in our financial statements and related notes included elsewhere in this prospectus.

	<b>At June 30, 2017</b>	
	<b>Actual</b>	<b>As Adjusted<sup>(1)(2)</sup></b>
<b>Non-Current Liabilities</b>	\$144,536	\$
<b>Stockholders' (Deficiency) Equity</b>		
Preferred stock, \$0.01 par value; 5,000,000 shares authorized, including _____ shares of Series A Preferred Stock; -0- shares issued and outstanding before the offering and on an as adjusted basis <sup>(1)</sup> ;	\$-	\$ -
Common stock, \$0.001 par value; 30,000,000 shares authorized; 5,491,605 shares issued and outstanding before the offering; _____ shares issued and outstanding, as adjusted <sup>(1)(2)</sup>	5,491	
Additional paid-in capital	41,772,200	
Accumulated deficit	(47,492,735)	
Total stockholders' (deficiency) equity	(5,715,044 )	
Total capitalization	\$(5,570,508 )	\$

(1) Assumes that no investors in this offering choose to purchase shares of Series A preferred stock.

(2) Assumes the sale of all \$15,000,000 of securities offered by this prospectus.

## DILUTION

If you invest in our securities in this offering, your ownership interest will be diluted to the extent of the difference between the public offering price per share of our common stock and the net tangible book value per share of our common stock immediately after this offering.

The net tangible book value (deficit) is determined by dividing our total tangible assets less our total liabilities by the number of shares of common stock outstanding. Our historical net tangible book value (deficit) as of June 30, 2017 was \$(6,641,441), or \$(1.21) per share. After giving effect to the sale of \_\_\_\_\_ shares of common stock (assuming the maximum offering size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock), together with warrants to purchase \_\_\_\_\_ shares of common stock by us at an assumed public offering price of \$ per share, which is the last reported sale price of our common stock on the OTCQB market on \_\_\_\_\_, 2017, less the estimated offering expenses payable by us and compensation payable to the placement agent, our pro forma net tangible book value at June 30, 2017 would have been approximately \$ per share. This would represent an immediate increase in the net tangible book value of \$ per share to existing stockholders and an immediate dilution of \$ per share to investors in this offering. The following table illustrates this per share dilution:

Assumed public offering price per share	\$
Historical net tangible book value (deficit) per share as of June 30, 2017	\$(1.21)
Increase in historical net tangible book value per share attributable to existing investors in this offering	
Pro forma, as adjusted, net tangible book value per share as of June 30, 2017 after giving effect to this offering	\$
Dilution per share to investors in this offering	\$

The following table summarizes, as of June 30, 2017, the differences between the number of shares of common stock purchased from us, the total consideration and the average price per share paid by existing stockholders and by investors participating in this offering of \_\_\_\_\_ per share, which is the last reported sale price of our common stock on the OTCQB market on \_\_\_\_\_, 2017.

	Shares Purchased	Total Consideration	Average Price per Share
	Number	Amount	
	Percent	Percent	
Existing stockholders		\$	\$
New investors			\$
Totals	100	\$	\$

The above discussion and table is based on 5,491,605 shares of common stock outstanding as of June 30, 2017, assumes that the maximum offering size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock, and excludes:

1,721,212 shares of common stock issuable upon the exercise of stock options that were exercisable as of June 30, 2017 at a weighted-average exercise price of \$4.74 per share;  
3,592,831 shares of common stock issuable upon the exercise of warrants to purchase common stock that were outstanding as of June 30, 2017, with a weighted average exercise price of \$4.93 per share; and  
919,300 shares available for future issuance as of June 30, 2017 under the Plan.

To the extent that outstanding options and warrants are exercised, you will experience further dilution. In addition, we may choose to raise additional capital due to market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. To the extent that additional capital is raised through the sale of equity or convertible debt securities, the issuance of these securities may result in further dilution to our stockholders.

**SELECTED FINANCIAL DATA**

The following table sets forth selected consolidated financial data of BioRestorative Therapies, Inc. The financial data as of June 30, 2017 and for the six months ended June 30, 2017 and 2016 have been derived from our unaudited condensed consolidated financial statements included in this prospectus under “Index to Financial Statements”. The financial data as of December 31, 2016 and 2015 and for the years then ended have been derived from our audited consolidated financial statements included in this prospectus under “Index to Financial Statements”. The selected consolidated financial results in the table below are not necessarily indicative of our expected future operating results. The following selected historical financial information should be read together with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the historical financial statements and related notes included elsewhere in this prospectus.

	For The Six Months Ended June 30, 2017		For The Years Ended December 31, 2016	
	2016	2015	2016	2015
Statement of Operations Data:				
Revenues	\$27,000	\$25,280	\$36,355	\$628,915
Cost of sales	-	81	102	261,504
Gross Profit	27,000	25,199	36,253	367,411
Operating Expenses				
Marketing and promotion	38,123	40,695	86,451	168,352
Consulting	1,339,444	834,813	1,605,917	1,394,037
Research and development	1,416,578	1,474,732	2,883,563	2,105,059
General and administrative	2,291,241	1,885,239	3,257,579	3,870,325
Total Operating Expenses	5,085,386	4,235,479	7,833,510	7,537,773
Loss From Operations	(5,058,386)	(4,210,280)	(7,797,257)	(7,170,362)
Other (Expense) Income				
Interest expense	(193,204 )	(87,848 )	(221,608 )	(263,583 )
Amortization of debt discount	(216,909 )	(402,469 )	(542,336 )	(339,443 )
Loss on extinguishment of notes payable, net	(59,938 )	(16,660 )	(58,787 )	(35,677 )
Warrant modification expense	(4,500 )	(28,486 )	(28,486 )	(114,415 )
Gain on settlement of payables	-	-	12,182	-
Total Other Expense	(474,551 )	(535,463 )	(839,035 )	(753,118 )
Net Loss	\$(5,532,937)	\$(4,745,743)	\$(8,636,292)	\$(7,923,480)
Net Loss Per Share - Basic and Diluted	\$(1.06 )	\$(1.26 )	\$(2.10 )	\$(3.20 )
Weighted Average Number of Common Shares	5,196,300	3,776,207	4,105,820	2,472,889
Outstanding - Basic and Diluted				



	<b>June 30, 2017</b> (unaudited)	December 31,	
		2016	2015
Balance Sheet Data:			
Cash	\$1,891	\$31,822	\$166,555
Working capital deficiency	\$(6,947,637)	\$(5,783,184)	\$(5,323,179)
Total assets	\$1,423,680	\$1,580,015	\$2,017,006
Total liabilities	\$7,138,724	\$6,580,297	\$5,925,469
Total stockholders' deficiency	\$(5,715,044)	\$(5,000,282)	\$(3,908,463)

## MARKET FOR COMMON STOCK AND

### RELATED STOCKHOLDER MATTERS

Our common stock is currently listed for trading on the OTCQB market under the symbol "BRTX". At September 27, 2017, there were 5,599,178 shares of common stock outstanding. At September 27, 2017, there were 296 holders of record of our common stock.

The last reported sales price of our common stock on October 4, 2017 was \$3.15 per share. The following table shows the high and low bid prices per share for our common stock by calendar quarter for the periods indicated. The quotations set forth below reflect inter-dealer quotations that do not include retail markups, markdowns or commissions and may not represent actual transactions.

	High	Low
2015		
First Quarter	\$9.90	\$7.00
Second Quarter	\$9.70	\$6.00
Third Quarter	\$12.25	\$5.50
Fourth Quarter	\$6.09	\$2.95
2016		
First Quarter	\$4.45	\$2.61
Second Quarter	\$4.48	\$3.40
Third Quarter	\$3.91	\$2.71
Fourth Quarter	\$3.68	\$2.90
2017		
First Quarter	\$5.01	\$3.00
Second Quarter	\$4.75	\$2.85

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Third Quarter	\$3.80	\$2.70
Fourth Quarter (through October 4, 2017)	\$3.20	\$2.95



## MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

*The following discussion and analysis of the results of operations and financial condition of BioRestorative Therapies, Inc. as of June 30, 2017 and for the six months ended June 30, 2017 and 2016 and as of December 31, 2016 and 2015 and for the years then ended should be read in conjunction with our financial statements and the notes to those financial statements that are included elsewhere in this prospectus under "Index to Financial Statements". References in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" to "us," "we," "our" and similar terms refer to BioRestorative Therapies, Inc. This "Management's Discussion and Analysis of Financial Condition and Results of Operations" contains forward-looking statements as that term is defined in the federal securities laws. The events described in forward-looking statements contained in this "Management's Discussion and Analysis of Financial Condition and Results of Operations" may not occur. Generally these statements relate to business plans or strategies, projected or anticipated benefits or other consequences of our plans or strategies, projected or anticipated benefits from acquisitions to be made by us, or projections involving anticipated revenues, earnings or other aspects of our operating results. The words "estimate," "project," "believe," "intend," "anticipate," "expect," "target," "plan," "may" and their opposites and similar expressions, are intended to identify forward-looking statements. We caution you that these statements are not guarantees of future performance or events and are subject to a number of uncertainties, risks and other influences, many of which are beyond our control, which may influence the accuracy of the statements and the projections upon which the statements are based. Reference is made to "Risk Factors" beginning on page 8 of this prospectus for a discussion of some of the uncertainties and risks associated with these statements.*

### Overview

We develop therapeutic products and medical therapies using cell and tissue protocols, primarily involving adult (non-embryonic) stem cells. We are currently pursuing our *Disc/Spine Program* with our initial therapeutic product being called *BRTX-100*. In January 2017 we announced that we had submitted an investigational new drug, or IND, application to the FDA to obtain clearance to commence a Phase 2 clinical trial using our lead cell therapy candidate, *BRTX-100*, to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs. In February 2017, we received such clearance from the FDA. We intend to commence such clinical trial during the second quarter of 2018 (assuming the receipt of sufficient proceeds from the offering or the receipt of other necessary funding). We have obtained a license to use technology for adult stem cell treatment of disc and spine conditions, including protruding and bulging lumbar discs. The technology is an advanced stem cell injection procedure that may offer relief from lower back pain, buttock and leg pain, and numbness and tingling in the legs and feet. We are also developing our *ThermoStem Program*. This pre-clinical program involves the use of brown adipose (fat) in connection with the cell-based treatment of type 2 diabetes and obesity as well as hypertension, other metabolic disorders and cardiac deficiencies. A United States patent related to the *ThermoStem Program* was issued in September 2015, and an Australian patent related to the *ThermoStem Program* was issued in August 2017.

We have licensed a patented curved needle device that is a needle system designed to deliver cells and/or other therapeutic products or materials to the spine and discs. We also offer stem cell derived cosmetic and skin care products.

Our offices are located in Melville, New York where we have established a laboratory facility in order to increase our capabilities for the further development of possible cellular-based treatments, products and protocols, stem cell-related intellectual property and translational research applications.

As of June 30, 2017, our accumulated deficit was \$47,492,735, our stockholders' deficiency was \$5,715,044 and our working capital deficiency was \$6,947,637. We have historically only generated a modest amount of revenue, and our losses have principally been operating expenses incurred in research and development, marketing and promotional activities in order to commercialize our products and services, plus costs associated with meeting the requirements of being a public company. We expect to continue to incur substantial costs for these activities over at least the next year.

Based upon our working capital deficiency as of June 30, 2017 and our forecast for continued operating losses, we require equity and/or debt financing to continue our operations. As of June 30, 2017, our outstanding debt of \$2,654,062, together with interest at rates ranging between 0% and 15% per annum, was due on various dates through February 2018. Subsequent to June 30, 2017 and through October 4, 2017, we have received aggregate equity proceeds and debt proceeds of \$30,000 and \$710,000, respectively, debt and accrued interest of \$133,735 and \$9,234, respectively, has been converted into or exchanged for common stock, we have repaid \$40,000 of debt and the due date for the repayment of \$1,724,313 of debt has been extended from between February 2017 and August 2017 to dates between October 2017 and October 2018. Giving effect to the above actions, we currently have notes payable aggregating \$557,265 which are past due. Based upon our working capital deficiency and outstanding debt, we expect to be able to fund our operations through October 2017. We will require additional funding to repay our outstanding debt (\$2,654,062 as of June 30, 2017) (assuming that no debt is converted into equity) and fund general operations. We anticipate that we will require approximately \$10,000,000 in financing to commence and complete a Phase 2 clinical trial using *BRTX-100*. We anticipate that we will require approximately \$30,000,000 in further additional funding to complete our clinical trials using *BRTX-100* (assuming the receipt of no revenues). We will also require a substantial amount of additional funding if we determine to establish a manufacturing operation with regard to our *Disc/Spine Program* (as opposed to utilizing a third-party manufacturer) and to implement our other programs, including our metabolic *ThermoStem Program*. No assurance can be given that the anticipated amounts of required funding are correct or that we will be able to accomplish our goals within the timeframes projected. In addition, no assurance can be given that we will be able to obtain any required financing on commercially reasonable terms or otherwise.

We are currently seeking several different financing alternatives to support our future operations and are currently in the process of negotiating extensions or discussing conversions to equity with respect to our outstanding indebtedness. If we are unable to obtain such additional financing on a timely basis or, notwithstanding any request we may make, our debt holders do not agree to convert their notes into equity or extend the maturity dates of their notes, we may have to curtail our development, marketing and promotional activities, which would have a material adverse effect on our business, financial condition and results of operations, and ultimately we could be forced to discontinue our operations and liquidate. See “Liquidity and Capital Resources” below.

## Consolidated Results of Operations

### Six Months Ended June 30, 2017 Compared with Six Months Ended June 30, 2016

The following table presents selected items in our unaudited condensed consolidated statements of operations for the six months ended June 30, 2017 and 2016, respectively:

For The Six Months  
Ended

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	June 30, 2017	2016
Revenues	\$27,000	\$25,280
Cost of sales	-	81
Gross Profit	27,000	25,199
Operating Expenses		
Marketing and promotion	38,123	40,695
Consulting	1,339,444	834,813
Research and development	1,416,578	1,474,732
General and administrative	2,291,241	1,885,239
Total Operating Expenses	5,085,386	4,235,479
Loss From Operations	(5,058,386)	(4,210,280)
Other Expense		
Interest expense	(193,204 )	(87,848 )
Amortization of debt discount	(216,909 )	(402,469 )
Loss on extinguishment of notes payable, net	(59,938 )	(16,660 )
Warrant modification expense	(4,500 )	(28,486 )
Total Other Expense	(474,551 )	(535,463 )
Net Loss	\$(5,532,937)	\$(4,745,743)

### ***Revenues***

For the six months ended June 30, 2017, we generated \$27,000 of royalty revenue in connection with our sublicense agreement. For the six months ended June 30, 2016, we generated \$25,000 of royalty revenue in connection with our sublicense agreement and \$280 of sales of Stem Pearls skincare products.

### ***Cost of sales***

For the six months ended June 30, 2017, cost of sales was \$0 as compared to \$81 for the six months ended June 30, 2016. For the six months ended June 30, 2016, cost of sales consisted of the costs of the underlying Stem Pearls skincare products.

### ***Marketing and promotion***

Marketing and promotion expenses include advertising and promotion, marketing and seminars, meals, entertainment and travel expenses. For the six months ended June 30, 2017, marketing and promotion expenses decreased by \$2,572, or 6%, from \$40,695 to \$38,123 as compared to the six months ended June 30, 2016.

We expect that marketing and promotion expenses will increase in the future as we increase our marketing activities following full commercialization of our products and services.

### ***Consulting***

Consulting expenses consist of consulting fees and stock-based compensation to consultants. For the six months ended June 30, 2017, consulting expenses increased \$504,631, or 60%, from \$834,813 to \$1,339,444, as compared to the six months ended June 30, 2016. The increase is primarily due to an approximately \$474,000 increase in consultant stock-based compensation expense related to options granted to directors and consultants and a \$13,000 increase in other cash consulting fees.

### ***Research and development***

Research and development expenses include cash and non-cash compensation of (a) our Vice President of Research and Development; (b) our Scientific Advisory Board members; (c) our President, Disc/Spine Division (who resigned in July 2017); and (d) laboratory staff and costs related to our brown fat and disc/spine initiatives. Research and development expenses are expensed as they are incurred. For the six months ended June 30, 2017, research and development expenses decreased by \$58,154, or 4%, from \$1,474,732 to \$1,416,578, as compared to the six months ended June 30, 2016. The decrease was primarily as a result of an approximately \$245,000 decrease in costs related to a third party laboratory associated with the completion of our animal study for our disc/spine initiative, partially offset by approximately \$182,000 of stock-based compensation expense in connection with the repricing of options granted to our Vice President of Research and Development, our Scientific Advisory Board members, our President, Disc/Spine Division and laboratory staff.

We expect that our research and development expenses will increase with the continuation of the aforementioned initiatives.

***General and administrative***

General and administrative expenses consist primarily of salaries, bonuses, payroll taxes, severance costs and stock-based compensation to employees (excluding any cash or non-cash compensation of (a) our Vice President of Research and Development; (b) our President, Disc/Spine Division; and (c) our laboratory staff) as well as corporate support expenses such as legal and professional fees, investor relations and occupancy related expenses. For the six months ended June 30, 2017, general and administrative expenses increased by \$406,002, or 22%, from \$1,885,239 to \$2,291,241, as compared to the six months ended June 30, 2016. The increase is primarily related to approximately \$272,000 in stock-based compensation to employees and our Chief Executive Officer, and an increase in professional fees of approximately \$88,000 related to legal services rendered in connection with patent applications.

We expect that our general and administrative expenses will increase as we expand our staff, develop our infrastructure and incur additional costs to support the growth of our business.

***Interest expense***

For the six months ended June 30, 2017, interest expense increased \$105,356, or 120%, as compared to the six months ended June 30, 2016. The increase was due to an increase in interest-bearing short-term borrowings as compared to the six months ended June 30, 2016.

***Amortization of debt discount***

For the six months ended June 30, 2017, amortization of debt discount decreased \$185,560, or 46%, as compared to the six months ended June 30, 2016. The decrease was primarily due to the timing of the recognition of expense related to the beneficial conversion features of convertible notes.

***Loss on extinguishment of notes payable***

For the six months ended June 30, 2017, we recorded a loss on extinguishment of notes payable of \$59,938, which is associated with investors' exchanges of debt into equity securities, as compared to a loss on extinguishment of notes payable of \$16,660 for the six months ended June 30, 2016.

**Warrant modification expense**

During the six months ended June 30, 2017 and 2016, we recorded expense related to the modification of the exercise prices of certain outstanding warrants of \$4,500 and \$28,486, respectively.

**Year Ended December 31, 2016 Compared with Year Ended December 31, 2015**

The following table presents selected items in our consolidated statements of operations for the years ended December 31, 2016 and 2015, respectively:

	For the Years Ended December 31,	
	2016	2015
Revenues	\$36,355	\$628,915
Cost of sales	102	261,504
Gross Profit	36,253	367,411
Operating Expenses		
Marketing and promotion	86,451	168,352
Consulting	1,605,917	1,394,037
Research and development	2,883,563	2,105,059
General and administrative	3,257,579	3,870,325
Total Operating Expenses	7,833,510	7,537,773
Loss From Operations	(7,797,257)	(7,170,362)
Other (Expense) Income		
Interest expense	(221,608 )	(263,583 )
Amortization of debt discount	(542,336 )	(339,443 )
Loss on extinguishment of notes payable, net	(58,787 )	(35,677 )
Warrant modification expense	(28,486 )	(114,415 )
Gain on settlement of payables	12,182	-
Total Other Expense	(839,035 )	(753,118 )
Net Loss	\$(8,636,292)	\$(7,923,480)



### *Revenues*

For the year ended December 31, 2016, we generated \$36,000 from royalty revenue in connection with our sublicense agreement and \$355 from sales of *Stem Pearls* skincare products. For the year ended December 31, 2015, we generated \$609,490 of revenues through the services provided pursuant to our research and development agreements, \$19,000 from royalty revenue in connection with our sublicense agreement and \$425 from sales of *Stem Pearls* skincare products. The decrease in our revenues for the year ended December 31, 2016 versus 2015 was primarily due to the completion of our obligations under our research and development agreements as of December 31, 2015, and as of the date of this prospectus there are no new research and development agreements.

### *Cost of sales*

For the year ended December 31, 2016, cost of sales was \$102 as compared to \$261,504 for 2015. For the year ended December 31 2016, cost of sales consisted of the costs of the underlying *Stem Pearls* skincare products. For the year ended December 31, 2015, cost of sales consisted primarily of the portion of employee salary expense, consultant fees, and laboratory supplies expense related to our research and development agreements. The decrease in our cost of sales for the year ended December 31, 2016 versus 2015 was due to the completion of our obligations under our research and development agreements during 2015.

### *Gross Profit*

For the year ended December 31, 2016, gross profit declined to \$36,253 (approximately 100% of revenues) as compared to \$367,411 (58% of revenues) for the year ended December 31, 2015, primarily due to completion of obligations under our research and development agreements during 2015.

### *Marketing and promotion*

Marketing and promotion expenses include advertising and promotion, marketing and seminars, meals, entertainment and travel expenses. For the year ended December 31, 2016, marketing and promotion expenses decreased by \$81,901, or 49%, from \$168,352 to \$86,451, as compared to the year ended December 31, 2015. The decrease is primarily due to reduced travel activity and associated costs of approximately \$79,000.

We expect that marketing and promotion expenses will increase in the future as we increase our marketing activities following full commercialization of our products and services.

*Consulting*

Consulting expenses consist of consulting fees and stock-based compensation to consultants. For the year ended December 31, 2016, consulting expenses increased \$211,880, or 15%, from \$1,394,037 to \$1,605,917, as compared to the year ended December 31, 2015. The increase is primarily due to an approximately \$180,000 increase in consultant stock-based compensation expense related to options granted to directors and consultants and a \$75,000 increase in cash director fees related to the appointment of two additional directors in 2016, partially offset by a decrease of approximately \$43,000 in other cash consulting fees.

*Research and development*

Research and development expenses include cash and non-cash compensation of (a) our Chief Executive Officer (in part during 2015); (b) our Vice President of Research and Development; (c) our Scientific Advisory Board members; (d) our President, Disc/Spine Division; and (e) laboratory staff and costs related to our brown fat and disc/spine initiatives. Research and development expenses are expensed as they are incurred. For the year ended December 31, 2016, research and development expenses increased by \$778,504, from \$2,105,059 to \$2,883,563, or 37%, as compared to the year ended December 31, 2015. The increase is primarily related to an approximately \$560,000 increase in payroll and associated taxes due to salary raises, increased headcount and cash bonuses, an approximately \$196,000 increase in costs related to a third party laboratory associated with our disc/spine initiative, and an approximately \$76,000 increase in stock-based compensation to our Vice President of Research and Development, President, Disc/Spine Division, and Scientific Advisory Board members, partially offset by an approximately \$108,000 decrease due to our Chief Executive Officer no longer devoting time to research and development.

We expect that our research and development expenses will increase with the continuation of the aforementioned initiatives.

*General and administrative*

General and administrative expenses consist primarily of salaries, bonuses, payroll taxes, severance costs and stock-based compensation to employees (excluding any cash or non-cash compensation of (a) our Chief Executive Officer attributable to research and development (through 2015); (b) our Vice President of Research and Development; (c) our President, Disc/Spine Division; and (d) our laboratory staff) as well as corporate support expenses such as legal and professional fees, investor relations and occupancy related expenses. For the year ended December 31, 2016, general and administrative expenses decreased by \$612,746, or 16%, from \$3,870,325 to \$3,257,579, as compared to the year ended December 31, 2015. The decrease is primarily related to decreased professional fees of approximately \$965,000, mainly incurred in connection with our 2015 aborted underwritten

public offering and a 2015 legal settlement, partially offset by an increase of approximately \$326,000 in stock-based compensation to employees and our Chief Executive Officer.

We expect that our general and administrative expenses will increase as we expand our staff, develop our infrastructure and incur additional costs to support the growth of our business.

*Interest expense*

For the year ended December 31, 2016, interest expense decreased \$41,975, or 16%, to \$221,608 as compared to \$263,583 during the year ended December 31, 2015. The decrease was due to a reduction in interest-bearing short-term borrowings as compared to the year ended December 31, 2015.

*Amortization of debt discount*

For the year ended December 31, 2016, amortization of debt discount increased by \$202,893, or 60%, to \$542,336 as compared to \$339,443 during the year ended December 31, 2015. The increase was primarily due to the timing of the recognition of expense related to the beneficial conversion features of convertible notes and the recognition of the debt discount expense.

*Loss on extinguishment of notes payable, net*

For the year ended December 31, 2016, we recorded a loss on extinguishment of notes payable, net, of \$58,787, which is associated with investors' exchange of debt into equity securities, as compared to a loss on extinguishment of notes payable of \$35,677 for the year ended December 31, 2015.

*Warrant modification expense*

During the year ended December 31, 2016, we recorded expense related to the modification of outstanding warrants of \$28,486, as compared to expense related to the modification of outstanding warrants of \$114,415 for the year ended December 31, 2015.

*Gain on settlement of payables, net*

During the year ended December 31, 2016, we recorded a gain on settlement of payables, net, of \$12,182. We had no such gains during the year ended December 31, 2015.

**Liquidity and Capital Resources**

**Liquidity**

We measure our liquidity in a number of ways, including the following:

	June 30, 2017 (unaudited)	December 31,	
		2016	2015
Cash	\$1,891	\$31,822	\$166,555
Working Capital Deficiency	\$(6,947,637)	\$(5,783,184)	\$(5,323,179)

Notes Payable (Gross)	\$2,654,062	\$2,336,565	\$1,470,083
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### Availability of Additional Funds

Based upon our working capital deficiency and stockholders' deficiency of \$6,947,637 and \$5,715,044, respectively, as of June 30, 2017, we require additional equity and/or debt financing to continue our operations. These conditions raise substantial doubt about our ability to continue as a going concern within the twelve months from the date of this prospectus.

Subsequent to June 30, 2017 and through October 4, 2017, we have received aggregate equity proceeds and debt proceeds of \$30,000 and \$710,000, respectively, debt and accrued interest of \$133,735 and \$9,234, respectively, has been converted into or exchanged for common stock, we have repaid \$40,000 of debt and the due date for the repayment of \$1,724,313 of debt has been extended from dates between February 2017 and August 2017 to dates between October 2017 and October 2018. Giving effect to the above actions, we currently have notes payable aggregating \$557,265 which are past due. As of October 5, 2017, our outstanding debt was as follows:

Maturity Date	Principal Amount
Past Due	\$557,265
QE 9/30/2017	-
QE 12/31/2017	1,554,250
QE 3/31/2018	352,083
QE 6/30/2018	125,000
QE 9/30/2018	214,500
QE 12/31/2018	437,063
	\$3,240,162

Based upon our working capital deficiency, outstanding debt and forecast for continued operating losses we expect that the cash we currently have available will fund our operations through October 2017. Thereafter, we will need to raise further capital, through the sale of additional equity or debt securities, to support our future operations and to repay our debt (unless, if requested, the debt holders agree to convert their notes into equity or extend the maturity dates of their notes). Our operating needs include the planned costs to operate our business, including amounts required to fund working capital and capital expenditures. Our future capital requirements and the adequacy of our available funds will depend on many factors, including our ability to successfully commercialize our products and services, competing technological and market developments, and the need to enter into collaborations with other companies or acquire other companies or technologies to enhance or complement our product and service offerings.

If we are able to complete this offering, we anticipate that the estimated net proceeds of \$ \_\_\_\_\_ from this offering will fund our operations until \_\_\_\_\_ (assuming the maximum offering size of \$15,000,000 is achieved, we do not receive any revenues from operations, we do not receive any additional financing and our remaining debt is not converted into equity) and should permit us to undertake clinical trials with respect to *BRTX-100* and its related collection and delivery procedure, perform pre-clinical research and development with respect to our *ThermoStem Program* and satisfy certain debt and working capital obligations.

We may be unable to raise sufficient additional capital when we need it or raise capital on favorable terms. Debt financing may require us to pledge certain assets and enter into covenants that could restrict certain business activities or our ability to incur further indebtedness, and may contain other terms that are not favorable to our stockholders or us. If we are unable to obtain adequate funds on reasonable terms, we may be required to significantly curtail or discontinue operations or obtain funds by entering into financing agreements on unattractive terms.

Our consolidated financial statements included elsewhere in this prospectus have been prepared in conformity with accounting principles generally accepted in the United States of America, which contemplate our continuation as a going concern and the realization of assets and satisfaction of liabilities in the normal course of business. The carrying amounts of assets and liabilities presented in the financial statements do not necessarily purport to represent realizable or settlement values. The financial statements do not include any adjustment that might result from the outcome of this uncertainty.

During the six months ended June 30, 2017 and 2016 and the years ended December 31, 2016 and 2015, our sources and uses of cash were as follows:

#### **Net Cash Used in Operating Activities**

We experienced negative cash flows from operating activities for the six months ended June 30, 2017 and 2016 in the amounts of \$1,984,931 and \$2,735,405, respectively. The net cash used in operating activities for the six months ended June 30, 2017 was primarily due to cash used to fund a net loss of \$5,532,937, adjusted for non-cash expenses in the aggregate amount of \$2,882,013 plus \$665,993 of cash generated by changes in the levels of operating assets and liabilities, primarily as a result of increases in accounts payable, plus accrued interest, expenses and other liabilities. The net cash used in operating activities for the six months ended June 30, 2016 was primarily due to cash used to fund a net loss of \$4,745,743, adjusted for non-cash expenses in the aggregate amount of \$1,933,040, plus \$77,298 of cash provided by changes in the levels of operating assets and liabilities, primarily as a result of an increase in accrued interest, expenses, other current liabilities, and by a decrease in accounts receivables, partially offset by a decrease in accounts payable.

We experienced negative cash flow from operating activities for the years ended December 31, 2016 and 2015 in the amounts of \$5,002,675 and \$3,122,063, respectively. The net cash used in operating activities for the year ended December 31, 2016 was primarily due to cash used to fund a net loss of \$8,636,292, adjusted for non-cash expenses in the aggregate amount of \$3,464,871, partially offset by \$168,745 of cash provided by changes in the levels of operating assets and liabilities, primarily as a result of increases in accrued expenses and other liabilities, due to cash constraints during the period. The net cash used in operating activities for the year ended December 31, 2015 was primarily due to cash used to fund a net loss of \$7,923,480, adjusted for non-cash expenses in the aggregate amount of \$2,743,141, partially offset by \$2,058,276 of cash provided by changes in the levels of operating assets and liabilities, primarily as a result of increases in accounts payable plus accrued expenses and other liabilities, due to cash constraints during the period.



### **Net Cash Used in Investing Activities**

During the six months ended June 30, 2017, there was no net cash used in or provided by investing activities. During the six months ended June 30, 2016, net cash used in investing activities was \$151,200, due to cash used for the purchase of furniture, computer equipment and medical equipment.

During the year ended December 31, 2016, net cash used in investing activities was \$188,764 used for the purchase of furniture, computer equipment and medical equipment. During the year ended December 31, 2015, net cash used in investing activities was \$483,069 due to \$408,069 used for the purchase of medical equipment, leasehold improvements and computer equipment plus \$75,000 used to retain the exclusivity of our disc/spine license.

### **Net Cash Provided by Financing Activities**

Net cash provided by financing activities during the six months ended June 30, 2017 and 2016 was \$1,955,000 and \$3,236,240, respectively. During the six months ended June 30, 2017, \$786,000 of net proceeds were from debt financings and other borrowings and \$1,169,000 of proceeds were from equity financings (including proceeds received in connection with the exercise of common stock purchase warrants). During the six months ended June 30, 2016, \$789,970 of net proceeds were from debt financings and other borrowings and \$2,446,270 of proceeds were from equity financings (including proceeds received in connection with the exercise of common stock purchase warrants).

Net cash provided by financing activities during the years ended December 31, 2016 and 2015 was \$5,056,706 and \$3,679,889, respectively. During the year ended December 31, 2016, \$1,345,471 of net proceeds were from debt financings and \$3,711,236 of proceeds were from equity financings (including proceeds received in connection with the exercise of common stock purchase warrants). During the year ended December 31, 2015, \$1,382,045 of net proceeds were from debt financings and \$2,297,844 of proceeds were from equity financings (including proceeds received in connection with the exercise of common stock purchase warrants).

### **Critical Accounting Policies and Estimates**

#### **Use of Estimates**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities at dates of the financial statements and the reported amounts of revenue and expenses during the periods. Our significant estimates and assumptions include the recoverability and useful lives of long-lived assets, the fair value of our equity securities and the valuation allowance related to our deferred tax assets. Certain of our estimates, including the carrying amount of the intangible assets, could be affected by external conditions, including those unique to us and general economic conditions. It is reasonably possible that these external factors could have an effect on our estimates and could cause actual results to differ from those estimates.

### **Intangible Assets**

Intangible assets are comprised of trademarks and licenses with original estimated useful lives of 10 and 17.7 years, respectively. Once placed into service, we amortize the cost of the intangible assets over their estimated useful lives on a straight-line basis.

### **Impairment of Long-lived Assets**

We review for the impairment of long-lived assets whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. An impairment loss would be recognized when estimated future cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. While our near term liquidity is tight, historically we have been successful in raising capital as needed (although there can be no assurance that we will continue to be successful in raising capital as needed). We continue to progress our scientific agenda and meet related milestones. We have not identified any impairment losses.

## **Income Taxes**

We recognize deferred tax assets and liabilities for the expected future tax consequences of items that have been included or excluded in our financial statements or tax returns. Deferred tax assets and liabilities are determined on the basis of the difference between the tax basis of assets and liabilities and their respective financial reporting amounts, or temporary differences, at enacted tax rates in effect for the years in which the temporary differences are expected to reverse.

We adopted the provisions of Accounting Standards Codification, or ASC, Topic 740-10, which prescribes a recognition threshold and measurement process for financial statements recognition and measurement of a tax position taken or expected to be taken in a tax return.

## **Stock-Based Compensation**

We measure the cost of services received in exchange for an award of equity instruments based on the fair value of the award. For employees and directors, the fair value of the award is measured on the grant date and for non-employees, the fair value of the award is generally re-measured on vesting dates and interim financial reporting dates until the service period is complete. The fair value amount is then recognized over the period during which services are required to be provided in exchange for the award, usually the vesting period. Since the shares underlying the Plan were registered on May 27, 2014, we estimate the fair value of the awards granted under the Plan based on the market value of our freely tradable common stock as reported on the OTCQB market. The fair value of our restricted equity instruments was estimated by management based on observations of the cash sales prices of both restricted shares and freely tradable shares. Awards granted to directors are treated on the same basis as awards granted to employees.

## **Recently Issued Accounting Pronouncements**

In May 2014, the Financial Accounting Standards Board, or the FASB, issued Accounting Standards Update, or ASU, No. 2014-09, "Revenue from Contracts with Customers", or ASU 2014-09. ASU 2014-09 supersedes the revenue recognition requirements in ASC 605 - Revenue Recognition and most industry-specific guidance throughout the ASC. The standard requires that an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the company expects to be entitled in exchange for those goods or services. ASU 2014-09 should be applied retrospectively to each prior reporting period presented or retrospectively with the cumulative effect of initially applying ASU 2014-09 recognized at the date of initial application. To allow entities additional time to implement systems, gather data and resolve implementation questions, the FASB issued ASU No. 2015-14, Revenue from Contracts with Customers (Topic 606): Deferral of the Effective Date, in August 2015, to defer the effective date of ASU No. 2014-09 for one year, which is fiscal years beginning

after December 15, 2017. We are currently evaluating the impact of the adoption of ASU 2014-09 on our consolidated financial statements or disclosures.

In August 2014, the FASB issued ASU No. 2014-15, “Presentation of Financial Statements – Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity’s Ability to Continue as a Going Concern”, or ASU 2014-15. ASU 2014-15 explicitly requires management to evaluate, at each annual or interim reporting period, whether there are conditions or events that exist which raise substantial doubt about an entity’s ability to continue as a going concern and to provide related disclosures. ASU 2014-15 is effective for annual periods ending after December 15, 2016, and annual and interim periods thereafter, with early adoption permitted. The adoption of this standard did not have a material impact on our financial statement disclosures.

In April 2015, the FASB issued ASU No. 2015-03, “Interest - Imputation of Interest (Subtopic 835-30): Simplifying the Presentation of Debt Issuance Costs”, or ASU 2015-03. ASU 2015-03 amends the existing guidance to require that debt issuance costs be presented in the balance sheet as a deduction from the carrying amount of the related debt liability instead of as a deferred charge. ASU 2015-03 is effective on a retrospective basis for annual and interim reporting periods beginning after December 15, 2015; earlier adoption is permitted. Additionally, in August 2015, the FASB issued guidance expanding the April 2015 update (ASU No. 2015-15). It states that, given the absence of authoritative guidance within the update, the SEC staff would not object to an entity deferring and presenting debt issuance costs as an asset for revolving lines of credit and subsequently amortizing the deferred debt issuance costs ratably over the term of the arrangement, regardless of whether there are any outstanding borrowings on the line of credit. This guidance is effective for financial statements issued for fiscal years beginning after December 15, 2015, and interim periods within those fiscal years, with early adoption permitted for financial statements that have not been previously issued. Full retrospective application is required. The adoption of this standard did not have a material impact on our consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842)”, or ASU 2016-02. ASU 2016-02 requires an entity to recognize assets and liabilities arising from a lease for both financing and operating leases. ASU 2016-02 will also require new qualitative and quantitative disclosures to help investors and other financial statement users better understand the amount, timing, and uncertainty of cash flows arising from leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, with early adoption permitted. We are currently evaluating ASU 2016-02 and its impact on our consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-09, “Compensation – Stock Compensation (Topic 718)”, or ASU 2016-09. ASU 2016-09 requires an entity to simplify several aspects of the accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 is effective for fiscal years beginning after December 15, 2016, with early adoption permitted. We are currently evaluating ASU 2016-09 and its impact on our consolidated financial statements or disclosures.

In April 2016, the FASB issued ASU 2016-10, “Revenue from Contracts with Customers (Topic 606): Identifying Performance Obligations and Licensing”, or ASU 2016-10. The amendments in this update clarify the following two aspects to Topic 606: identifying performance obligations and the licensing implementation guidance, while retaining the related principles for those areas. The entity first identifies the promised goods or services in the contract and reduces the cost and complexity. An entity evaluates whether promised goods and services are distinct. Topic 606 includes implementation guidance on determining whether an entity’s promise to grant a license provides a customer with either a right to use the entity’s intellectual property (which is satisfied at a point in time) or a right to access the entity’s intellectual property (which is satisfied over time). ASU 2016-10 is effective for fiscal years beginning after December 15, 2017, including interim reporting periods within that reporting period. We are currently evaluating ASU 2016-10 and its impact on our consolidated financial statements or disclosures.

In August 2016, the FASB issued ASU 2016-15, “Statement of Cash Flows (Topic 230) Classification of Certain Cash Receipts and Cash Payments”, or ASU 2016-15. The new standard will make eight targeted changes to how cash receipts and cash payments are presented and classified in the statement of cash flows. The new standard is effective for fiscal years beginning after December 15, 2017. We will require adoption on a retrospective basis unless it is impracticable to apply, in which case we would be required to apply the amendments prospectively as of the earliest date practicable. We are currently evaluating ASU 2016-15 and its impact on our consolidated financial statements or disclosures.

In May 2017, the FASB issued ASU No. 2017-09, “Compensation—Stock Compensation (Topic 718)”, or ASU 2017-09. ASU 2017-09 provides clarity on the accounting for modifications of stock-based awards. ASU 2017-09 requires adoption on a prospective basis in the annual and interim periods for our fiscal year ending December 31, 2019 for share-based payment awards modified on or after the adoption date. We are currently evaluating the effect that adopting this new accounting guidance will have on our consolidated cash flows and related disclosures.

**Off-Balance Sheet Arrangements**

We have no off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

## BUSINESS

### General

We develop therapeutic products and medical therapies using cell and tissue protocols, primarily involving adult (non-embryonic) stem cells. Our two core programs, as described below, relate to the treatment of disc/spine disease and metabolic disorders:

***Disc/Spine Program (brtxDisc).*** Our lead cell therapy candidate, *BRTX-100*, is a product formulated from autologous (or a person's own) cultured mesenchymal stem cells, or MSCs, collected from the patient's bone marrow. We intend that the product will be used for the non-surgical treatment of protruding and bulging lumbar discs in patients suffering from chronic lumbar disc disease. The *BRTX-100* production process involves collecting bone marrow from a patient, isolating and culturing stem cells from the bone marrow and cryopreserving the cells. In an outpatient procedure, *BRTX-100* is to be injected by a physician into the patient's damaged disc. The treatment is intended for patients whose pain has not been alleviated by non-surgical procedures or conservative therapies and who potentially face the prospect of surgery. In January 2017, we submitted an IND application to the FDA to obtain clearance to commence a Phase 2 clinical trial using our lead cell therapy candidate, *BRTX-100*, to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs. In February 2017, we received such clearance from the FDA. We intend to commence such clinical trial during the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding). See "Disc/Spine Program" below.

***Metabolic Program (ThermoStem).*** We are developing a cell-based therapy to target obesity and metabolic disorders using brown adipose (fat) derived stem cells, or BADSC, to generate brown adipose tissue, or BAT. We refer to this as our *ThermoStem Program*. BAT is intended to mimic naturally occurring brown adipose depots that regulate metabolic homeostasis in humans. Initial preclinical research indicates that increased amounts of brown fat in the body may be responsible for additional caloric burning, as well as reduced glucose and lipid levels. Researchers have found that people with higher levels of brown fat may have a reduced risk for obesity and diabetes. In March 2014, we entered into a Research Agreement with Pfizer, Inc., a global pharmaceutical company, pursuant to which we were engaged to provide research and development services with regard to a joint study of the development and validation of a human brown adipose (fat) cell model. A United States patent related to the *ThermoStem Program* issued in September 2015, and an Australian patent related to the *ThermoStem Program* was issued in August 2017. See "Metabolic Brown Adipose (Fat) Program" below.

We have also licensed a curved needle device designed to deliver cells and/or other therapeutic products or material to the spine and discs (and other parts of the body). In August 2015, a United States patent for this device was issued to the licensor, Regenerative Sciences, LLC. See "Curved Needle Device" below.

In addition, we have developed a human cellular extract that has been demonstrated in *in vitro* skin studies to increase the production of collagen and fibronectin, which are proteins that are essential to combating the aging of skin. We also offer plant stem cell-based facial creams and beauty products under the *Stem Pearls* brand. See “Cosmetic Products” below.

## Overview

Every human being has stem cells in his or her body. These cells exist from the early stages of human development until the end of a person’s life. Throughout our lives, our body continues to produce stem cells that regenerate to produce differentiated cells that make up various aspects of the body such as skin, blood, muscle and nerves. These are generally referred to as adult (non-embryonic) stem cells. These cells are important for the purpose of medical therapies aiming to replace lost or damaged cells or tissues or to otherwise treat disorders.

Regenerative cell therapy relies on replacing diseased, damaged or dysfunctional cells with healthy, functioning ones or repairing damaged or diseased tissue. A great range of cells can serve in cell therapy, including cells found in peripheral and umbilical cord blood, bone marrow and adipose (fat) tissue. Physicians have been using adult stem cells from bone marrow to treat various blood cancers for 60 years (the first successful bone marrow transplant was performed in 1956). Recently, physicians have begun to use stem cells to treat various other diseases. We intend to develop cell and tissue products and regenerative therapy protocols, primarily involving adult stem cells, to allow patients to undergo cellular-based treatments.



We intend to concentrate initially on therapeutic areas in which risk to the patient is low, recovery is relatively easy, results can be demonstrated through sufficient clinical data, and patients and physicians will be comfortable with the procedure. We believe that there will be readily identifiable groups of patients who will benefit from these procedures.

Accordingly, we have focused our initial efforts in offering cellular-based therapeutic products and treatment programs in selective areas of medicine for which the treatment protocol is minimally invasive. Such areas include the treatment of the disc and spine and metabolic-related disorders. We will seek to obtain third party reimbursement for our products and procedures; however, patients may be required to pay for our products and procedures out of pocket in full and without the ability to be reimbursed by any governmental and other third party payers.

We have obtained a patent, as well as licenses for the exclusive use of a patent and a patent pending, and have undertaken research and development efforts in connection with the development of therapeutic products and medical therapies using cell and tissue protocols, primarily involving adult stem cells. See “Disc/Spine Program”, “Metabolic Brown Adipose (Fat) Program” and “Curved Needle Device” below.

We have developed a human adult stem cell-derived extract that, when applied to human skin cells, significantly increases the production of collagen and fibronectin, which are proteins that are essential to combating the aging of skin. We also offer plant stem cell derived facial creams and beauty products under the *Stem Pearls* brand. See “Cosmetic Products” below.

We have established a laboratory facility and will seek to further develop cellular-based treatments, products and protocols, stem cell-related intellectual property, or IP, and translational research applications. See “Laboratory” below.

We have not generated any significant revenues from our operations. The implementation of our business plan, as discussed below, will require the receipt of sufficient equity and/or debt financing to purchase necessary equipment, technology and materials, fund our research and development efforts, retire our outstanding debt (see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Availability of Additional Funds”) and otherwise fund our operations. We intend to seek such financing from current shareholders and debtholders as well as from other accredited investors. We also intend to seek to raise capital through investment bankers and from biotech funds, strategic partners and other financial institutions. We anticipate that we will require approximately \$10,000,000 in financing to commence and complete a Phase 2 clinical trial and we will require approximately \$30,000,000 in further additional funding to complete our clinical trials using *BRTX-100*, as further described in this prospectus (assuming the receipt of no revenues from operations), repay our outstanding debt (\$2,654,062 as of June 30, 2017) (assuming that no debt is converted into equity) and fund general operations. We will also require a substantial amount of additional funding to implement our other programs described in this prospectus. No assurance can be given that the anticipated amounts of required funding are correct or that we will be able to accomplish our goals within the timeframes projected. In addition, no assurance can be given that we will be able to obtain any required financing on commercially reasonable terms or otherwise. We may also seek to have our

debtholders convert all or a portion of their debt into equity. No assurance can be given that we will be able to convert such debt into equity on commercially reasonable terms or otherwise. If we are unable to obtain adequate funding, we may be required to significantly curtail or discontinue our proposed operations. See “Risk Factors—Risks Related to Our Business Generally—We will need to obtain additional financing to satisfy debt obligations and continue our operations.”.

## Disc/Spine Program

### *General*

Among the initiatives that we are currently pursuing is our *Disc/Spine Program*, with our initial product being called *BRTX-100*. We have obtained a license (see “License” below) that permits us to use technology for adult stem cell treatment of disc and spine conditions, including protruding and bulging discs. The technology is an advanced stem cell culture and injection procedure into the intervertebral disc, or IVD, that may offer relief from lower back pain, buttock and leg pain, and numbness and tingling in the legs and feet.

Lower back pain is the most common, most disabling, and most costly musculoskeletal ailment faced worldwide. According to a recent market report, there are nearly 25 million people in the United States with chronic lower back pain of which approximately 5 million have pain caused by a protruding or bulging disc. We believe that between 500,000 and 1 million of these back pain sufferers will have an invasive surgical procedure to try to alleviate the pain associated with these lower back conditions. Clinical studies have documented that the source of the pain is most frequently damage to the IVD. This can occur when forces, whether a single load or repetitive microtrauma, exceed the IVD’s inherent capacity to resist those loads. Aging, obesity, smoking, lifestyle, and certain genetic factors may predispose one to an IVD injury.

While once thought to be benign, the natural history of lower back pain is often one of chronic recurrent episodes of pain leading to progressive disability. This is believed to be a direct result of the IVD’s poor healing capacity after injury. The IVD is the largest avascular (having few or no blood vessels) structure in the body and is low in cellularity. Therefore, its inherent capacity to heal after injury is poor. The clinical rationale of *BRTX-100* is to deliver a high concentration of the patient’s own MSCs into the site of pathology to promote healing and relieve pain.

We have developed a mesenchymal stem cell product, *BRTX-100*, derived from autologous (or a person’s own) human bone marrow, cultured and formulated to be delivered into a protruding or bulging disc.

In January 2017, we announced that we had submitted an IND application to the FDA to obtain clearance to commence a Phase 2 clinical trial using our lead cell therapy candidate, *BRTX-100*, to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs. In February 2017, we received such clearance from the FDA. We intend to commence such clinical trial during the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding).

In addition to developing *BRTX-100*, we may also seek to sublicense the technology to third parties for use in connection with cellular-based treatment programs with regard to disc and spine related conditions.

We have established a laboratory, which includes a clean room facility, to perform the production of cell products (including *BRTX-100*) for use in our clinical trials. We intend to certify the operation of the cleanroom by the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding). This capability may also enable us to develop our pipeline of future products and expand our stem cell-related IP. See “Laboratory” and “Technology; Research and Development” below.

### *BRTX-100*

Our lead therapeutic product, *BRTX-100*, is an autologous hypoxic (low oxygen) cultured mesenchymal stem cell product derived from a patient’s bone marrow and formulated with a proprietary carrier. The cryopreserved sterile cellular product will be provided to the clinician in vials for injection into damaged lumbar discs. The therapeutic delivery of *BRTX-100*, in treatment of chronic lumbar disc disease, is performed using a standard 20 gauge 3.5 inch introducer needle and a 25 gauge 6 inch needle that extends into the disc region where the product is delivered. Specific medical practitioners will be provided training using the product with regard to the injection procedure. It is anticipated that the treatment and delivery of the product will be a 30 minute outpatient procedure.

Mesenchymal stem cells used in *BRTX-100* are similar to other MSCs under development by others; however, in order to enhance the survivability of our bone marrow-derived MSCs in the avascular environment of the damaged disc, *BRTX-100* is expanded under hypoxic conditions for a period of approximately three weeks. This process results in a cell population with enhanced viability and therapeutic potential following injection locally into injured spinal discs. Publications and scientific literature have indicated that MSCs preconditioned in hypoxic environment show enhanced skeletal muscle regeneration, improved blood flow and vascular formation compared to MSCs cultured under normoxic (normal oxygen) conditions.

*Production and Delivery*

The production of *BRTX-100* begins with the physician collecting bone marrow from the patient under a local anesthesia. Peripheral blood is also collected from the patient. The physician will then send the patient's bone marrow and blood samples to our laboratory (or a contract laboratory) for culturing and formulation. The hypoxic culturing process applied is intended to result in the selection of a cell population that is suitable for an improved possibility of survival in the internal disc environment. The cell culturing process and product formulation will take approximately three weeks, with an additional two weeks required for quality control testing required to meet product release criteria. We will then send the therapeutic cryopreserved stem cells (*BRTX-100*) in a sterile vial back to the physician's offices where it will be thawed prior to the procedure. The price structure for the procedure and our services has not been determined and no assurances can be given in this regard. The following illustrates the process.

*License*

Pursuant to our license agreement with Regenerative Sciences, LLC, or Regenerative, that became effective in April 2012, we have obtained, among other things, a worldwide (excluding Asia and Argentina), exclusive, royalty-bearing license from Regenerative to utilize or sublicense a certain method for culturing cells for use in treating, among other things, disc and spine conditions, including protruding and bulging discs. The technology that has been licensed is an advanced stem cell culture and injection procedure that may offer relief from lower back pain, buttock and leg pain, and numbness and tingling in the legs and feet. Pursuant to the license agreement, we have also obtained a worldwide, exclusive, royalty-bearing license from Regenerative to utilize or sublicense a certain curved needle device for the administration of specific cells and/or cell products to the disc and/or spine (and other parts of the body). It will be necessary to advance the design of this medical device to facilitate the delivery of substances, including living cells, to specific locations within the body and minimize the potential for damage to nearby structures.

The license agreement provides for the requirement that we achieve certain milestones or pay certain minimum royalty amounts in order to maintain the exclusive nature of the licenses. The license agreement also provides for a royalty-bearing sublicense of certain of the technology to Regenerative for use for certain purposes, including in the United States and the Cayman Islands. Further, the license agreement requires that Regenerative furnish certain training, assistance and consultation services with regard to the licensed technology.

### *Animal Study*

The efficacy and safety of *BRTX-100* has been tested in a degenerative intervertebral rabbit disc model. In this study, 80 rabbits underwent surgery to create a puncture in the discs. Four weeks post surgery, each rabbit had either contrast, a biomaterial carrier or *BRTX-100* injected into the discs. In order to study the biodistribution and efficacy of *BRTX-100*, the rabbits were evaluated at day 56 and day 120.

The key safety findings of the animal study are as follows:

There was no evidence or observation of gross toxicity related to the administration of *BRTX-100* at either time point. The clinical pathology across both groups and time points were within expected normal historical ranges and under the conditions of the test. No abnormalities (including fractures or overt signs of lumbar disc disease) were identified after review of the radiographic images taken at both endpoints for both groups. No toxicity or adverse finding was evident in the systemic tissues or the discs of animals receiving *BRTX-100*.

There was no detectable presence of human cells (*BRTX-100*) observed at the day 56 interim time point. This is consistent with the proposed mechanism of action that *BRTX-100* acts through a paracrine effect of secreted growth and immunomodulation factors.

The key efficacy findings of the animal study are as follows:

*BRTX-100* showed a statistically significant DHI (disc height increase) over the control group at day 120.

*BRTX-100* showed a statistically significant improvement in disc histology over the control group at day 120 as graded by a validated histology scale. *BRTX-100* showed a significant improvement in the cellularity and matrix of the disc when compared to the control at day 120.

### *Clinical Trial*

In December 2014, we held a pre-IND meeting with the FDA's Office of Cellular Tissue and Gene Therapies within the FDA's Center for Biologics, Evaluation and Research. At the meeting, representatives of the FDA commented on our plans for an IND submission and a clinical trial with regard to the disc program. The FDA representatives identified certain necessary pre-clinical research and data as well as various suggestions to modify the clinical trial design. We believe that these comments and suggestions will not materially impact our plans for a clinical trial. In January 2017, we announced that we had submitted an IND application to the FDA to obtain clearance to commence a Phase 2 clinical trial using our lead cell therapy candidate, *BRTX-100*, to treat chronic lower back pain due to degenerative disc disease related to protruding/bulging discs. In February 2017, we received such clearance from the FDA. We intend to commence such clinical trial during the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding). One of the principal investigators for our clinical trial is intended to be Dr. Gregory E. Lutz, our Chief Medical Advisor for Spine Medicine. See "Management—Chief Medical Advisor for Spine Medicine".

The following describes the Phase 2 clinical trial cleared by the FDA:

A Phase 2 Prospective, Double-Blinded, Placebo Controlled, Randomized Study

#### General

72 patients; randomized 2:1, *BRTX-100* to control

10-20 clinical trial sites

Primary efficacy endpoint at 6 months

Patient follow up at 12 and 24 months

#### Primary Efficacy Endpoint

Responder endpoint - % of patients that meet the improvement in function and reduction in pain threshold

Improvement in function defined as at least a 30% increase in function based on the Oswestry questionnaires (ODI)

Reduction of pain defined as at least a 30% decrease in pain as measured using the Visual Analogue Scale (VAS)

#### Additional or Secondary Endpoints

Quality of life assessment

Evolution of affected disc(s) by magnetic resonance imaging (MRI)

The FDA approval process can be lengthy, expensive and uncertain and there is no guarantee that the clinical trial(s) will be commenced or completed or that the product will ultimately receive approval or clearance. See “Government Regulation” below and “Risk Factors—Risks Related to Our Cell Therapy Product Development Efforts; and —Risks Related to Government Regulation”.

#### **Metabolic Brown Adipose (Fat) Program**



Since June 2011, we have been engaging in pre-clinical research efforts with respect to a platform technology utilizing brown adipose (fat) derived stem cells for therapeutic purposes. We have labeled this initiative our *ThermoStem Program*.

Brown fat is a specialized adipose (fat) tissue found in the human body that plays a key role in the evolutionarily conserved mechanisms underlying thermogenesis (generation of non-shivering body heat) and energy homeostasis in mammals - long known to be present at high levels in hibernating mammals and human newborns. Recent studies have demonstrated that brown fat is present in the adult human body and may be correlated with the maintenance and regulation of healthy metabolism, thus potentially being involved in caloric regulation. The pre-clinical *ThermoStem Program* involves the use of a cell-based (brown adipose tissue) treatment for metabolic disease, such as type 2 diabetes, obesity, hypertension and other metabolic disorders and cardiac deficiencies. We have had initial success in transplanting the tissue in animals, and we are currently exploring ways to deliver the brown fat tissue into humans. Even though present, BAT mass is very low in healthy adults and even lower in obese populations. Therefore, it may not be sufficient to either naturally impact whole body metabolism, or to be targeted by drugs intended to increase its activity in the majority of the population. Increasing BAT mass is crucial in order to benefit from its metabolic activity and this is what our *ThermoStem Program* seeks to accomplish. We may also identify other naturally occurring and chemically engineered molecules that may enhance brown adipose tissue performance.

Obesity, the abnormal accumulation of white fat tissue, leads to a number of metabolic disorders and is the driving force behind the rise of type 2 diabetes and cardiovascular diseases worldwide. Pharmacological efforts to alter metabolic homeostasis through modulating central control of appetite and satiety have had limited market penetration due to significant psychological and physiological safety concerns directly attributed to modulating these brain centers. Adipose tissue is one of the largest organs in the human body and plays a key role in central energy balance and lipid homeostasis. Two types of adipose tissues are found in mammals, white and brown adipose tissues. White adipose tissue function is to store energy, whereas BAT specializes in energy expenditure. Recent advancements in unraveling the mechanisms that control the induction, differentiation, proliferation, and thermogenic activity of BAT, along with the application of imaging technologies for human BAT visualization, have generated optimism that these advances may provide novel strategies for targeting BAT activation/thermogenesis, leading to efficacious and safe obesity targeted therapies.

We are developing a cell-based therapy to target obesity and metabolic disorders using BADSC. Our goal is to develop a bioengineered implantable brown adipose tissue intended to mimic ones naturally occurring in the human body. We have isolated and characterized a human multipotent stem cell population that resides within BAT depots. We have expanded these stem cells to clinically relevant numbers and successfully differentiated them into functional brown adipocytes. We intend to use adult stem cells that may be differentiated into progenitor or fully differentiated brown adipocytes, or a related cell type, which can be used therapeutically in patients. We are focusing on the development of treatment protocols that utilize allogeneic cells (i.e., stem cells from a genetically similar but not identical donor).

In order to deliver these differentiated cells into target locations *in vivo*, we seeded BADSC onto 3-dimensional biological scaffolds. Pre-clinical animal models of diet-induced obesity, that were transplanted with differentiated BADSC supported by a biological scaffold, presented significant reductions in weight and blood glucose levels compared to saline injected controls. We are identifying technology for *in vivo* delivery in small animal models. Having completed our proof of concept using our BAT in small animals, we are currently developing our next generation BAT. It is anticipated that this next version will contain a higher purity of BADSC, which is expected to increase the therapeutic effect compared to our first generation product. In addition, we are exploring the delivery of the therapeutic using encapsulation technology, which will only allow for reciprocal exchange of small molecules between the host circulation and the BAT implant. We expect that encapsulation may present several advantages over our current biological scaffolds, including prevention of any immune response or implant rejection that might occur in an immunocompetent host and an increase in safety by preventing the implanted cells from invading the host tissues and forming tumors. We have developed promising data on the transplantation of human stem cell-derived tissue engineered brown fat into an encapsulation device to be used as a cell delivery system for our metabolic platform program for the treatment of type 2 diabetes, obesity, hyperlipidemia and hypertension. This advancement may lead to successful transplantation of brown fat in humans. By successfully seeding human BADSC into an encapsulation device, we are advancing the development of our cell therapy program to treat metabolic disorders. This data is expected to progress our program to enable transplanted brown adipose cells to effectively maintain or regulate normal metabolism in humans. We are evaluating the next generation of BAT constructs that will first be tested in small animal models. No assurance can be given that this delivery system will be effective *in vivo* in animals or humans. Our allogeneic brown adipose derived stem cell platform potentially provides a therapeutic and commercial model for the cell-based treatment of obesity and related metabolic disorders.

In June 2012, we entered into an Assignment Agreement with the University of Utah Research Foundation, or the Foundation, and a Research Agreement with the University of Utah, or the Utah Research Agreement. Pursuant to the Assignment Agreement, which provides for royalty payments, we acquired the rights to two provisional patent applications that relate to human brown fat cell lines. No royalty amounts are payable to date. The applications have been converted to a utility application in the United States and several foreign jurisdictions. Pursuant to the Utah Research Agreement, the University of Utah, or the University, provided research services relating to the identification of brown fat tissue and the development and characterization of brown fat cell lines. The Utah Research Agreement provides that all inventions, discoveries, patent rights, information, data, methods and techniques, including all cell lines, cell culture media and derivatives thereof, are owned by us.

In February 2014, our research with regard to the identification of a population of brown adipose derived stem cells was published in *Stem Cells*, a respected stem cell journal.

In March 2014, we entered into a Research Agreement with Pfizer Inc, a global pharmaceutical company. Pursuant to the Pfizer Research Agreement, we were engaged to provide research and development services with regard to a joint study of the development and validation of a human brown adipose (fat) cell model. The Pfizer Research Agreement provided for an initial payment to us of \$250,000 and the payment of up to an additional \$525,000 during the two-year term of the Agreement, all of which has been received.

In August 2015, we entered into a one year research collaboration agreement with the University of Pennsylvania with regard to the understanding of brown adipose (fat) biology and its role in metabolic disorders. No amounts are payable by or to us pursuant to this agreement.

In September 2015, a United States patent related to the *ThermoStem Program* was issued to us.

In August 2017, an Australian patent related to the *ThermoStem Program* was issued to us.

Following our research activities, we intend to undertake preclinical animal studies in order to determine whether our proposed treatment protocol is safe. Such studies are planned to begin by the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding). Following the completion of such studies, if required, we intend to file an IND with the FDA and initiate a clinical trial. See “Government Regulation” below and “Risk Factors—Risks Related to Our Cell Therapy Product Development Efforts; and —Risks Related to Government Regulation”. The FDA approval process can be lengthy, expensive and uncertain and there is no guarantee of ultimate approval or clearance.

We anticipate that much of our development work in this area will take place at our laboratory facility, outside core facilities at academic, research or medical institutions, or contractors. See “Laboratory” below.

### **Curved Needle Device**

Pursuant to the Regenerative license agreement discussed under “Disc/Spine Program-License” above, we have licensed and further developed a curved needle device, or CND, that is a needle system with a curved inner cannula to allow access to difficult-to-locate regions for the delivery or removal of fluids and other substances. The CND is intended to deliver stem cells and/or other therapeutic products or material to the interior of a human intervertebral disc, the spine region, or potentially other areas of the body. The device relies on the use of pre-curved nested cannulae that allow the cells or material to be deposited in the posterior and lateral aspects of the disc to which direct access is not possible due to outlying structures such as vertebra, spinal cord and spinal nerves. We anticipate that the use of the CND will

facilitate the delivery of substances, including living cells, to specific locations within the body and minimize the potential for damage to nearby structures. The device may also have more general use applications. In August 2015, a United States patent for the CND was issued to the licensor, Regenerative Sciences, LLC. We anticipate that FDA approval or clearance will be necessary for the CND prior to commercialization. See “Government Regulation” below and “Risk Factors—Risks Related to Our Cell Therapy Product Development Efforts; and —Risks Related to Government Regulation”. The FDA review and approval process can be lengthy, expensive and uncertain and there is no guarantee of ultimate approval or clearance.

## **Laboratory**

We have established a laboratory in Melville, New York for research purposes and have built a cleanroom within the laboratory for the possible production of cell-based therapies, such as *BRTX-100*, for use in a clinical trial. We intend to certify the operation of the cleanroom by the second quarter of 2018 (assuming the receipt of sufficient proceeds from this offering or the receipt of other necessary funding).

As operations grow, our plans include the expansion of our laboratory to perform cellular characterization and culturing, product, protocol and stem cell-related IP development, translational research and therapeutic outcome analysis. As we develop our business and additional stem cell treatments are approved, we will seek to establish ourselves as a key provider of adult stem cells for therapies and expand to provide cells in other market areas for stem cell therapy. We may also use outside laboratories specializing in cell therapy services and manufacturing of cell products.

## Technology; Research and Development

We intend to utilize our laboratory or a third party laboratory in connection with cellular research activities. We also intend to seek to obtain cellular-based therapeutic technology licenses and increase our IP portfolio. We intend to seek to develop potential stem cell delivery systems or devices. The goal of these specialized delivery systems or devices is to deliver cells into specific areas of the body, control the rate, amount and types of cells used in a treatment, and populate these areas of the body with sufficient stem cells so that there is a successful therapeutic result.

We also intend to perform research to develop certain stem cell optimization compounds, media or “recipes” to enhance cellular growth and regeneration for the purpose of improving pre-treatment and post-treatment outcomes.

We have two pending United States patent applications with regard to two patent families. We have been issued a United States patent with regard to one of the two patent families. Patent applications with regard to one patent family have been filed in five foreign jurisdictions (of which one application has become inactive). In addition, a Patent Cooperation Treaty, or PCT, application has been filed with regard to a second patent family and such PCT application has been filed in four foreign jurisdictions. Regenerative has filed two patent applications with regard to the technology that is the subject of the license agreement between us (see “Disc/Spine Program-License” above). Regenerative has been issued a patent with regard to its curved needle therapeutic delivery device. Our patent applications and those of Regenerative are currently in prosecution (i.e., we and Regenerative are seeking issued patents). A description of the patent applications and issued patents is set forth below:

Program	I.D.	Jurisdiction	Title
<i>Disc/Spine</i>	13/132,840*	US	Methods and compositions to facilitate repair of avascular tissue
	U.S. Patent No. 9,113,950 B2**	US	Therapeutic delivery device
<i>Metabolic</i>	U.S. Patent No. 9,133,438	US	Brown fat cell compositions and methods
	13/932,468	US	
	AU Patent No. 2012275335	Australia	
	12743811.7	Europe	
	230237	Israel	
	2014-519026	Japan	
	14/255,595	US	Human brown adipose derived stem cells and uses
	PCT/US2014/034540	Patent Cooperation Treaty	
	2014253920	Australia	
	14729769.1	Europe	
	242150	Israel	

2016-509105

Japan

\*Patent application filed by licensor, Regenerative Sciences, LLC

\*\*Patent issued to licensor, Regenerative Sciences, LLC

In March 2014, we entered into a Research and Development Agreement with Rohto Pharmaceutical Co., Ltd., a Japanese pharmaceutical company. Pursuant to the Rohto Research and Development Agreement, we were engaged to provide research and development services with regard to stem cells. The Rohto Research and Development Agreement provided for an initial payment to us of \$150,000 and the payment of up to an additional \$100,000 subject to the satisfaction of certain milestones (all of which has been earned and received). The Rohto Research and Development Agreement expired in June 2015.

In March 2014, we entered into a Research Agreement with Pfizer, as discussed above under “Metabolic Brown Adipose (Fat) Program”.

We have secured registrations in the U.S. Patent and Trademark Office for the following trademarks:

THERMOSTEM  
STEM CELLUTRITION  
STEM PEARLS  
STEM THE TIDES OF TIME.

We own an allowed application in the U.S. Patent and Trademark Office for the trademark BRTX-100.

We also have federal common law rights in the trademark BioRestorative Therapies and other trademarks and trade names used in the conduct of our business that are not registered.

Our success will depend in large part on our ability to develop and protect our proprietary technology. We intend to rely on a combination of patent, trade secret and know-how, copyright and trademark laws, as well as confidentiality agreements, licensing agreements, non-compete agreements and other agreements, to establish and protect our proprietary rights. Our success will also depend upon our ability to avoid infringing upon the proprietary rights of others, for if we are judicially determined to have infringed such rights, we may be required to pay damages, alter our services, products or processes, obtain licenses or cease certain activities. We conduct prior rights searches before launching any new product or service to put us in the best position to avoid claims of infringement.

During the years ended December 31, 2016 and 2015, we incurred \$2,883,563 and \$2,105,059, respectively, in research and development expenses.

### **Cosmetic Products**

We have developed a human adult stem cell-derived extract that, when applied to human skin cells, significantly increases the production of collagen and fibronectin, which are proteins that are essential to combating the aging of



skin. No arrangements with regard to the commercial distribution of products that utilize our extract as a cosmetic ingredient are currently in place or are under consideration.

We offer plant derived stem cell cosmetic products under the *Stem Pearls* brand. We have not commenced marketing efforts or generated any significant revenue with regard to *Stem Pearls* products.

### **Scientific Advisors**

We have established a Scientific Advisory Board whose purpose is to provide advice and guidance in connection with scientific matters relating to our business. Our four Scientific Advisory Board members are Dr. Wayne Marasco, Chairman, Dr. Naiyer Imam, Dr. Wayne Olan and Dr. Joy Cavagnaro. In addition, Dr. Gregory Lutz has been retained as our Chief Medical Advisor for Spine Medicine. See “Management—Scientific Advisors; and —Chief Medical Advisor for Spine Medicine” for a listing of the principal positions for Drs. Marasco, Imam, Olan, Cavagnaro and Lutz.

## Competition

We will compete with many pharmaceutical, biotechnology, and medical device companies, as well as other private and public stem cell companies involved in the development and commercialization of cell-based medical technologies and therapies.

Regenerative medicine is rapidly progressing, in large part through the development of cell-based therapies or devices designed to isolate cells from human tissues. Most efforts involve cell sources, such as bone marrow, adipose tissue, embryonic and fetal tissue, umbilical cord and peripheral blood and skeletal muscle.

Companies working in the area of regenerative medicine with regard to the disc and spine include, among others, Isto Biologics, Harvest Technologies (acquired by Terumo), Celling Biosciences, Mesoblast, Tissue Genesis, Discgenics and Arthrex. Companies that are developing products and therapies to combat obesity, diabetes and other metabolic disorders, including through the use of brown fat, include, among others, Pfizer, AstraZeneca, Genentech (acquired by Roche), Eli Lilly, Amgen, Energesis Pharmaceuticals, Sanofi, Novo Nordisk, Johnson & Johnson, Novartis, GlaxoSmithKline, Bristol-Myers Squibb, Mitsubishi Tanabe Pharma, Takeda Pharmaceutical, Vivus, Arena Pharmaceuticals, Teva Pharmaceuticals, Merck, Blu Pharmaceuticals (acquired by PuraCap Pharmaceutical), BioTime, Merz Pharmaceuticals, ViaCyte and Regeneron. Many of our competitors and potential competitors have substantially greater financial, technological, research and development, marketing and personnel resources than we do. We cannot, with any accuracy, forecast when or if these companies are likely to bring their products and therapies to market in competition with those that we are pursuing.

With the enactment of the Biologics Price Competition and Innovation Act of 2009, or BPCIA, an abbreviated pathway for the approval of biosimilar and interchangeable biological products was created. The abbreviated regulatory pathway establishes legal authority for the FDA to review and approve biosimilar biologics, including the possible designation of a biosimilar as “interchangeable” based on its similarity to an existing reference product. Under the BPCIA, an application for a biosimilar product cannot be approved by the FDA until 12 years after the original branded product is approved under a biologics license application, or BLA. Although the FDA has approved several biosimilar products, complex provisions of the law are still being implemented by the FDA and interpreted by the federal courts. As a result, the ultimate impact, implementation, and meaning of the BPCIA are still subject to some uncertainty and FDA actions and court decisions concerning the law could have a material adverse effect on the future commercial prospects for our biological products.

We believe that, if any of our product candidates are approved as a biological product under a BLA, it should qualify for the 12-year period of exclusivity. However, there is a risk that the FDA could permit biosimilar applicants to reference approved biologics other than our therapeutic candidates, thus circumventing our exclusivity and potentially creating the opportunity for competition sooner than anticipated. Additionally, this period of regulatory exclusivity does not apply to companies pursuing regulatory approval via their own traditional BLA, rather than via the

abbreviated pathway. Moreover, the extent to which a biosimilar, once approved, will be substituted for any one of our reference products in a way that is similar to traditional generic substitution for non-biological products is not yet clear, and will depend on a number of marketplace and regulatory factors that are still developing.

## **Customers**

Our cell and tissue therapeutic products are intended to be marketed to physicians, other health care professionals, hospitals, research institutions, pharmaceutical companies and the military. It is anticipated that physicians who are trained and skilled in performing spinal injections will be the physicians most likely to treat discs with injections of *BRTX-100*. These physicians would include interventional physiatrists (physical medicine physicians), pain management anesthesiologists, interventional radiologists and neurosurgeons.

## **Governmental Regulation**

### ***U.S. Government Regulation***

The health care industry is highly regulated in the United States. The federal government, through various departments and agencies, state and local governments, and private third-party accreditation organizations regulate and monitor the health care industry, associated products, and operations. The following is a general overview of the laws and regulations pertaining to our business.

#### *FDA Regulation of Stem Cell Treatment and Products*

The FDA regulates the manufacture of human stem cell treatments and associated products under the authority of the Public Health Service Act, or PHSA, and the Federal Food, Drug, and Cosmetic Act, or FDCA. Stem cells can be regulated under the FDA's Human Cells, Tissues, and Cellular and Tissue-Based Products Regulations, or HCT/Ps, or may also be subject to the FDA's drug, biological product, or medical device regulations, each as discussed below.

#### *Human Cells, Tissues, and Cellular and Tissue-Based Products Regulation*

Under Section 361 of the PHSA, the FDA issued specific regulations governing the use of HCT/Ps in humans. Pursuant to Part 1271 of Title 21 of the Code of Federal Regulations, or CFR, the FDA established a unified registration and listing system for establishments that manufacture and process HCT/Ps. The regulations also include provisions pertaining to donor eligibility determinations; current good tissue practices covering all stages of production, including harvesting, processing, manufacture, storage, labeling, packaging, and distribution; and other procedures to prevent the introduction, transmission, and spread of communicable diseases.

The HCT/P regulations strictly constrain the types of products that may be regulated solely under these regulations. Factors considered include the degree of manipulation, whether the product is intended for a homologous function, whether the product has been combined with noncellular or non-tissue components, and the product's effect or dependence on the body's metabolic function. In those instances where cells, tissues, and cellular and tissue-based products have been only minimally manipulated, are intended strictly for homologous use, have not been combined with noncellular or nontissue substances, and do not depend on or have any effect on the body's metabolism, the manufacturer is only required to register with the FDA, submit a list of manufactured products, and adopt and implement procedures for the control of communicable diseases. If one or more of the above factors has been exceeded, the product would be regulated as a drug, biological product, or medical device rather than an HCT/P.

Because we are an enterprise in the early stages of operations and have not generated significant revenues from operations, it is difficult to anticipate the likely regulatory status of the array of products and services that we may offer. We believe that some of the adult autologous (self-derived) stem cells that will be used in our cellular therapy products and services, including the brown adipose (fat) tissue that we intend to use in our *ThermoStem Program*, may be regulated by the FDA as HCT/Ps under 21 C.F.R. Part 1271. This regulation defines HCT/Ps as articles “containing or consisting of human cells or tissues that are intended for implantation, transplantation, infusion or transfer into a human recipient.” However, the FDA may disagree with this position or conclude that some or all of our stem cell therapy products or services do not meet the applicable definitions and exemptions to the regulation. If we are not regulated solely under the HCT/P provisions, we would need to expend significant resources to comply with the FDA’s broad regulatory authority under the FDCA. Third party litigation concerning the autologous use of a stem cell mixture to treat musculoskeletal and spinal injuries has increased the likelihood that some of our products and services are likely to be regulated as a drug or biological product and require FDA approval. In the litigation, the FDA asserted that the defendants’ use of cultured stem cells without FDA approval is in violation of the FDCA, claiming that the defendants’ product is a drug. The defendants asserted that their procedure is part of the practice of medicine and therefore beyond the FDA’s regulatory authority. The District Court ruled in favor of the FDA, and in February 2014 the Circuit Court affirmed the District Court’s holding.

If regulated solely under the FDA's HCT/P statutory and regulatory provisions, once our laboratory in the United States becomes operational, it will need to satisfy the following requirements, among others, to process and store stem cells:

registration and listing of HCT/Ps with the FDA;

donor eligibility determinations, including donor screening and donor testing requirements;

current good tissue practices, specifically including requirements for the facilities, environmental controls, equipment, supplies and reagents, recovery of HCT/Ps from the patient, processing, storage, labeling and document controls, and distribution and shipment of the HCT/Ps to the laboratory, storage, or other facility;

tracking and traceability of HCT/Ps and equipment, supplies, and reagents used in the manufacture of HCT/Ps;

adverse event reporting;

FDA inspection; and

abiding by any FDA order of retention, recall, destruction, and cessation of manufacturing of HCT/Ps.

Non-reproductive HCT/Ps and non-peripheral blood stem/progenitor cells that are offered for import into the United States and regulated solely under Section 361 of the PHSA must also satisfy the requirements under 21 C.F.R. § 1271.420. Section 1271.420 requires that the importer of record of HCT/Ps notify the FDA prior to, or at the time of, importation and provide sufficient information for the FDA to make an admissibility decision. In addition, the importer must hold the HCT/P intact and under conditions necessary to prevent transmission of communicable disease until an admissibility decision is made by the FDA.

If the FDA determines that we have failed to comply with applicable regulatory requirements, it can impose a variety of enforcement actions including public warning letters, fines, consent decrees, orders of retention, recall or destruction of product, orders to cease manufacturing, and criminal prosecution. If any of these events were to occur, it could materially adversely affect us.

To the extent that our cellular therapy activities are limited to developing products and services outside the United States, as described in detail below, the products and services would not be subject to FDA regulation, but will be subject to the applicable requirements of the foreign jurisdiction. We intend to comply with all applicable foreign governmental requirements.

#### *Drug and Biological Product Regulation*

An HCT/P product that does not meet the criteria for being solely regulated under Section 361 of the PHSA will be regulated as a drug, device or biological product under the FDCA and/or Section 351 of the PHSA, and applicable FDA regulations. The FDA has broad regulatory authority over drugs and biologics marketed for sale in the United States. The FDA regulates the research, clinical testing, manufacturing, safety, effectiveness, labeling, storage, recordkeeping, promotion, distribution, and production of drugs and biological products. The FDA also regulates the export of drugs and biological products manufactured in the United States to international markets.

For products that are regulated as drugs, an investigational new drug, or IND, application and an approved new drug application, or NDA, are required before marketing and sale in the United States pursuant to the requirements of 21 C.F.R. Parts 312 and 314, respectively. An IND application notifies the FDA of prospective clinical testing and allows the test product to be shipped in interstate commerce. Approval of an NDA requires a showing that the drug is safe and effective for its intended use and that the methods, facilities, and controls used for the manufacturing, processing, and packaging of the drug are adequate to preserve its identity, strength, quality, and purity. If regulated as a biologic, the product must be subject to an IND to conduct clinical trials and a manufacturer must obtain an approved biologics license application, or BLA, before introducing a product into interstate commerce. To obtain a BLA, a manufacturer must show that the proposed product is safe, pure, and potent and that the facility in which the product is manufactured, processed, packed, or held meets established quality control standards.

Drug and biological products must also comply with applicable registration, product listing, and adverse event reporting requirements as well as the FDA's general prohibition against misbranding and adulteration. Additionally, the FDA actively enforces regulations prohibiting marketing and promotion of drugs and biologics for indications or uses that have not been approved by the FDA (i.e., "off label" promotion).

In the event that the FDA does not regulate our services in the United States solely under the HCT/P regulation, our products and activities could be regulated as drug or biological products under the FDCA. If regulated as drug or biological products, we will need to expend significant resources to ensure regulatory compliance. If an IND and NDA or BLA are required for any of our products, there is no assurance as to whether or when we will receive FDA approval of the product. The process of designing, conducting, compiling and submitting the non-clinical and clinical studies required for NDA or BLA approval is time-consuming, expensive and unpredictable. The process can take many years, depending on the product and the FDA's requirements.

If the FDA determines that we have failed to comply with applicable regulatory requirements, it can impose a variety of enforcement actions from public warning letters, fines, injunctions, consent decrees and civil penalties to suspension or delayed issuance of approvals, seizure of our products, total or partial shutdown of our production, withdrawal of approvals, and criminal prosecutions. If any of these events were to occur, it could materially adversely affect us.

#### *Medical Device Regulation*

The FDA also has broad authority over the regulation of medical devices marketed for sale in the United States. The FDA regulates the research, clinical testing, manufacturing, safety, labeling, storage, recordkeeping, premarket clearance or approval, promotion, distribution, and production of medical devices. The FDA also regulates the export of medical devices manufactured in the United States to international markets.

Under the FDCA, medical devices are classified into one of three classes- Class I, Class II, or Class III, depending upon the degree of risk associated with the medical device and the extent of control needed to ensure safety and effectiveness. Class I devices are subject to the lowest degree of regulatory scrutiny because they are considered low risk devices and need only comply with the FDA's General Controls. The General Controls include compliance with the registration, listing, adverse event reporting requirements, and applicable portions of the Quality System Regulation as well as the general misbranding and adulteration prohibitions.

Class II devices are subject to the General Controls as well as certain Special Controls such as 510(k) premarket notification. Class III devices are subject to the highest degree of regulatory scrutiny and typically include life supporting and life sustaining devices and implants. They are subject to the General Controls and Special Controls



that include a premarket approval application, or PMA. “New” devices are automatically regulated as Class III devices unless they are shown to be low risk, in which case they may be subject to de novo review to be moved to Class I or Class II. Clinical research of an investigational device is regulated under the investigational device exemption, or IDE, regulations of 21 C.F.R. Part 812. Nonsignificant risk devices are subject to abbreviated requirements that do not require a submission to the FDA but must have Institutional Review Board (IRB) approval and comply with other requirements pertaining to informed consent, labeling, recordkeeping, reporting, and monitoring. Significant risk devices require the submission of an IDE application to the FDA and the FDA’s approval of the IDE application.

The FDA premarket clearance and approval process can be lengthy, expensive and uncertain. It generally takes three to twelve months from submission to obtain 510(k) premarket clearance, although it may take longer. Approval of a PMA could take one to four years, or more, from the time the application is submitted and there is no guarantee of ultimate clearance or approval. Securing FDA clearances and approvals may require the submission of extensive clinical data and supporting information to the FDA. Additionally, the FDA actively enforces regulations prohibiting marketing and promotion of devices for indications or uses that have not been cleared or approved by the FDA. In addition, modifications or enhancements of products that could affect the safety or effectiveness or effect a major change in the intended use of a device that was either cleared through the 510(k) process or approved through the PMA process may require further FDA review through new 510(k) or PMA submissions.

In the event we develop processes, products or services which qualify as medical devices subject to FDA regulation, we intend to comply with such regulations. If the FDA determines that our products are regulated as medical devices and we have failed to comply with applicable regulatory requirements, it can impose a variety of enforcement actions from public warning letters, application integrity proceedings, fines, injunctions, consent decrees and civil penalties to suspension or delayed issuance of approvals, seizure of our products, total or partial shutdown of our production, withdrawal of approvals, and criminal prosecutions. If any of these events were to occur, it could materially adversely affect us.

#### *Current Good Manufacturing Practices and other FDA Regulations of Cellular Therapy Products*

Products that fall outside of the HCT/P regulations and are regulated as drugs, biological products, or devices must comply with applicable good manufacturing practice regulations. The current Good Manufacturing Practices, or cGMPs, regulations for drug products are found in 21 C.F.R. Parts 210 and 211; the General Biological Product Standards for biological products are found in 21 C.F.R. Part 610; and the Quality System Regulation for medical devices are found in 21 C.F.R. Part 820. These cGMPs and quality standards are designed to ensure the products that are processed at a facility meet the FDA's applicable requirements for identity, strength, quality, sterility, purity, and safety. In the event that our domestic United States operations are subject to the FDA's drug, biological product, or device regulations, we intend to comply with the applicable cGMPs and quality regulations.

If the FDA determines that we have failed to comply with applicable regulatory requirements, it can impose a variety of enforcement actions from public warning letters, fines, injunctions, consent decrees and civil penalties to suspension or delayed issuance of approvals, seizure of our products, total or partial shutdown of our production, withdrawal of approvals, and criminal prosecutions. If any of these events were to occur, it could materially adversely affect us.

#### *Good Laboratory Practices*

The FDA prescribes good laboratory practices, or GLPs, for conducting nonclinical laboratory studies that support applications for research or marketing permits for products regulated by the FDA. These regulations are published in Part 58 of Title 21 of the CFR. GLPs are intended to assure the quality and integrity of the safety data filed in research and marketing permits. GLPs provide requirements for organization, personnel, facilities, equipment, testing facilities operation, test and control articles, protocol for nonclinical laboratory study, records, reports, and disqualification by the FDA. To the extent that we are required to, or the above regulation applies, we intend that our nonclinical studies that are intended to support FDA submissions will comply with GLPs.

#### *Promotion of Foreign-Based Cellular Therapy Treatment—"Medical Tourism"*

We may establish, or license technology to third parties in connection with their establishment of, adult stem cell therapy facilities outside the United States. We also intend to work with hospitals and physicians to make the stem cell-based therapies available for patients who travel outside the United States for treatment. “Medical tourism” is defined as the practice of traveling across international borders to obtain health care.

The FTC has the authority to regulate and police advertising of medical treatments, procedures, and regimens in the United States under the Federal Trade Commission Act, or the FTCA. Under Sections 5(a) and 12 of the FTCA (15 U.S.C. §§45(a) and 52), the FTC has regulatory authority to prevent unfair and deceptive practices and false advertising. Specifically, the FTC requires advertisers and promoters to have a reasonable basis to substantiate and support claims. The FTC has many enforcement powers, one of which is the power to order disgorgement by promoters deemed in violation of the FTCA of any profits made from the promoted business and can order injunctions from further violative promotion. Advertising that we may utilize in connection with our medical tourism operations will be subject to FTC regulatory authority, and we intend to comply with such regulatory régime. Similar laws and requirements are likely to exist in other countries and we intend to comply with such requirements.

### ***Federal Regulation of Clinical Laboratories***

Congress passed the Clinical Laboratory Improvement Amendments, or CLIA, in 1988, which provided the CMS authority over all laboratory testing, except research, that is performed on humans in the United States. The Division of Laboratory Services, within the Survey and Certification Group, under the Center for Medicaid and State Operations, or CMSO, has the responsibility for implementing the CLIA program.

The CLIA program is designed to establish quality laboratory testing by ensuring the accuracy, reliability, and timeliness of patient test results. Under CLIA, a laboratory is a facility that does laboratory testing on specimens derived from humans and used to provide information for the diagnosis, prevention, treatment of disease, or impairment of, or assessment of health. Laboratories that handle stem cells and other biologic matter are, therefore, included under the CLIA program. Under the CLIA program, laboratories must be certified by the government, satisfy governmental quality and personnel standards, undergo proficiency testing, be subject to inspections, and pay fees. The failure to comply with CLIA standards could result in suspension, revocation, or limitation of a laboratory's CLIA certificate. In addition, fines or criminal penalties could also be levied. To the extent that our business activities require CLIA certification, we intend to obtain and maintain such certification.

### ***Health Insurance Portability and Accountability Act—Protection of Patient Health Information***

The Health Insurance Portability and Accountability Act of 1996, or HIPAA, included the *Administrative Simplification* provisions that required the Secretary of the Department of Health and Human Services, or HHS, to adopt regulations for the electronic exchange, privacy, and security of individually identifiable health information that HIPAA protects (called “protected health information”). HHS published the *Standards for Privacy of Individually Identifiable Health Information*, or the Privacy Rule, and the *Security Standards for the Protection of Electronic Protected Health Information*, or the Security Rule, to protect the privacy and security of protected health information. The Privacy Rule specifies the required, permitted and prohibited uses and disclosures of an individual's protected health information by health plans, health care clearinghouses, and any health care provider that transmits health information in electronic format (referred to as “covered entities”). The Security Rule establishes a national security standard for safeguarding protected health information that is held or transferred in electronic form (referred to as “electronic protected health information”). The Security Rule addresses the technical and non-technical safeguards that covered entities must implement to secure individuals' electronic protected health information.

In addition to covered entities, the Health Information Technology for Economic and Clinical Health Act, or the HITECH Act, made certain provisions of the Security Rule, as well as the additional requirements the HITECH Act imposed that relate to security or privacy and that are imposed on covered entities, directly applicable as a matter of law to individuals and entities that perform permitted functions on behalf of covered entities when those functions involve the use or disclosure of protected health information. These individuals and entities are called “business associates.” Covered entities are required to enter into a contract with business associates, called a “business associate

agreement,” that also imposes many of the Privacy Rule requirements on business associates as a matter of contract.

Regulations implementing the majority of the requirements created by the HITECH Act were issued in January 2013 (we refer to these regulations as the Final Rule). Among other things, the Final Rule broadened the definition of “business associate” to include subcontractors. As a result, a subcontractor who performs tasks involving the use or disclosure of protected health information on behalf of a business associate must likewise comply with the same obligations as the business associate.

The HITECH Act also established notification requirements in the event that a breach of the protected health information occurs at a covered entity or business associate. These notification obligations mandate that each affected individual whose protected health information was impermissibly accessed receive written notification mailed to his residence of record and that the Secretary of HHS and potentially the media also be notified. HHS, through its Office for Civil Rights, investigates breach reports and determines whether administrative or technical modifications are required and whether civil or criminal sanctions should be imposed. Companies failing to comply with HIPAA and the implementing regulations may also be subject to civil money penalties or in the case of knowing violations, potential criminal penalties, including monetary fines, imprisonment, or both. In some cases, the State Attorneys General may seek enforcement and appropriate sanctions in federal court.

To the extent that we are a covered entity or a business associate of a covered entity, we must comply with HIPAA and the implementing regulations. We must also comply with other additional federal or state privacy laws and regulations that may apply to certain diagnoses, such as HIV/AIDS, to the extent that they apply to us.

***Other Applicable U.S. Laws***

In addition to the above-described regulation by United States federal and state government, the following are other federal and state laws and regulations that could directly or indirectly affect our ability to operate the business:

state and local licensure, registration, and regulation of the development of pharmaceuticals and biologics;

state and local licensure of medical professionals;

state statutes and regulations related to the corporate practice of medicine;

laws and regulations administered by U.S. Customs and Border Protection related to the importation of biological material into the United States;

other laws and regulations administered by the FDA;

other laws and regulations administered by HHS;

state and local laws and regulations governing human subject research and clinical trials;

the federal physician self-referral prohibition, also known as Stark Law, and any state equivalents to Stark Law;

the federal Anti-Kickback Statute and any state equivalent statutes and regulations;

federal and state coverage and reimbursement laws and regulations;

state and local laws and regulations for the disposal and handling of medical waste and biohazardous material;

Occupational Safety and Health Administration, or OSHA, regulations and requirements;

the Intermediate Sanctions rules of the IRS providing for potential financial sanctions with respect to “excess benefit transactions” with tax-exempt organizations;

the Physician Payments Sunshine Act (in the event that our products are classified as drugs, biologics, devices or medical supplies and are reimbursed by Medicare, Medicaid or the Children’s Health Insurance Program); and

state and other federal laws addressing the privacy of health information.

### ***Foreign Government Regulation***

In general, we will need to comply with the government regulations of each individual country in which our therapy centers are located and products are to be distributed and sold. These regulations vary in complexity and can be as stringent, and on occasion even more stringent, than FDA regulations in the United States. Due to the fact that there are new and emerging cell therapy regulations that have recently been drafted and/or implemented in various countries around the world, the application and subsequent implementation of these new and emerging regulations have little to no precedence. Therefore, the level of complexity and stringency is not always precisely understood today for each country, creating greater uncertainty for the international regulatory process. Furthermore, government regulations can change with little to no notice and may result in up-regulation of our product(s), thereby creating a greater regulatory burden for our cell processing technology products. We have not yet thoroughly explored the applicable laws and regulations that we will need to comply with in foreign jurisdictions. It is possible that we may not be permitted to expand our business into one or more foreign jurisdictions.

We do not have any definitive plans or arrangements with respect to the establishment by us of stem cell therapy clinics in any country. We intend to explore any such opportunities as they arise.

### **Offices**

Our principal executive offices are located at 40 Marcus Drive, Melville, New York, and our telephone number is (631) 760-8100. Our website is [www.biorestorative.com](http://www.biorestorative.com). Our internet website and the information contained therein or connected thereto are not intended to be incorporated by reference into this prospectus.

### **Employees**

We currently have 10 employees all of whom are full-time employees. We believe that our employee relations are good.

## MANAGEMENT

### Directors and Executive Officers

Information regarding our directors and executive officers is set forth below. Each of our officers devotes his or her full business time in providing services on our behalf.

Name	Age	Positions Held
Mark Weinreb	64	Chief Executive Officer, President and Chairman of the Board
Francisco Silva	42	Vice President of Research and Development
Mandy D. Clyde	35	Vice President of Operations and Secretary
Robert B. Catell	80	Director
John M. Desmarais	53	Director
A. Jeffrey Radov	65	Director
Charles S. Ryan	53	Director
Paul Jude Tonna	59	Director

### Mark Weinreb

Mark Weinreb has served as our Chief Executive Officer since October 2010, as our President since February 2012 and as our Chairman of the Board since April 2011. From February 2003 to October 2009, Mr. Weinreb served as President of NeoStem, Inc. (now known as Caladrius Biosciences, Inc.), a public international biopharmaceutical company engaged in, among other things, adult stem cell-related operations. From October 2009 to October 2010, he was subject to a non-competition agreement with NeoStem and was not engaged in business. Mr. Weinreb also served as Chief Executive Officer and Chairman of the Board of Directors of NeoStem from February 2003 to June 2006. In 1976, Mr. Weinreb joined Bio Health Laboratories, Inc., a state-of-the-art medical diagnostic laboratory providing clinical testing services for physicians, hospitals, and other medical laboratories. He became the laboratory administrator in 1978 and then an owner and the laboratory's Chief Operating Officer in 1982. In such capacity, he oversaw all technical and business facets, including finance and laboratory science technology. Mr. Weinreb left Bio Health Laboratories in 1989 when the business was sold. In 1992, Mr. Weinreb founded Big City Bagels, Inc., a national chain of franchised upscale bagel bakeries and became Chairman and Chief Executive Officer of such entity. Big City Bagels went public in 1995, and in 1999 Mr. Weinreb redirected the company and completed a merger with an Internet service provider. From 2000 to 2002, Mr. Weinreb served as Chief Executive Officer of Jestertek, Inc. (now known as Gesturetek, Inc.), a software development company pioneering gesture recognition and control using advanced interactive proprietary video technology. Mr. Weinreb received a Bachelor of Arts degree from Northwestern University and a Master of Science degree in Medical Biology from C.W. Post, Long Island University. We believe that Mr. Weinreb's executive-level management experience, his extensive experience in the adult stem cell sector and his service on our Board since October 2010 give him the qualifications and skills to serve as one of our directors.



**Francisco Silva**

Francisco Silva has served as our Vice President of Research and Development since March 2013, having also previously served in such position from April 2011 until March 2012. He served as our Research Scientist from March 2012 to June 2012 and as our Chief Scientist from June 2012 to March 2013. From 2007 to 2011, Mr. Silva served as Chief Executive Officer of DV Biologics LLC, and as President of DaVinci Biosciences, LLC, companies engaged in the commercialization of human based biologics for both research and therapeutic applications. From 2003 to 2007, Mr. Silva served as Vice President of Research and Development for PrimeGen Biotech LLC, a company engaged in the development of cell based platforms. From 2002 to 2003, he was a Research Scientist with PrimeGen Biotech and was responsible for the development of experimental designs that focused on germ line reprogramming stem cell platforms. Mr. Silva has taught courses in biology, anatomy and advanced tissue culture at California State Polytechnic University. He has obtained a number of patents relating to stem cells and has had numerous articles published with regard to stem cell research. Mr. Silva graduated from California State Polytechnic University with a degree in Biology. He also obtained a Graduate Presidential Fellowship and MBRS Fellowship from California State Polytechnic University.

**Mandy D. Clyde**

Mandy D. Clyde has been our Vice President of Operations since August 2009. She has served as our Secretary since December 2010 and served on our Board from September 2010 to April 2011. From 2006 to 2009, Ms. Clyde served as Educational Envoy and then CME/CE Coordinator for Professional Resources in Management Education, an accredited provider of continuing medical education. She conducted needs assessments nationally to determine in which areas clinicians most needed current education. She also oversaw onsite educational meetings and analyzed data for outcomes reporting. From 2005 to 2006, Ms. Clyde served as surgical coordinator for Eye Surgery Associates and the Rand Eye Institute, two prominent physician practices in Florida. Ms. Clyde has experience in medical editing for educational programs and is a published author of advanced scientific and clinical content on topics including Alzheimer's disease, breast cancer, sleep apnea and adult learning. She received a degree in Biology from Mercyhurst College.

**Robert B. Catell**

Robert B. Catell became a member of our Board of Directors in February 2016. Mr. Catell served as Chairman and Chief Executive Officer of KeySpan Corporation and KeySpan Energy Delivery, the former Brooklyn Union Gas, from 1998 to 2007. His career with Brooklyn Union Gas started in 1958. Following National Grid's acquisition of KeySpan Corporation in 2007, Mr. Catell became Chairman of National Grid, U.S. and Deputy Chairman of National Grid plc. Mr. Catell currently serves as Chairman of the Board of the Advanced Energy Research and Technology Center (AERTC) at Stony Brook University, New York State Smart Grid Consortium, Cristo Rey Brooklyn High School, Futures in Education Endowment Fund, and the New York Energy Policy Institute's Advisory Council (NYEPI). He also serves on the NYS Economic Development Power Allocation Board (EDPAB) and the Board of Directors of Applied DNA Sciences, Inc., a company that uses biotechnology as a forensic foundation in creating unique security solutions addressing the challenges of modern commerce. In addition, Mr. Catell serves as a board member of a number of other business, governmental and not-for-profit organizations. Mr. Catell holds both a Master's and Bachelor's degree in Mechanical Engineering from City College of New York. We believe that Mr. Catell's executive-level management experience and his extensive experience in the Long Island community give him the qualifications and skills to serve as one of our directors.

**John M. Desmarais**

John M. Desmarais became a member of our Board of Directors in December 2015. Mr. Desmarais is the founding partner of Desmarais LLP, an intellectual property trial boutique established in 2010, and the founder and owner of Round Rock Research LLC, a patent licensing company. From 1997 to 2009, he was a partner at the international law firm of Kirkland & Ellis LLP and served as a member of the firm's Management Committee from 2004 to 2009. Prior to joining Kirkland, and after practicing in the area of intellectual property litigation and counseling for several years, he left private practice to serve as an Assistant United States Attorney in the Southern District of New York, where for

three years he represented the federal government in criminal jury trials. Mr. Desmarais is a member of the bars of New York and Washington, D.C., the United States Supreme Court, the Federal Circuit Court of Appeals, and various other federal district courts and courts of appeal. He is also registered to practice before the United States Patent and Trademark Office. Mr. Desmarais has been recognized by numerous publications as one of the nation's leading intellectual property litigators. Mr. Desmarais obtained a degree in Chemical Engineering from Manhattan College and a law degree from New York University. We believe that Mr. Desmarais' business and legal experience, including his extensive experience in the area of intellectual property, give him the qualifications and skills to serve as one of our directors.

#### **A. Jeffrey Radov**

A. Jeffrey Radov became a member of our Board and Chair of our Audit Committee in April 2011. Mr. Radov is an entrepreneur and businessman with more than 35 years of experience in media, communications and financial endeavors. Since 2002, he has served as the Managing Partner of Walworth Group, which provides consulting and advisory services to a variety of businesses, including hedge funds, media, entertainment and Internet companies, financial services firms and early stage ventures. Mr. Radov is also an advisor to GeekVentures, LLC, an incubator for technology startups in Israel. From 2008 to 2010, Mr. Radov was a Principal and Chief Operating Officer at Aldebaran Investments, LLC, a registered investment advisor. From 2005 to 2008, Mr. Radov was Chief Operating Officer at EagleRock Capital Management, a group of hedge funds. Prior to joining EagleRock, Mr. Radov was a founding investor in and Board member of Edusoft, Inc., an educational software company. From 2001 to 2002, Mr. Radov was a Founder-in-Residence at SAS Investors, an early-stage venture fund. From 1999 to 2001, Mr. Radov was CEO and co-founder of VocaLoca, Inc., an innovator in consumer-generated audio content on the Internet. Mr. Radov was a founding executive of About.Com, Inc., an online information source, and was its EVP of Business Development and Chief Financial Officer from its inception. In 1996, prior to founding About.Com, Mr. Radov was a Director at Prodigy Systems Company, a joint venture of IBM and Sears. Mr. Radov was also a principal in the management of a series of public limited partnerships that invested in the production and distribution of more than 130 major motion pictures. From 1982 to 1984, Mr. Radov was the Director of Finance at Rainbow Programming Enterprises, a joint venture among Cablevision Systems Corporation, Cox Broadcasting and Daniels & Associates. From 1977 to 1981, Mr. Radov was Director of Marketing at Winklevoss & Associates. Mr. Radov earned a Masters of Business Administration from The Wharton School of the University of Pennsylvania and holds a Bachelor of Arts degree from Cornell University. We believe that Mr. Radov's executive-level management experience and his extensive experience in the finance industry give him the qualifications and skills to serve as one of our directors.

**Charles S. Ryan**

Dr. Charles S. Ryan became a member of our Board in April 2015. Since October 2016, Dr. Ryan has served as Chief Executive Officer of Orthobond, Inc., a company that seeks to improve the performance and safety of medical devices through the use of proprietary non-polymer technology. From March 2015 to May 2016, Dr. Ryan served as Vice President, General Counsel of Cold Spring Harbor Laboratory, a not-for-profit research and education institution at the forefront of molecular biology and genetics, with research programs focusing on cancer, neuroscience, plant biology, genomics and quantitative biology. From 2003 to 2014, he served as Senior Vice President and Chief Intellectual Property Counsel at Forest Laboratories, Inc., a New York Stock Exchange company that developed and marketed pharmaceutical products in a variety of therapeutic categories including central nervous system, cardiovascular, anti-infective, respiratory, gastrointestinal, and pain management medicine. Dr. Ryan has over 20 years experience in managing all aspects of intellectual property litigation, conducting due diligence investigations and prosecuting patent and trademark applications in the pharmaceutical and biotechnology industries. He also serves as a director of Applied DNA Sciences, Inc., a company that uses biotechnology as a forensic foundation in creating unique security solutions addressing the challenges of modern commerce. Dr. Ryan earned a doctorate in Oral Biology and Pathology from Stony Brook University and a law degree from Western New England University. We believe that Dr. Ryan's executive-level management and legal experience give him the qualifications and skills to serve as one of our directors.

**Paul Jude Tonna**

Paul Jude Tonna became a member of our Board and Chair of our Compensation Committee in June 2014. He has served as Chair of our Nominating Committee since April 2015. Mr. Tonna is a highly regarded community leader and an accomplished businessman with an extensive history of public service. From 1994 to 2005 he served as a Suffolk County, New York Legislator, and from 2000 through 2002 was its Presiding Officer. He currently serves as Executive Director and a member of the Board of Advisors for The Energeia Partnership at Molloy College, a leadership academy based in Rockville Centre, New York, dedicated to identifying and addressing the serious, complex and multi-dimensional issues challenging the Long Island region. Mr. Tonna is a former Adjunct Professor in Theology & Religious Studies at St. John's University. He served as Chairman of the Suffolk County Industrial Development Agency, and currently serves as Trustee of the Long Island State Parks & Recreation Commission and as Public Trustee of the Stationary Engineers Industry Stabilization Fund. Mr. Tonna is a board member of The Advanced Energy Research & Technology Center at Stony Brook University, The Long Island Index Advisory Board and Erase Racism's College of Advisors. He also serves as the Executive Director of the Suffolk County Village Officials Association and the United States Green Building Council-Long Island Chapter. Mr. Tonna is a founding director of Empire National Bank and Chairman and Commissioner of the South Huntington Water District. Mr. Tonna holds an undergraduate degree in Philosophy from New York University and a Master's degree in Theology from Immaculate Conception Seminary, and he conducted doctoral studies in Systemic Theology at Fordham University. We believe that Mr. Tonna's executive-level management experience and his extensive experience in the Long Island community give him the qualifications and skills to serve as one of our directors.



**Scientific Advisors**

**Scientific Advisory Board**

The following persons are the members of our Scientific Advisory Board:

<b>Name</b>	<b>Principal Positions</b>
Wayne Marasco, M.D., Ph.D. Chairman	Professor, Department of Cancer Immunology & AIDS, Dana-Farber Cancer Institute;  Professor of Medicine, Harvard Medical School;  Principal Faculty Member, Harvard Stem Cell Institute
Naiyer Imam, M.D.	Chairman and President of First Medicine Inc., an international telemedicine corporation dedicated to virtual physician services and chronic disease management.  Director, Interventional and Endovascular Neurosurgery;
Wayne J. Olan, M.D.	Associate Professor, Neurosurgery and Radiology, George Washington University Medical Center;  Consulting Physician, Department of Radiology, National Institutes of Health  President and Founder, Access BIO, L.C.; Fellow, Academy of Toxicological Sciences and the Regulatory Professional Society;
Joy Cavagnaro, Ph.D., DABT, RAC	Formerly Senior Pharmacologist and Director of Quality Assurance, Food and Drug Administration's Center for Biologics Evaluation and Research

**Chief Medical Advisor for Spine Medicine**

Gregory E. Lutz, M.D. serves as our Chief Medical Advisor for Spine Medicine. Dr. Lutz is Professor of Clinical Rehabilitation Medicine, Weill Medical College of Cornell. He is the Physiatrist-in-Chief Emeritus for Hospital for Special Surgery, or HSS. In 1997, Dr. Lutz established the Physiatry Department at HSS when he became Physiatrist-in-Chief. Dr. Lutz recently founded the Regenerative SportsCare Institute in the Upper East Side of Manhattan. The institute is dedicated to the regenerative musculoskeletal care of athletes of all ages and levels. He is also consulting physician to the National Hockey League Players' Association.

### **Family Relationships**

There are no family relationships among any of our executive officers and directors.

### **Term of Office**

We have a classified Board of Directors. The directors will hold office until the respective annual meetings of stockholders indicated below and until their respective successors are elected and qualified or until their earlier resignation or removal.

Name	Class	Term Expires
Mark Weinreb	III	2020
Robert B. Catell	I	2018
John M. Desmarais	II	2019
A. Jeffrey Radov	III	2020
Charles S. Ryan	I	2018
Paul Jude Tonna	II	2019

Each executive officer will hold office until the initial meeting of the Board of Directors following the next annual meeting of stockholders and until his or her successor is elected and qualified or until his or her earlier resignation or removal.

## EXECUTIVE COMPENSATION

### Summary Compensation Table

The following Summary Compensation Table sets forth all compensation earned in all capacities during the fiscal years ended December 31, 2016 and 2015 by our (i) principal executive officer, and (ii) our two most highly compensated executive officers, other than our principal executive officer, whose total compensation for the 2016 fiscal year, as determined by Regulation S-K, Item 402, exceeded \$100,000 (the individuals falling within categories (i) and (ii) are collectively referred to as the Named Executive Officers):

Name and Principal Position	Year	Salary	Bonus	Option	All	Total
				Awards	Other	
				Earned (1)	Compensation	
Mark Weinreb, Chief Executive Officer	2016	\$400,000	\$128,000 <sup>(2)</sup>	\$887,000 <sup>(3)</sup>	\$7,200	<sup>(4)</sup> \$1,422,200 <sup>(4)</sup>
	2015	\$400,000	\$200,000 <sup>(5)</sup>	\$743,300 <sup>(6)</sup>	\$7,200	<sup>(7)</sup> \$1,350,500 <sup>(7)</sup>
Edward Field President of Disc/Spine Division	2016	\$300,000	\$54,000 <sup>(2)</sup>	\$263,000 <sup>(8)</sup>	\$-	\$617,000
	2015 <sup>(9)</sup>	\$252,500	\$7,612	\$291,900 <sup>(10)</sup>	\$-	\$552,012
Francisco Silva, VP of Research and Development	2016	\$250,000	\$32,000 <sup>(2)</sup>	\$197,200 <sup>(11)</sup>	\$-	\$479,200
	2015	\$250,000	\$-	\$91,500 <sup>(12)</sup>	\$-	\$341,500



The amounts reported in this column represent the grant date fair value of the option awards granted during the years ended December 31, 2016 and 2015, calculated in accordance with FASB ASC Topic 718. For a detailed (1) discussion of the assumptions used in estimating fair values, see Note 10 – Stockholders’ Deficiency in the notes that accompany our consolidated financial statements included in this prospectus under “Index to Financial Statements”.

(2) Represents the amount of bonus for 2016 earned pursuant to the achievement of certain performance goals.

During 2016, Mr. Weinreb was granted a ten year option under the Plan for the purchase of 275,000 shares of common stock at an exercise price of \$3.73 per share. Such option is exercisable to the extent of 91,667 shares as (3) of each of the first and second anniversaries of the date of grant and 91,666 shares as of the third anniversary of the date of grant. See “Employment Agreements” below for a discussion of certain provisions relating to the options granted to Mr. Weinreb.

Of the aggregate \$1,422,200 earned during 2016, \$887,000 represents the grant date value of non-cash stock-based compensation awards, irrespective of the vesting period of those awards. Of the \$535,200 earned cash (4) compensation, \$7,200 and \$398,463 were paid in cash during 2016 and 2017 (prior to the date of the filing of this prospectus), respectively, and \$129,537 remains unpaid for 2016. All Other Compensation represents an automobile allowance paid to Mr. Weinreb in 2016.

- (5) Pursuant to Mr. Weinreb's employment agreement with us, he earned a bonus for 2015 equal to 50% of his annual salary. See "Employment Agreements" below.

(6) During 2015, Mr. Weinreb was granted a ten year option under the Plan for the purchase of 208,000 shares of common stock at an exercise price of \$7.00 per share, subject to stockholder approval of an increase in the number of shares of common stock authorized to be issued pursuant to the Plan. Stockholder approval of such increase was obtained in 2015. Such option is exercisable to the extent of 104,000 shares as of such stockholder approval, 34,667 shares as of each of the first and second anniversaries of the date of grant and 34,666 shares as of the third anniversary of the date of grant. See "Employment Agreements" below for a discussion of certain provisions relating to the options granted to Mr. Weinreb and "Certain Relationships and Related Transactions" below for a discussion of the repricing of the option.

(7) Of the aggregate \$1,350,500 earned during 2015, \$743,300 represents the grant date value of non-cash stock-based compensation awards, irrespective of the vesting period of those awards. Of the \$607,200 earned cash compensation, \$7,200, \$543,470 and \$56,530 were paid in cash during 2015, 2016 and 2017, respectively, and nothing remains unpaid for 2015. All Other Compensation represents an automobile allowance paid to Mr. Weinreb in 2015.

(8) During 2016, Mr. Field was granted a ten year option under the Plan for the purchase of 80,000 shares of common stock at an exercise price of \$3.73 per share. Such option was exercisable to the extent of 26,667 shares as of each of the first and second anniversaries of the date of grant and 26,666 shares as of the third anniversary of the date of grant. As a result of Mr. Field's resignation in July 2017, the options that would have vested following his resignation date have terminated.

(9) Mr. Field was elected as President of our Disc/Spine Division in February 2015.

(10) During 2015, Mr. Field was granted a ten year option under the Plan for the purchase of 25,000 shares of common stock at an exercise price of \$9.20 per share. Such option was exercisable to the extent of 8,334 shares as of the first anniversary of the date of grant and 8,333 shares as of each of the second and third anniversaries of the date of grant. In addition, during 2015, Mr. Field was granted a ten year option under the Plan for the purchase of 25,000 shares of common stock at an exercise price of \$7.00 per share, subject to stockholder approval of an increase in the number of shares of common stock authorized to be issued pursuant to the Plan. Stockholder approval of such increase was obtained in 2015. Such option was exercisable to the extent of 8,334 shares as of the first anniversary of the date of grant and 8,333 shares as of each of the second and third anniversaries of the date of grant. See "Certain Relationships and Related Transactions" below for a discussion of the repricing of the options. As a result of Mr. Field's resignation in July 2017, the options have would have vested following his resignation date have terminated.

(11) During 2016, Mr. Silva was granted a ten year option under the Plan for the purchase of 60,000 shares of common stock at an exercise price of \$3.73 per share. Such option is exercisable to the extent of 20,000 shares as of each of the first, second and third anniversaries of the date of grant.

(12) During 2015, Mr. Silva was granted a ten year option under the Plan for the purchase of 25,000 shares of common stock at an exercise price of \$7.00 per share, subject to stockholder approval of an increase in the number of shares of common stock authorized to be issued pursuant to the Plan. Stockholder approval of such increase was obtained in 2015. Such option is exercisable to the extent of 8,334 shares as of the first anniversary of the date of grant and 8,333 shares as of each of the second and third anniversaries of the date of grant. See "Certain Relationships and Related Transactions" below for a discussion of the repricing of the option.



**Outstanding Equity Awards at Fiscal Year-End**

The following table provides information on outstanding equity awards as of December 31, 2016 to the Named Executive Officers:

Name	Option Awards				Stock Awards				
	Number of securities underlying unexercised options	Number of securities underlying unexercised options	Equity incentive plan awards: Number of securities underlying unexercised options	Option exercise price	Option expiration date	Number of shares or units of stock that have	Market value of shares of units that have	Equity incentive plan awards: Number of unearned shares, units or rights that have	Equity incentive plan awards: Market or payout value of unearned shares, units or other rights that have
Mark Weinreb	4,000	-	-	(10) \$ 10.00	12/14/2020	-	\$ -	-	\$ -
Mark Weinreb	50,000	-	-	\$ 21.00	2/10/2022	-	\$ -	-	\$ -
Mark Weinreb	20,000	-	-	\$ 30.00	12/7/2022	-	\$ -	-	\$ -
Mark Weinreb	12,500	-	-	\$ 12.00	10/4/2023	-	\$ -	-	\$ -
Mark Weinreb	50,000	-	-	\$ 13.00	2/18/2024	-	\$ -	-	\$ -
Mark Weinreb	100,000	50,000	(1) -	\$ 6.60	10/23/2024	-	\$ -	-	\$ -
Mark Weinreb	138,667	69,333	(2) -	\$ 7.00	9/4/2025	-	\$ -	-	\$ -
Mark Weinreb	91,667	183,333	(3) -	\$ 3.73	6/10/2026	-	\$ -	-	\$ -
Edward L. Field	8,334	16,666	(4) -	\$ 9.20	2/9/2025	-	\$ -	-	\$ -
Edward L. Field	8,334	16,666	(5) -	\$ 7.00	9/4/2025	-	\$ -	-	\$ -
	-	80,000	(6) -	\$ 3.73	6/1/2026	-	\$ -	-	\$ -

Edward L.  
Field

Francisco Silva	4,000	-	-	\$ 10.00	4/4/2021	-	\$ -	-	\$ -
Francisco Silva	150	-	-	\$ 25.00	6/23/2021	-	\$ -	-	\$ -
Francisco Silva	1,000	-	-	\$ 20.00	11/16/2021	-	\$ -	-	\$ -
Francisco Silva	2,000	-	-	\$ 21.00	2/10/2022	-	\$ -	-	\$ -
Francisco Silva	4,500	-	3,000	(7) \$ 28.00	5/2/2022	-	\$ -	-	\$ -
Francisco Silva	4,000	-	-	\$ 30.00	12/7/2022	-	\$ -	-	\$ -
Francisco Silva	5,000	-	-	\$ 12.00	10/4/2023	-	\$ -	-	\$ -
Francisco Silva	12,500	-	-	\$ 13.00	2/18/2024	-	\$ -	-	\$ -
Francisco Silva	2,000	-	-	\$ 10.60	3/12/2024	-	\$ -	-	\$ -
Francisco Silva	2,000	-	-	\$ 28.00	5/2/2022	-	\$ -	-	\$ -
Francisco Silva	25,000	12,500	(8) -	\$ 6.60	10/23/2024	-	\$ -	-	\$ -
Francisco Silva	8,334	16,666	(5) -	\$ 7.00	9/4/2025	-	\$ -	-	\$ -
Francisco Silva	-	60,000	(9) -	\$ 3.73	6/10/2026	-	\$ -	-	\$ -

(1) Option is exercisable effective as of October 23, 2017.

(2) Option is exercisable to the extent of 34,667 shares effective as of September 4, 2017 and 34,666 shares effective as of September 4, 2018.

(3) Option is exercisable to the extent of 91,667 shares on June 10, 2017 and 91,666 shares on June 10, 2018.

(4) Option was exercisable to the extent of 8,333 shares effective as of each of February 9, 2017 and February 9, 2018. As a result of Mr. Field's resignation on July 24, 2017, such option has terminated to the extent not vested as of such date.

(5) Option was exercisable to the extent of 8,333 shares effective as of each of September 4, 2017 and September 4, 2018. As a result of Mr. Field's resignation on July 24, 2017, such option has terminated.

(6) Option was exercisable to the extent of 26,667 shares on each of June 10, 2017 and June 10, 2018, and 26,666 shares on June 10, 2019. As a result of Mr. Field's resignation on July 24, 2017, such option has terminated to the extent not vested as of such date.

(7) Options are exercisable commencing on the date (provided that such date is during Mr. Silva's employment with us), if any, on which either (i) the FDA approves a biologics license application made by us with respect to any biologic product or (ii) a 510(k) Premarket Notification submission is made by us to the FDA with respect to a certain device.

(8) Option is exercisable effective as of October 23, 2017.

(9) The option is exercisable to the extent of 20,000 shares on each of June 10, 2017, June 10, 2018 and June 10, 2019.

(10) See "Certain Relationships and Related Transactions" for a discussion of the repricing of all options that had an exercise price greater than \$4.70 per share.

## Director Compensation

The following table sets forth certain information concerning the compensation of our non-employee directors for the fiscal year ended December 31, 2016:

Name	Fees Earned or Paid in Cash	Stock Awards	Option Awards (1)	Non-Equity Incentive Plan Compensation	Nonqualified		Total
					Deferred Compensation Earnings	All Other Compensation	
Robert B. Catell <sup>(2)</sup>	\$35,000	\$ -	\$146,400 <sup>(3)</sup>	\$ -	\$ -	\$ -	\$181,400
John M. Desmarais	\$40,000	\$ -	\$112,900 <sup>(4)</sup>	\$ -	\$ -	\$ -	\$152,900
A. Jeffrey Radov	\$40,000	\$ -	\$412,900 <sup>(5)</sup>	\$ -	\$ -	\$ -	\$452,900
Charles S. Ryan	\$40,000	\$ -	\$148,400 <sup>(6)</sup>	\$ -	\$ -	\$ -	\$188,400
Paul Jude Tonna	\$40,000	\$ -	\$206,400 <sup>(7)</sup>	\$ -	\$ -	\$ -	\$246,400

(1) The amounts reported in this column represent the grant date fair value of the option awards granted during the year ended December 31, 2016, calculated in accordance with FASB ASC Topic 718. For a detailed discussion of

the assumptions used in estimating fair values, see Note 10 – Stockholders’ Deficiency in the notes that accompany our consolidated financial statements included in this prospectus under “Index to Financial Statements”.

- (2) Mr. Catell was elected as a director in February 2016.
- (3) As of December 31, 2016, Mr. Catell held options for the purchase of 44,000 shares of common stock.
- (4) As of December 31, 2016, Mr. Desmarais held options for the purchase of 50,000 shares of common stock.
- (5) As of December 31, 2016, Mr. Radov held options for the purchase of 366,000 shares of common stock.
- (6) As of December 31, 2016, Mr. Ryan held options for the purchase of 81,000 shares of common stock.
- (7) As of December 31, 2016, Mr. Tonna held options for the purchase of 164,000 shares of common stock.

Each of Messrs. Catell, Desmarais, Radov, Ryan and Tonna, our non-employee directors, is entitled to receive, as compensation for his services as a director, \$30,000 per annum plus \$10,000 per annum for all committee service, in each case payable quarterly (subject to our cash needs). Our non-employee directors also receive stock options, from time to time, in consideration of their services.

## CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

### Westbury

In February 2015, we sold 50,000 shares of common stock to Westbury (Bermuda) Ltd., or Westbury, one of our principal stockholders, at an aggregate purchase price of \$300,000. In consideration of the purchase, we issued to Westbury a five year warrant for the purchase of 12,500 shares of common stock at an exercise price of \$15.00 per share.

In May 2015, we entered into an exchange agreement with Westbury pursuant to which Westbury converted the outstanding indebtedness owed to it in the aggregate principal amount of \$4,410,937, together with accrued interest in the amount of \$69,436, into 746,729 shares of our common stock and a five year warrant for the purchase of 186,682 shares of common stock at an exercise price of \$15.00 per share. In consideration of the note exchange, we agreed to extend the expiration date of a warrant held by Westbury for the purchase of 40,000 shares of our common stock to December 31, 2017.

In October 2015, we borrowed \$150,000 from an affiliate of Westbury. The promissory note evidencing the loan, provided for the payment of the principal amount, together with interest at the rate of 10% per annum, in December 2015. The note provided for the mandatory prepayment of the principal amount, together with accrued interest, to the extent that we received proceeds from a public equity offering or monies in payment of an accounts receivable. The payment of the note was secured by the grant to the lender of a security interest in the patent we received in September 2015 related to our *ThermoStem Program*. In December 2015, in consideration of an extension of the maturity date of the note to March, 2016, we agreed to reduce the exercise price of warrants held by Westbury for the purchase of 239,182 shares of common stock from \$15.00 to \$4.00 per share. In July 2016, the note was paid in full.

### John M. Desmarais

In March 2016, John M. Desmarais, one of our non-employee directors and principal stockholders, purchased 250,000 shares of our common stock at a price of \$4.00 per share (gross proceeds of \$1,000,000) and, in consideration thereof, received the following warrants: (i) a five year warrant for the purchase of 250,000 shares of our common stock at an exercise price of \$5.00 per share; (ii) an eight month warrant for the purchase of 444,444 shares of our common stock at an exercise price of \$4.50 per share; and (iii) a one year warrant for the purchase of 400,000 shares of our common stock at an exercise price of \$5.00 per share.



In June 2016, we borrowed \$500,000 from a trust for which Mr. Desmarais and his wife serve as the trustees and which was established for the benefit of Mr. Desmarais's immediate family. The promissory note evidencing the loan provided for the payment of the principal amount, together with interest at the rate of 10% per annum, in July 2017. In July 2017, we and the trust agreed to amend the note to provide for a maturity date of December 1, 2017 and an increase in the interest rate to 15% per annum effective July 1, 2017. In the event that, prior to the maturity date of the note, we receive net proceeds of \$10,000,000 from a single equity or debt financing (as opposed to a series of related or unrelated financings), the trust has the right to require that we prepay the amount due under the note (subject to the consent of the party that provided the particular financing). In consideration of the loan, we issued to the trust a five year warrant for the purchase of 40,000 shares of our common stock at an exercise price of \$4.00 per share.

In September 2016, Mr. Desmarais purchased 80,000 shares of our common stock at a purchase price of \$3.00 per share (gross proceeds of \$240,000). In consideration of the purchase, we issued to Mr. Desmarais a five year warrant for the purchase of 80,000 shares of our common stock at an exercise price of \$4.00 per share and extended the expiration dates of the warrants held by Mr. Desmarais for the purchase of 444,444 and 400,000 shares of our common stock for a period of one year to November 18, 2017 and March 18, 2018, respectively.

In December 2016, we borrowed \$60,000 from Mr. Desmarais. The promissory note evidencing the loan provided for the payment of \$65,000 on January 31, 2017. In consideration of the loan, we further extended the expiration dates of the warrants held by Mr. Desmarais for the purchase of 444,444 and 400,000 shares of our common stock to December 31, 2018. In February 2017, we entered into an exchange agreement with Mr. Desmarais pursuant to which Mr. Desmarais exchanged the principal amount of the promissory note, together with accrued interest, for 21,731 shares of our common stock at an exchange price of \$3.00 per share and, in consideration thereof, received a five year warrant for the purchase of 21,731 shares of our common stock at an exercise price of \$4.00 per share.

In July 2017, we borrowed \$175,000 from Mr. Desmarais. The promissory note evidencing the loan provides for the payment of the principal amount, together with interest at the rate of 15% per annum, on December 1, 2017. In the event that, prior to the maturity date of the note, we receive net proceeds of \$10,000,000 from a single equity or debt financing (as opposed to a series of related or unrelated financings), Mr. Desmarais has the right to require that we prepay the amount due under the note (subject to the consent of the party that provided the particular financing). The payment of the note is secured by the grant of a security interest in our equipment and intellectual property. Concurrently, we agreed that the payment of the \$500,000 note issued to the Desmarais trust is also secured by the grant of such security interest.

## Others

In May 2015, Charles S. Ryan, one of our non-employee directors, purchased 10,000 shares of our common stock at a price of \$5.00 per share (gross proceeds of \$50,000) and, in consideration thereof, received a five year warrant for the purchase of 10,000 shares of our common stock at an exercise price of \$15.00 per share.

In November 2015, Mr. Ryan exchanged a promissory note in the principal amount of \$25,000 for 6,250 shares of our common stock at an exchange price of \$4.00 per share and, in consideration thereof, received a five year warrant for the purchase of 6,250 shares of our common stock at an exercise price of \$4.00 per share.

Between June 2015 and September 2015, each of Stanley Weinreb, the father of Mark Weinreb, our Chief Executive Officer, and his wife, Constance Weinreb, loaned us \$65,000. In consideration of the loans, we issued a promissory note to each of them in the principal amount of \$75,000, payable on October 30, 2015. We have repaid \$20,000 and \$10,000 of the principal amount payable to Constance Weinreb and Stanley Weinreb, respectively. Constance Weinreb and Stanley Weinreb agreed to extend the maturity date of their notes to August 31, 2016 and September 30, 2016, respectively. No interest is payable pursuant to the notes.

Between March 2016 and May 2016, Robert B. Catell, one of our non-employee directors, purchased an aggregate of 50,000 shares of our common stock at a price of \$4.00 per share (aggregate gross proceeds of \$200,000) and, in consideration thereof, received five year warrants for the purchase of an aggregate of 50,000 shares of our common stock at an exercise price of \$5.00 per share.

In August 2016, we borrowed \$100,000 from Mr. Catell. The promissory note evidencing the loan provided for the payment of the principal amount, together with interest at the rate of 10% per annum, on February 5, 2017. In consideration of the loan, we issued to Mr. Catell a five year warrant for the purchase of 8,000 shares of our common stock at an exercise price of \$4.00 per share. In August 2017, we and Mr. Catell agreed that the outstanding principal amount of the note of \$50,000 will be payable on February 5, 2018. In consideration of such extension of the maturity

date, we issued to Mr. Catell a five year warrant for the purchase of 5,000 shares of our common stock at an exercise price of \$4.00 per share. In the event that, prior to the maturity date of the note, we receive net proceeds of \$10,000,000 from a single equity or debt financing (as opposed to a series of related or unrelated financings), Mr. Catell has the right to require that we prepay the amount due under the note (subject to the consent of the party that provided the particular financing).

In December 2016, we borrowed \$30,000 from Mr. Catell. The promissory note evidencing the loan provided for the payment of \$32,500 on January 31, 2017. In February 2017, we entered into an exchange agreement with Mr. Catell pursuant to which Mr. Catell exchanged the principal amount of the promissory note, together with accrued interest, for 10,866 shares of our common stock at an exchange price of \$3.00 per share and, in consideration thereof, received a five year warrant for the purchase of 10,866 shares of our common stock at an exercise price of \$4.00 per share.

In February 2017, the Compensation Committee of our Board of Directors reduced the exercise price of outstanding options for the purchase of an aggregate of 1,208,950 shares of our common stock (with exercise prices ranging between \$5.70 and \$30.00 per share) to \$4.70 per share, which was the closing price for our common stock on the day prior to the determination, as reported by the OTCQB. The exercise price reduction related to options held by, among others, our Named Executive Officers and directors with respect to the following number of shares: (i) Mark Weinreb, our President, Chief Executive Officer and Chairman of the Board: 494,500 shares, (ii) A. Jeffrey Radov, one of our directors: 238,000 shares, (iii) Paul Jude Tonna, one of our directors: 100,000 shares, (iv) Dr. Charles S. Ryan, one of our directors: 35,000 shares, (v) Francisco Silva, our Vice President of Research and Development: 100,650 shares, and (vi) Edward L. Field, then President of our Disc/Spine Division: 50,000 shares.

In March 2017, we entered into exchange agreements with Messrs. Catell, Desmarais, Ryan and Tonna, each a non-employee director, pursuant to which accrued director fees were exchanged for our common stock at an exchange price of \$3.00 per share and, in consideration thereof, we issued to them five year warrants for the purchase of our common stock at an exercise price of \$4.00 per share as follows: (i) Mr. Catell: \$45,000 for 15,000 shares and 15,000 warrants; (ii) Mr. Desmarais: \$50,000 for 16,667 shares and 16,667 warrants; (iii) Mr. Ryan: \$80,000 for 26,667 shares and 26,667 warrants; and (iv) Mr. Tonna: \$90,000 for 30,000 shares and 30,000 warrants.

In August 2017, we borrowed \$125,000 from Robert Austin Sperling, Jr., one of our principal stockholders. The promissory note evidencing the loan provided for the payment of the principal amount, together with interest at the rate of 12% per annum, on May 23, 2018. In the event that, prior to the maturity date of the note, we receive net proceeds of \$10,000,000 from a single equity or debt financing (as opposed to a series of related or unrelated financings), Mr. Sperling has the right to require that we prepay the amount due under the note (subject to the consent of the party that provided the particular financing). In consideration of the loan, we issued to Mr. Sperling a five year warrant for the purchase of 15,000 shares of our common stock at an exercise price of \$4.00 per share.

## **Director Independence**

### **Board of Directors**

Our Board of Directors is currently comprised of Mark Weinreb (Chairman), Robert B. Catell, John M. Desmarais, A. Jeffrey Radov, Charles S. Ryan and Paul Jude Tonna. Each of Messrs. Catell, Desmarais, Radov, Ryan and Tonna is currently an “independent director” based on the definition of independence in Listing Rule 5605(a)(2) of the listing standards of The Nasdaq Stock Market.

### **Audit Committee**

The members of our Board's Audit Committee currently are Messrs. Radov (Chairman), Ryan and Tonna, each of whom is an "independent director" based on the definition of independence in Listing Rule 5605(a)(2) of the listing standards of The Nasdaq Stock Market and Rule 10A-3(b)(1) under the Exchange Act.

### **Nominating Committee**

The members of our Board's Nominating Committee currently are Messrs. Tonna (Chairman), Radov and Ryan, each of whom is an "independent director" based on the definition of independence in Listing Rule 5605(a)(2) of the listing standards of The Nasdaq Stock Market.

### **Compensation Committee**

The members of our Board's Compensation Committee currently are Messrs. Tonna (Chairman), Catell and Radov, each of whom is an "independent director" based on the definition of independence in Listing Rule 5605(a)(2) of the listing standards of The Nasdaq Stock Market.

**PRINCIPAL STOCKHOLDERS****Principal Stockholders**

The following table sets forth certain information regarding the beneficial ownership of our common stock, as of September 27, 2017, known by us, through transfer agent records, to be held by: (i) each person who beneficially owns 5% or more of the shares of common stock then outstanding; (ii) each of our directors; (iii) each of our Named Executive Officers; and (iv) all of our directors and executive officers as a group, and as adjusted to give effect to the issuance of the shares of common stock in this offering stock (assuming no investors in this offering choose to purchase shares of Series A preferred stock).

The information in this table reflects “beneficial ownership” as defined in Rule 13d-3 of the Exchange Act. To our knowledge, and unless otherwise indicated, each stockholder has sole voting power and investment power over the shares listed as beneficially owned by such stockholder, subject to community property laws where applicable. Percentage ownership is based on 5,599,178 shares of common stock outstanding as of September 27, 2017, and shares of common stock outstanding after giving effect to the sale of shares of common stock in this offering, respectively (assuming the maximum offerings size of \$15,000,000 is achieved and no investors in this offering choose to purchase shares of Series A preferred stock).

Name and Address of Beneficial Owner	Number of Shares Beneficially Owned	Approximate Percentage of Class	
		Prior to the Offering	<b>After the Offering<sup>(12)</sup></b>
John M. Desmarais 230 Park Aveue  New York, New York	1,941,241 (1)	27.5 %	
Westbury (Bermuda) Ltd. Westbury Trust Victoria Hall 11 Victoria Street Hamilton, HMEX Bermuda	1,191,662 (2)	20.4 %	
Mark Weinreb 40 Marcus Drive, Suite One Melville, New York	814,835 (3)	12.9 %	
Robert Austin Sperling Jr. 22 East Lake Drive Annapolis, Maryland	437,720 (4)	7.6 %	

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A. Jeffrey Radov 8 Walworth Avenue Scarsdale, New York™	358,251 (5)	6.0	%
Paul Jude Tonna 69 Chichester Road Huntington, New York	241,834 (6)	4.2	%
Robert B. Catell 62 Osborne Road Garden City, New York	222,400 (7)	3.9	%
Charles S. Ryan 1302 Ridge Road Laurel Hollow, New York	169,002 (8)	3.0	%
Francisco Silva 40 Marcus Drive, Suite One Melville, New York	113,562 (9)	2.0	%
Edward L. Field 40 Marcus Drive, Suite One Melville, New York	51,668 (10)	0.9	%
All directors and executive officers as a group (8 persons)	3,920,009 (11)	44.7	%

(1) Based upon Schedule 13D filed with the SEC and other information known to us. Includes 1,447,843 shares of common stock issuable upon the exercise of currently exercisable options and warrants (including warrants for the purchase of 40,000 shares of common stock held by a trust for which Mr. Desmarais and his wife serve as the trustees and which was established for the benefit of his immediate family).

(2) Based upon Schedule 13D filed with the SEC and other information known to us. Includes 239,182 shares of common stock issuable upon the exercise of currently exercisable warrants. The shares and warrants are owned directly by Westbury (Bermuda) Ltd. which is 100% owned by Westbury Trust.

(3) Includes 734,835 shares of common stock issuable upon the exercise of options that are exercisable currently or within 60 days.

(4) Includes 166,360 shares of common stock issuable upon the exercise of currently exercisable warrants.

(5) Includes 345,751 shares of common stock issuable upon the exercise of options that are exercisable currently or within 60 days.

(6) Represents (i) 6,000 shares of common stock held jointly with Mr. Tonna's wife and (ii) 205,834 shares of common stock issuable upon the exercise of options and warrants that are exercisable currently or within 60 days.

(7) Includes 146,534 shares of common stock issuable upon the exercise of currently exercisable options and warrants.

(8) Includes 126,085 shares of common stock issuable upon the exercise of options and warrants that are exercisable currently or within 60 days.

(9) Includes (i) 170 shares of common stock held in an individual retirement account for the benefit of Mr. Silva and (ii) 109,317 shares of common stock issuable upon the exercise of options that are exercisable currently or within 60 days.

(10) Represents shares of common stock issuable upon the exercise of options that are currently exercisable.

(11) Includes 3,170,083 shares of common stock issuable upon the exercise of options and warrants that are exercisable currently or within 60 days.

(12) Assumes the sale of all \$15,000,000 in securities offered by this prospectus.

#### **Securities Authorized for Issuance Under Equity Compensation Plans**



The following table sets forth information as of December 31, 2016 with respect to compensation plans (including individual compensation arrangements) under which our common stock are authorized for issuance, aggregated as follows:

All compensation plans previously approved by security holders; and

All compensation plans not previously approved by security holders.

	Number of securities to be issued upon exercise of outstanding options (a)	Weighted-average exercise price of outstanding options (b)	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	2,168,950	\$ 7.53	2,036,050
Total	2,168,950	\$ 7.53	2,036,050

## DESCRIPTION OF SECURITIES

The following descriptions do not purport to be complete and are subject to, and qualified in their entirety by reference to, the more complete descriptions thereof set forth in our certificate of incorporation, which we refer to as our charter, and our bylaws, each as amended to date.

### Authorization

Our authorized capital stock consists of 35,000,000 shares of capital stock. We are authorized to issue 30,000,000 shares of common stock, par value \$0.001 per share, and 5,000,000 shares of preferred stock, par value \$0.01 per share.

As of September 27, 2017, there were 5,599,178 shares of common stock outstanding and no shares of preferred stock issued and outstanding.

### Common Stock

*Dividend Rights.* Subject to preferences that may be applicable to any shares of our preferred stock that may be issued, the holders of our common stock are entitled to share ratably in such dividends as may be declared by our Board of Directors out of funds legally available therefor.

As a Delaware corporation, we may not declare and pay dividends on our capital stock if the amount paid exceeds an amount equal to the surplus which represents the excess of our net assets over paid-in-capital or, if there is no surplus, our net earnings for the current and/or immediately preceding fiscal year. Dividends cannot be paid from our net profits unless the paid-in-capital represented by the issued and outstanding stock having a preference upon the distribution of our assets at the market value is intact. Under applicable Delaware case law, dividends may not be paid on our capital stock if we become insolvent or the payment of the dividend will render us insolvent. To the extent we pay dividends and we are deemed to be insolvent or inadequately capitalized, a bankruptcy court could direct the return of any dividends.

*Voting Rights.* Each share of our common stock entitles its holder to one vote in the election of directors as well as all other matters to be voted on by stockholders.

*No Preemptive Rights.* Holders of our common stock do not have any preemptive rights to subscribe for additional shares on a pro rata basis or otherwise when additional shares are offered for sale by us.

*Liquidation Rights.* Subject to preferences that may be applicable to any shares of our preferred stock that may be issued, in the event of our liquidation, dissolution or winding up, the holders of our common stock are entitled to receive, pro rata, after payment of all of our debts and liabilities, all of our remaining assets available for distribution.

*Other Rights.* Holders of our common stock have no preferences or conversion or exchange rights. Shares of our common stock will not be liable for further calls or assessments by us and are not subject to redemption.

*Reverse Stock Split and Recapitalization.* All references in this prospectus to numbers of shares of common stock and per share information give retroactive effect to the 1-for-20 reverse split of our shares of common stock effected as of July 7, 2015. In connection with the reverse split, we reduced the number of our authorized shares of common stock from 200,000,000 to 30,000,000.

## **Preferred Stock**

The authorized preferred stock is available for issuance from time to time at the discretion of our Board of Directors without stockholder approval. The Board of Directors has the authority to prescribe for each series of preferred stock it establishes the number of shares in that series, the number of votes (if any) to which the shares in that series are entitled, the consideration for the shares in that series, and the designations, powers, preferences and other rights, qualifications, limitations or restrictions of the shares in that series. Depending upon the rights prescribed for a series of preferred stock, the issuance of preferred stock could have an adverse effect on the voting power of the holders of common stock and could adversely affect holders of common stock by delaying or preventing a change in control, making removal of our present management more difficult or imposing restrictions upon the payment of dividends and other distributions to the holders of common stock.

### **Series A Preferred Stock to be Issued as Part of this Offering**

Our board of directors has designated \_\_\_\_\_ shares of our preferred stock as Series A convertible preferred stock, or Series A preferred stock, none of which are currently issued and outstanding. The preferences and rights of the Series A preferred stock will be as set forth in a Certificate of Designation, or the Series A Certificate of Designation, filed as an exhibit to the registration statement of which this prospectus is a part.

The Series A preferred stock will be issued in certificated form.

In the event of a liquidation, the holders of Series A preferred stock are entitled to participate on an as-converted-to-common stock basis with holders of the common stock in any distribution of assets of the Company to the holders of the common stock. The Series A Certificate of Designation provides, among other things, that we shall not pay any dividends on shares of common stock (other than dividends in the form of common stock) unless and until such time as we shall have paid aggregate dividends of \$0.01 per share of Series A preferred stock to the holders of Series A preferred stock. Other than as set forth in the previous sentence, the Series A preferred stock shall share ratably with the common stock with respect to dividends on an as-converted basis. The Series A Certificate of Designation does not provide for any restriction on the repurchase of shares of Series A preferred stock by us while there is any arrearage in the payment of dividends on the Series A preferred stock. There are no sinking fund provisions applicable to the Series A preferred stock.

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our common stock is converted into or exchanged for securities, cash or other property, or we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding shares of common stock, then following such event, the holders of the Series A preferred stock will be entitled to receive upon conversion of the Series A preferred stock the same kind and amount of securities, cash or property that the holders would have received had they converted the Series A preferred stock immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the Series A preferred stock.

With certain exceptions, as described in the Series A Certificate of Designation, the Series A preferred stock has no voting rights. However, the Series A Certificate of Designation provides that, as long as any shares of Series A preferred stock remain outstanding, we shall not, without the affirmative vote of holders of a majority of the then-outstanding shares of Series A preferred stock, (a) alter or change adversely the powers, preferences or rights given to the holders of Series A preferred stock or alter or amend the Series A Certificate of Designation, (b) increase the number of authorized shares of Series A preferred stock or (c) amend our Certificate of Incorporation or other charter documents in any manner that adversely affects any rights of holders of Series A preferred stock.

Each share of Series A preferred stock is convertible at any time at the holder's option into a number of shares of common stock equal to \$1,000 divided by the Series A Conversion Price. The "Series A Conversion Price" is initially \$ and is subject to adjustment for reverse stock splits, stock splits, stock dividends, distributions, subdivisions and combinations. Notwithstanding the foregoing, the Series A Certificate of Designation further provides that we shall not effect any conversion of Series A preferred stock, with certain exceptions, to the extent that, after giving effect to an attempted conversion, the holder of shares of Series A preferred stock (together with such holder's affiliates, and any persons acting as a group together with such holder or any of such holder's affiliates) would beneficially own a number of shares of common stock in excess of 4.99% (or, at the election of the holder, 9.99%) of the shares of our common stock then outstanding after giving effect to such conversion (referred to as the Preferred Stock Beneficial Ownership Limitation); provided, however, that, upon notice to us, the holder may increase or decrease the Preferred Stock Beneficial Ownership Limitation, provided that in no event shall the Preferred Stock Beneficial Ownership Limitation exceed 9.99% and any increase in the Preferred Stock Beneficial Ownership Limitation will not be effective until 61 days following notice of such increase from the holder to us.

We do not intend to apply for listing of the Series A preferred stock on any securities exchange or other trading system.

### 2010 Equity Participation Plan; Options

Pursuant to the Plan, as of June 30, 2017, we were authorized to issue up to 4,250,000 shares of common stock pursuant to the grant of stock options and stock appreciation rights, restricted stock grants and stock bonus grants.

As of June 30, 2017, we had outstanding options under the Plan to purchase an aggregate of 3,018,700 shares of common stock, of which options for the purchase of 1,721,212 shares were then exercisable.

The following table presents information related to our outstanding stock options at June 30, 2017:

Options Outstanding	Options Exercisable	Options	
		Weighted Average Remaining Life	Exercisable Number of Options
Exercise Price	Outstanding Number of Options	In Years	Number of Options
\$3.10 - \$3.99	1,707,000	9.3	756,342

\$4.00 - \$4.99	1,234,200	6.8	887,370
\$5.00 - \$5.99	5,000	7.0	5,000
\$6.00 - \$19.99	37,500	6.5	37,500
\$20.00 - \$30.00	35,000	4.7	35,000
	3,018,700	7.8	1,721,212

Subsequent to June 30, 2017 and through October 4, 2017, we issued ten-year options to employees and an advisor to purchase an aggregate of 267,000 shares of common stock at exercise prices ranging between \$2.80 to \$3.35 per share. The options vest as follows: (i) options for the purchase of 89,004 shares vest on the one-year anniversary of the issuance date, (ii) options for the purchase of 89,002 shares vest on the two year anniversary of the issuance date and (iii) options for the purchase of 88,994 shares vest on the three year anniversary of the issuance date.

### **Warrants**

As of June 30, 2017, we had outstanding warrants to purchase an aggregate of 3,592,831 shares of common stock, all of which were then exercisable.

The following table presents information related to our outstanding warrants at June 30, 2017:

Warrants Outstanding	Warrants Exercisable	Warrants Weighted Average Remaining Life	Warrants Exercisable Number of Warrants
Exercise Price	Outstanding Number of Warrants	In Years	Warrants
\$4.00 - \$4.99	2,243,550	3.4	2,243,550
\$5.00 - \$5.99	1,184,243	3.0	1,184,243
\$6.00 - \$7.99	40,000	3.1	40,000
\$8.00 - \$9.99	2,500	2.4	2,500
\$10.00 - \$14.99	55,446	2.8	55,446
\$15.00 - \$19.99	38,559	2.2	38,559
\$20.00 - \$80.00	28,533	0.7	28,533
	3,592,831	3.2	3,592,831

Subsequent to June 30, 2017 and through October 4, 2017, we issued immediately vested five year warrants for the purchase of an aggregate of 95,118 shares of common stock at an exercise price of \$4.00 per share.

### Warrants to be Issued as Part of this Offering

The warrants offered in this offering will be issued in a form filed as an exhibit to the registration statement of which this prospectus is a part, and will be subject to a warrant agency agreement between us and the warrant agent, in a form filed as an exhibit to the registration statement of which this prospectus is a part. You should review a copy of the form of warrant and the form of warrant agency agreement for a complete description of the terms and conditions applicable to the warrants. The following is a brief summary of the warrants and is subject in all respects to the provisions contained in the form of warrant and the form of warrant agency agreement.

Each warrant represents the right to purchase one share of common stock at an exercise price of \$ ( % of the public offering price per share of common stock in this offering), subject to adjustment as described below. Each warrant may be exercised on or after the closing date of this offering through and including the close of business on the anniversary of the date of issuance.



The exercise price and the number of shares underlying the warrants are subject to appropriate adjustment in the event of reverse stock splits, stock splits and stock dividends on our common stock, or similar events affecting our common stock.

No fractional shares of common stock will be issued in connection with the exercise of a warrant. In lieu of fractional shares, the number of shares to be issued upon the exercise of a warrant shall be rounded up or down, as applicable, to the nearest whole number. A warrant may be transferred by a holder, upon surrender of the warrant, properly endorsed (by the holder executing an assignment in the form attached to the warrant).

The warrants are not exercisable by their holder to the extent (but only to the extent) that such holder or any of its affiliates would beneficially own in excess of 4.99% (or, at the election of the holder, 9.99%) of our common stock.

Amendments and waivers of the terms of the warrants may be made by us and the warrant agent without the consent of the holder so long as such amendment or waiver does not adversely affect the interests of the holders of the warrants as we and the warrant agent determine, for the purpose of curing any ambiguity, or curing, correcting or supplementing any defective provision contained in the warrant or changing any other provisions with respect to matters or questions arising under the warrants. All other amendments, including any amendment to increase the exercise price or shorten the exercise period, require the written consent of the placement agent and holders of a majority of the outstanding warrants.

**THE HOLDER OF A WARRANT WILL NOT POSSESS ANY RIGHTS AS A STOCKHOLDER UNDER THAT WARRANT UNTIL THE HOLDER EXERCISES THE WARRANT. THE WARRANTS MAY BE TRANSFERRED INDEPENDENT OF THE COMMON STOCK WITH WHICH THEY WERE ISSUED, SUBJECT TO APPLICABLE LAWS.**

### **Placement Agent's Warrant**

We have agreed to sell to the placement agent, for \$100, a warrant entitling the placement agent to purchase a number of shares of our common stock equal to 8% of the total number of shares of common stock sold in this offering to persons introduced to us by the placement agent, or introduced investors (and/or the number of shares of common stock issuable upon the conversion of Series A preferred stock sold in this offering to introduced investors) and the number of shares of common stock issuable upon the exercise of the warrants sold in this offering to introduced investors. The shares of common stock issuable upon exercise of this warrant are identical to those offered by this prospectus. The placement agent's warrant is exercisable at a per share exercise price equal to 125% of the public offering price of one share of common stock and warrant, commencing on a date which is six months from the date of effectiveness of the registration statement of which this prospectus is a part and expiring five years from such effective date in compliance with FINRA Rule 5110(f)(2)(G)(i). The exercise price and the number of shares underlying the warrants are subject to appropriate adjustment in the event of reverse stock splits, stock splits and stock dividends on our common stock, or similar events affecting our common stock. The placement agent's warrant does not have antidilution protections and is not transferable for 180 days from the date of issuance except as allowed by FINRA Rule 5110(g). See "Plan of Distribution – Placement Agent's Fees and Expenses."

### **Registration Rights**

Holders of 395,750 shares of our common stock and warrants for the purchase of 44,840 shares of our common stock have certain piggyback registration rights with regard to the resale of such shares and the shares underlying such warrants.

### **Certain Provisions Having Potential Anti-Takeover Effects**

*General.* The following is a summary of the material provisions of the General Corporation Law of the State of Delaware, which we refer to as the DGCL, and our charter and bylaws that address matters of corporate governance and the rights of stockholders. Certain of these provisions may delay or prevent takeover attempts not first approved by our Board of Directors (including takeovers which certain stockholders may deem to be in their best interests). These provisions also could delay or frustrate the removal of incumbent directors or the assumption of control by stockholders. The primary purpose of these provisions is to encourage negotiations with our management by persons

interested in acquiring control of our company. All references to the charter and bylaws are to our charter and bylaws in effect on the date of this prospectus.

*Authorized But Unissued Shares.* Delaware law does not require stockholder approval for any issuance of authorized shares. Authorized but unissued shares may be used for a variety of corporate purposes, including future public or private offerings to raise additional capital or to facilitate corporate acquisitions. One of the effects of the existence of authorized but unissued shares may be to enable our Board of Directors to issue shares to persons friendly to current management, which issuance could render more difficult or discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, and thereby protect the continuity of our management and possibly deprive the stockholders of opportunities to sell their shares of common stock at prices higher than prevailing market prices.

*Preferred Stock.* Under the terms of our charter, our Board of Directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our Board of Directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. The purpose of authorizing our Board of Directors to issue preferred stock and determine its rights and preferences is to provide flexibility and eliminate delays associated with a stockholder vote on specific issues. However, the ability of our Board of Directors to issue preferred stock and determine its rights and preferences may have the effect of delaying or preventing a change in control, as described above under “Description of Our Securities — Preferred Stock.”

*Classified Board.* As discussed above under “Management – Term of Office”, we have a classified Board of Directors consisting of three classes of directors. A classified board is one in which a certain number, but not all, of the directors are elected on a rotating basis each year. This method of electing directors makes changes in the composition of our Board more difficult, and thus a potential change in control may be a lengthier process. The existence of our classified Board reduces the possibility that a third party could effect an unsolicited change in control of our Board. Since our classified Board will increase the amount of time required for a takeover bidder to obtain control of us without the cooperation of the Board, even if the takeover bidder were to acquire a majority of our outstanding common stock, the existence of our classified Board could tend to discourage certain tender offers which stockholders might feel would be in their best interests. Our classified Board will likely allow management, if confronted by a proposal from a third party who has acquired a block of our common stock, sufficient time to review the proposal and appropriate alternatives to the proposal and to attempt to negotiate a better transaction, if possible, for our stockholders.