

PRESSURE BIOSCIENCES INC
Form S-1/A
March 19, 2012

As filed with the Securities and Exchange Commission on March 19, 2012

Registration No. 333-178335

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

AMENDMENT NO. 2

TO

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

pressure biosciences, Inc.

(Exact name of registrant as specified in its charter)

Massachusetts 3829 04-2652826
*(State or other jurisdiction of (Primary Standard Industrial (I.R.S. Employer
incorporation or organization) Classification Code Number) Identification No.)*

14 Norfolk Avenue

South Easton, Massachusetts 02375
(508) 230-1828

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

Richard T. Schumacher

President and Chief Executive Officer

Pressure BioSciences, Inc.

14 Norfolk Avenue

South Easton, Massachusetts 02375

(508) 230-1828

(Name, address, including zip code, and telephone number, including area code,

of agent for service)

Copies to:

Steven R. London, Esq.

Pepper Hamilton LLP

15th Floor, Oliver Street Tower

125 High Street

Boston, MA 02110-1817

(617) 204-5107

Approximate date of commencement of proposed sale to the public: As soon as practicable after this Registration Statement becomes effective.

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:

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please 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 to be 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 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, or a smaller reporting company. See the definitions of “large accelerated filer,” “accelerated filer” and “smaller reporting company” in Rule 12b-2 of the Exchange Act. (Check one):

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

CALCULATION OF REGISTRATION FEE

| Title of each class of securities to be registered | Proposed Maximum Aggregate Offering Price (1) | Amount of Registration Fee |
|--|---|----------------------------|
| Series E Convertible Preferred Stock, \$0.01 par value per share | | |
| Common Stock, \$0.01 par value per share, issuable upon conversion of Series E Convertible Preferred Stock (2) | | |
| Common Stock issuable in lieu of cash payment of dividends on the Series E Convertible Preferred Stock (2) | | |
| Warrants to purchase Common Stock (2) | | |
| Common Stock issuable upon exercise of Warrants Units (3) | | |
| Series A Junior Participating Preferred Stock Purchase Rights (4) | | |
| Total | \$8,000,000 | \$917 (5) |

(1) Estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended (the "Securities Act"). Pursuant to Rule 416 under the Securities Act, the shares being registered hereunder include such indeterminate number of shares of common stock as may be issuable with respect to the shares being registered hereunder as a result of share splits, share dividends, anti-dilution provisions, or similar transactions. No additional registration fee is being paid for these shares.

(2) No additional consideration is payable upon conversion of the Series E Convertible Preferred Stock, upon issuance of shares of common stock in lieu of cash payment of dividends on the Series E Convertible Preferred Stock or upon issuance of the warrants.

(3) Each unit consisting of (1) one share of Series E Preferred Stock and (2) one Class A Warrant to purchase shares of Common Stock, and (3) one Class B Warrant to purchase shares of Common Stock.

(4) This registration statement also relates to the rights to purchase shares of Series A Junior Participating Preferred Stock of the registrant, which, pursuant to the terms of the registrant's Rights Agreement dated February 27, 2003, as amended, will be attached to all shares of common stock issued until the occurrence of certain events prescribed in the Rights Agreement. The rights will not be exercisable and will be transferred with and only with shares of our common stock until the occurrence of certain events prescribed in the Rights Agreement.

(5) Previously paid.

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, as amended, or until the registration statement shall become effective on such date as the Commission, acting pursuant to Section 8(a), may determine.

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

PRELIMINARY PROSPECTUS

Subject to Completion, Dated March 19, 2012

Pressure BioSciences, Inc.

_____ Shares of 5% Series E Convertible Preferred Stock
(and _____ Shares of Common Stock underlying the 5% Series E Convertible Preferred Stock)
_____ Warrants
(and _____ Shares of Common Stock underlying the Warrants)

We are offering up to ____ shares of 5% Series E convertible preferred stock (the “Series E preferred shares”) and warrants to purchase up to _____ shares of common stock to purchasers in this offering. We are also offering up to _____ shares of our common stock issuable upon conversion of the Series E preferred shares and _____ shares of our common stock issuable upon exercise of the warrants. The Series E preferred shares and warrants will be sold in units for a purchase price equal to \$1,000 per unit. Each unit will consist of (1) one Series E preferred share, which is convertible into ____ shares of our common stock at a conversion price of \$____ per share of common stock, (2) one Class A Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit, exercisable at any time for a period of five years after the closing date at an exercise price of \$____ per share of common stock, and (3) one Class B Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit, exercisable at any time for a period of thirty months after the closing date at an exercise price of \$____ per share of common stock. The conversion price of the Series E preferred shares and the exercise price of the warrants are expected to be between ____% and ____% of the average volume weighted average price of our common stock for the five trading days prior to the date of pricing. The conversion of the Series E preferred shares and the exercise of the warrants are subject to certain ownership limitations described in this prospectus.

Until _____, 2015, the Series E preferred shares will have a stated dividend rate of 5% per year of the purchase price. The dividends will be paid quarterly in cash or, at our election and subject to certain conditions described in this prospectus, in shares of our common stock, which are also being offered by this prospectus. Thereafter, each holder of Series E preferred shares will be entitled to receive dividends equal, on an as-if-converted to common stock basis, to and in the same form as dividends actually paid on shares of common stock when, as, and if such dividends are paid on our common stock. We have never paid dividends on our common stock and do not intend to do so for the foreseeable future. If certain conditions described in the prospectus are met, we may, at our option, require the holders to convert the Series E preferred shares into shares of common stock. For a more detailed description of the Series E preferred shares, the warrants, and our shares of common stock, see the section entitled “Description of Securities” beginning on page 24 of this prospectus.

Our common stock is quoted on the NASDAQ Capital Market under the symbol “PBIO.” The last reported sale price of our shares of common stock on March 14, 2012 was \$0.59 per share. There is no established public trading market for the Series E preferred shares or the warrants being sold in this offering and we do not expect such a market to develop. We have retained Ladenburg Thalmann & Co. Inc. (the “Placement Agent”) to act as our exclusive Placement Agent in connection with this offering and to use its “best efforts” to solicit offers to purchase the units. The Placement Agent

may be deemed an underwriter within the meaning of Section 2(a)(11) of the Securities Act in connection with the offering. We intend to enter into a Placement Agent agreement with the Placement Agent, relating to the units offered by this prospectus. The Placement Agent is not purchasing or selling any of our units pursuant to this prospectus, nor are we requiring any minimum purchase or sale of any specific number of units. We will enter into a securities purchase agreement directly with investors in connection with the offering. Because there is no minimum offering amount required as a condition to the closing of this offering, the actual public offering amount, Placement Agent fees and proceeds to us are not presently determinable and may be substantially less than the maximum amounts set forth below. See “Plan of Distribution” beginning on page 32 of this prospectus for more information regarding this arrangement.

Investing in our securities involves a high degree of risk. See “Risk Factors” beginning on page 9 of this prospectus for more information.

| | Per Unit | Total | |
|---|-----------------|--------------|---|
| Public offering price | \$ | - | - |
| Placement Agent fees¹ | | - | - |
| Proceeds, before expenses, to us² | | - | - |

(1) For the purpose of estimating the Placement Agent’s fees, we have assumed that the Placement Agent will receive its maximum commission on all sales made in the offering. The Placement Agent will also be entitled to receive warrants and be reimbursed for certain expenses as described in the “Plan of Distribution” beginning on page 32 of this prospectus.

(2) We estimate total expenses of this offering, excluding the Placement Agent's fees and expenses, will be approximately \$300,000. For information concerning our obligation to reimburse the Placement Agent for certain of its expenses see "Plan of Distribution" beginning on page 32 of this prospectus.

This offering expires on the earlier of (i) the date upon which all of the units being offered have been sold, or (ii) _____, 2012. We expect that delivery of the units being offered pursuant to this prospectus will be made to purchasers on or about _____, 2012. In either event, the offering may be closed without further notice to you.

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.

LADENBURG THALMANN & CO. INC.

The date of this prospectus is March _____, 2012.

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You should rely only on the information contained in this prospectus. We have not, and the Placement Agent has not, authorized anyone to provide you with information different from that contained in this prospectus. If anyone provides you with different or inconsistent information, you should not rely on it. We are offering to sell, and seeking offers to buy, units only in jurisdictions where offers and sales are permitted. You should assume that the information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or of any sale of units. Our business, financial condition, results of operations, and prospects may have changed since that date.

Some of the industry and market data contained in this prospectus are based on independent industry publications or other publicly available information that we believe are reliable as of their respective dates, while other information is based on our internal sources.

Cautionary Note Regarding Forward-Looking Statements

The statements in this prospectus and in any “free writing prospectus” that we have authorized for use in connection with this offering, contain certain forward-looking statements within the meaning of Section 27A of the Securities Act, as amended, or the Securities Act, Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, and the Private Securities Litigation Reform Act of 1995, that are subject to risks and uncertainties. All statements other than statements of historical facts contained herein, including statements regarding our financial condition, operations, plans, objectives, goals, business strategies, future events, capital expenditures, future results, our competitive strengths, and the trends in our industry are forward-looking statements. The words “believe,” “may,” “could,” “estimate,” “continue,” “anticipate,” “intend,” “should,” “plan,” “expect,” “appear,” “future,” “likely,” “probably,” “s” “potential” and similar expressions, as they relate to us, are intended to identify forward-looking statements.

Forward-looking statements reflect only our current expectations. In any forward-looking statement, where we express an expectation or belief as to future results or events, such expectation or belief is expressed in good faith as of the date of such statement and believed to have a reasonable basis, but there can be no assurance that the statement of expectation or belief will be achieved or accomplished. Our actual results, performance or achievements could differ materially from those expressed in, or implied by, the forward-looking statements due to a number of uncertainties, many of which are unforeseen. Such forward-looking statements include statements relating to:

- our need for, and our ability to raise, additional equity or debt financing on acceptable terms, if at all;
- our need to take additional cost reduction measures, cease operations or sell our operating assets, if we are unable to obtain sufficient additional financing;
- our belief that we have sufficient liquidity to finance normal operations until April 2012;
- the options we may pursue in light of our financial condition;
- the amount of cash necessary to operate our business;
- the anticipated uses of grant revenue and the potential for increased grant revenue in future periods;
- our plans and expectations with respect to our pressure cycling technology (“PCT”) operations;
- our belief that PCT has achieved initial market acceptance in the mass spectrometry market;
- the expected increase in number of PCT units installed and the increase in revenues from the sale of consumable products and extended service contracts;
- the expected development and success of new product offerings;
- the potential applications for PCT;
- the expected expenses of, and benefits and results from, our research and development efforts;
- the expected benefits and results from our collaboration programs, strategic alliances and joint ventures;
- our expectation of obtaining additional research grants from the government in the future;

- our expectations of the results of our development activities funded by government research grants;
- the potential size of the market for biological sample preparation;
- general economic conditions;
- the anticipated future financial performance and business operations of our company;
- our reasons for focusing our resources in the market for genomic, proteomic, lipidomic, and small molecule sample preparation;
- the importance of mass spectrometry as a laboratory tool;
- the advantages of PCT over other current technologies as a method of sample extraction and for other applications;
- the capabilities and benefits of our PCT sample preparation system and consumable products;
- our belief that laboratory scientists will achieve results comparable to those reported to date by certain research scientists who have published or presented publicly on PCT;
- our ability to retain our core group of scientific, administrative, and sales personnel; and
- our ability to expand our customer base in sample preparation and for other applications of PCT.

You should read this prospectus and the documents that we reference herein, as well as the exhibits filed with the registration statement of which this prospectus forms a part, and the registration statement, completely and with the understanding that our actual future results may be materially different from what we expect. In addition, you should refer to the “Risk Factors” section beginning on page 9 of this prospectus. Because of these factors or others, the forward-looking statements in this prospectus and the registration statement may not prove to be accurate. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, if at all. Accordingly, you should not place undue reliance on these forward-looking statements.

You should assume that the information appearing in this prospectus is accurate as of the date on the front cover of this prospectus. All subsequent written and oral forward looking statements attributable to us or the persons acting on our behalf are expressly qualified in their entirety by the applicable cautionary statements. We undertake no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required by applicable law or regulation. We qualify all of the information presented in this prospectus and the registration statement, and particularly our forward-looking statements, by these cautionary statements.

Prospectus Summary

This summary highlights information about Pressure BioSciences and this offering contained elsewhere in this prospectus and is qualified in its entirety by the more detailed information and financial statements included elsewhere in this prospectus. You should read this entire prospectus carefully, including “Risk Factors”, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes included elsewhere in this prospectus, before making an investment decision. In this prospectus, unless otherwise specified or the context otherwise requires, the terms “we”, “us”, “our”, “the Company”, or “ours” refer to Pressure BioSciences, Inc. and its consolidated subsidiary.

About Pressure BioSciences

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming, and in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking, the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called pressure cycling technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant, and microbial sources.

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels - at controlled temperatures and specific time intervals - to rapidly and repeatedly control the interactions of bio-molecules, such as DNA, RNA, proteins, lipids, and small molecules. Our laboratory instrument, the Barocycler®, and our internally developed consumables product line, including PULSE (“Pressure Used to Lyse Samples for Extraction”) Tubes, other processing tubes, and application specific kits (which include consumable products and reagents) together make up our PCT Sample Preparation System, or PCT SPS.

We hold 14 United States and 10 foreign patents covering multiple applications of PCT in the life sciences field. Our pressure cycling technology employs a unique approach that we believe has the potential for broad use in a number of established and emerging life sciences areas, including;

- Biological sample preparation, which includes sample preparation for genomic, proteomic, lipidomic, metabolomic, and small molecule studies;
- pathogen inactivation;
- protein purification;
- control of chemical (particularly enzymatic) reactions; and
- immunodiagnosics (clinical laboratory testing).

Within the broad field of biological sample preparation, we focus the majority of our product development efforts in three specific areas: mass spectrometry, forensics, and histology.

· *Mass Spectrometry.* A mass spectrometer is a laboratory instrument used in the analysis of biological samples in life sciences research. We believe that mass spectrometry is a multi-billion dollar market, and that PCT offers significant advantages in speed and quality compared to current techniques used in the preparation of samples for mass spectrometry analysis.

· *Forensics.* The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas and Florida International University have reported improvements in DNA yield from forensic samples (e.g., bone, hair) using PCT in the sample preparation process. We believe that PCT may be capable of differentially extracting DNA from sperm and (female) epithelial cells in swabs collected from rape victims and stored in rape kits. We also believe that there are many completed but untested rape kits that remain untested for reasons such as cost, time, and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing quality, safety, and speed.

Histology. The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is formalin-fixation followed by paraffin-embedding (“FFPE”). We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

Since we began operations as Pressure BioSciences in February 2005, we have installed 209 Barocycler instruments through December 31, 2011, of which 132 have been purchased or are currently being leased by our customers. Our customers include researchers at academic laboratories, government agencies, biotechnology, pharmaceutical and other life sciences companies in the United States, and distribution partners in foreign countries.

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-------------------------|------|------|------|------|------|------|------|
| Units installed in year | 5 | 8 | 20 | 41 | 54 | 50 | 31 |

We expect the number of units installed will increase in future periods as we continue to gain commercial awareness of our technology, although we may experience some delays in customer purchases due to current economic conditions in the United States and globally. We continue to expect that some portion of future installations will be for the smaller, lower priced, Barocycler NEP2320 model and some will be placed under lease or short-term rental agreements. Therefore, we expect that the average revenue per installation may continue to fluctuate from period to period as we continue to drive our installed base and commercialize PCT. We also expect that as we continue to expand the installed base of Barocycler instruments in the field, we will realize increasing revenue from the sale of consumable products and extended service contracts. In the short-term, these recurring revenue streams may continue to fluctuate from period to period.

Our business is subject to a number of risks of which you should be aware before investing in our securities, such as:

History of Operating Losses - We have experienced significant operating losses in the area of PCT in each period since we began investing resources in PCT. These losses have resulted principally from research and development, sales and marketing, and general and administrative expenses associated with the development of our PCT business. We expect to continue to incur operating losses until sales of our PCT products increase substantially. During the year ended December 31, 2011, we recorded a net loss to common shareholders of (\$5,107,661) or (\$0.77) per share, as compared to (\$3,630,826) or (\$1.35) per share in 2010.

Going Concern from Independent Registered Public Accounting Firm - The audit report issued by our independent registered public accounting firm on our audited consolidated financial statements for the fiscal year ended December 31, 2011 contains an explanatory paragraph regarding our ability to continue as a going concern. The audit report states that our auditing firm has substantial doubt in our ability to continue as a going concern due to the risk that we may not have sufficient cash and liquid assets at December 31, 2011 to cover our operating and capital requirements for the next twelve-month period; and if sufficient cash cannot be obtained, we will have to substantially

alter, or possibly even discontinue, operations. Based on our current projections, including equity financing subsequent to December 31, 2011, we believe our current cash resources will enable us to extend our cash resources until April 2012.

· *Possible NASDAQ Delisting* - Our common stock may be delisted from The NASDAQ Capital Market, which could negatively impact the price of our common stock, liquidity for our stockholders and our ability to access the capital markets. We received letters from the NASDAQ Stock Market LLC, or NASDAQ, on April 13, 2011, advising us that our stockholders' equity for the year ended December 31, 2010 had fallen below the minimum requirement for continued inclusion on The NASDAQ Capital Market and on August 15, 2011, advising us that, for the previous 30 consecutive business days, the bid price of our common stock had closed below the minimum \$1.00 per share requirement for continued inclusion on The NASDAQ Capital Market. On October 4, 2011, we received written notification from the Listing Qualifications Department of NASDAQ stating that our common stock is subject to delisting from The NASDAQ Capital Market, pending our opportunity to request a hearing before a NASDAQ Listing Qualifications Panel (the "Panel"). We attended a hearing before the Panel on November 17, 2011 to consider our plan to bring our common stock into compliance with the stockholders' equity listing standard and the minimum \$1.00 per share requirement.

On December 7, 2011, we received notice that the Panel granted our request for continued listing on The NASDAQ Capital Market subject to, among other things, our demonstration of compliance with the applicable minimum stockholders' equity requirement of \$2.5 million by February 29, 2012. On February 15, 2012, we received notice from NASDAQ that the bid price of our common stock had not regained compliance with the minimum \$1.00 per share requirement as of February 13, 2012, 180 calendar days after the NASDAQ's August 15, 2011 notice. We submitted a revised plan of compliance for the Panel's review and received a further extension of time to comply with the stockholders' equity requirement by March 23, 2012 and the minimum bid price requirement for a minimum of ten consecutive business days by April 9, 2012. Our plan of compliance includes, among other things, completing this offering and the possibility of effecting a reverse stock split if necessary. While we are diligently working to regain compliance with all applicable NASDAQ listing criteria, including the minimum stockholders' equity and minimum bid price of \$1.00 per share, there can be no assurance that the Panel will grant our request for a further extension of time for continued listing or that we will be able to successfully complete our plan to achieve compliance.

These risks and the other risks that we face are more fully described under the heading "Risk Factors," which you should review carefully before you decide to buy our securities.

Corporate Information

We were incorporated in the Commonwealth of Massachusetts in August 1978 as Boston Biomedica, Inc. In September 2004, we completed an asset sale of the Boston Biomedica core business units and began to focus exclusively on the development and commercialization of our PCT platform. Following this change in business strategy, we changed our legal name from Boston Biomedica, Inc. to Pressure BioSciences, Inc. and our NASDAQ symbol from BBII to PBIO.

Our principal executive offices are located at 14 Norfolk Avenue, South Easton, Massachusetts 02375. Our telephone number is (508) 230-1828 and our website address is www.pressurebiosciences.com. Information included or referred to on our website is not a part of this prospectus.

The Offering

Our shares of common stock are quoted on the NASDAQ Capital Market under the symbol “PBIO”. On March 14, 2012, the last sale price of our shares of common stock as reported on the NASDAQ Capital Market was \$0.59 per share.

| | |
|---------------------------|--|
| Issuer | Pressure BioSciences, Inc. |
| Units | Each unit consists of (1) one Series E preferred share which is convertible into ___ shares of our common stock; (2) one Class A Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit; and (3) one Class B Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit. |
| Unit Price | \$1,000 per unit. |
| Series E Preferred Shares | <p>Each Series E preferred share is convertible, at the option of the holder, into ___ shares of our common stock and has a stated value and liquidation preference of \$1,000 per share. We have the right to require the holders to convert the Series E preferred shares in certain circumstances described in this prospectus. Except for specified actions and except as may be provided by Massachusetts law, the Series E preferred shares will not have voting rights. See the section entitled “Description of Series E Preferred Shares” beginning on page 28 of this prospectus.</p> <p>Until _____, 2015, each holder of the Series E preferred shares will be entitled to receive dividends at the rate of 5% per year of the stated value for each Series E preferred share held by such holder payable quarterly on January 1, April 1, July 1 and October 1, beginning on the first such date after the original issue date, and on each conversion date. Except in limited circumstances (including a failure to meet certain conditions related to our equity described in this prospectus under the section entitled “Description of Series E Preferred Shares—Conversion” beginning on page ___), we can elect to pay the dividends in cash or in duly authorized, validly issued, fully paid and non-assessable shares of common stock, or a combination thereof. If the equity conditions are not met, we must pay the dividends in cash. If the equity conditions have been met and we choose to pay the dividends in shares of common stock, the shares of common stock used to pay the dividends will be valued at 85% of the average volume weighted average price of our shares of common stock for the 20 consecutive trading days ending on the trading day immediately prior to the applicable dividend payment date. From and after _____, 2015, each holder of Series E preferred shares will be entitled to receive dividends equal, on an as-if-converted to common stock basis, to and in the same form as dividends actually paid on shares of common stock when, as, and if such dividends are paid on such shares of common stock.</p> |

Dividends

7

Make-Whole Payment

In the event a holder converts his, her or its Series E preferred shares, or we elect a forced conversion of the Series E preferred shares as described below, prior to _____, 2015, we must pay to the holder in cash, or at our option, subject to satisfaction of the equity conditions, in shares of common stock valued as described below, or a combination of cash and shares of common stock, with respect to the Series E preferred shares so converted, an amount equal to \$150 per \$1,000 of the stated value of the Series E preferred shares, less the amount of any dividends paid in cash or in shares of common stock on such Series E preferred shares on or before the date of conversion (the "Make-Whole Payment"). Shares of common stock used to pay all or a portion of the Make-Whole Payment will be valued at 85% of the average volume weighted average price for the 20 consecutive trading days ending on the trading day immediately prior to the conversion date requiring the Make-Whole Payment.

\$.__ per share, subject to customary adjustments as described in this prospectus.

Conversion Price of Series E preferred shares

Full Ratchet Anti-Dilution Protection for the Series E preferred shares

The conversion price of the Series E preferred shares is also subject to adjustment in the event that we issue any shares of common stock or common stock equivalents at a per share price that is lower than the conversion price for the Series E preferred shares then in effect, subject to customary exclusions. Upon any such issuance at such lower price, the conversion price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued, the full ratchet adjustment. If the average volume weighted average price of our common stock for 20 trading days during any consecutive 30 trading day period beginning after the original issue date exceeds 250% of the then effective conversion price, the full ratchet adjustment shall automatically expire.

See the section entitled "Description of Series E Preferred Shares" beginning on page 28 of this prospectus.

Shares of common stock underlying Series E preferred shares

Based on the conversion price of \$.__ per share, each Series E preferred share is convertible into ____ shares of our common stock and all ____ Series E preferred shares offered hereby would be converted into an aggregate of ____ shares of our common stock.

Forced
Conversion

If the average volume weighted average price of our common stock for 20 trading days during any consecutive 30 trading day period beginning after the original issue date (a "Threshold Period"), exceeds 250% of the then effective conversion price, we may deliver a written notice (a "forced conversion notice") to all holders of Series E preferred shares requiring each holder to convert all or part of such holder's Series E preferred shares plus all accrued but unpaid dividends thereon and other amounts due in respect of the Series E preferred shares, into shares of common stock at the then current conversion ratio. We may not deliver a forced conversion notice, and such notice shall not be effective if delivered, unless certain equity conditions (as described herein) have been met on each of the 30 trading days during the applicable Threshold Period and through the first trading day after the date that conversion shares issuable pursuant to a forced conversion are actually delivered to the holders pursuant to a forced conversion notice.

Liquidation
Preference

In the event of our liquidation or winding up, the holders of the Series E preferred shares, together with the holders of our outstanding Series D Convertible Preferred Stock, on a pari passu basis, shall be entitled to receive, prior and in preference to the holders of our common stock and any series of preferred stock ranking junior to the Series E preferred shares, including our Series C Convertible Preferred Stock, an amount (the "Liquidation Amount") equal to \$1,000 per Series E preferred share then held by such holders, plus all accrued but unpaid dividends. The Series E preferred shares will rank junior to all of our existing and future indebtedness .

Class A
Warrant
terms

Each unit includes a Class A Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit, which equals 50% of the shares of common stock underlying each Series E preferred share. Class A Warrants will entitle the holder to purchase shares of common stock for an exercise price equal to \$_.__ per share, subject to adjustment as described in this prospectus. Class A Warrants are exercisable immediately after the date of issuance and expire five years after the date of issuance. See the section entitled "Description of Class A Warrants" beginning on page 26 of this prospectus.

Class B
Warrant
terms

Each unit includes a Class B Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit, which equals 50% of the shares of common stock underlying each Series E preferred share. Class B Warrants will entitle the holder to purchase shares of common stock for an exercise price equal to \$_.__ per share, subject to adjustment as described in this prospectus. Class B Warrants are exercisable immediately after the date of issuance and expire thirty months after the date of issuance. See the section entitled "Description of Warrants" beginning on page 26 of this prospectus.

Prohibitions on
Down Round
Financings

The Class A Warrants and Class B Warrants each provide that, subject to customary exclusions, until the respective warrants have expired or been exercised, without the prior written consent of the holders of two-thirds of the respective warrants, we will not be permitted to issue any shares of common stock or common share equivalents at an effective price per share below the exercise price of the respective warrants. If the purchaser of units in this offering converts, sells, transfers or otherwise disposes of any Series E preferred shares, then these prohibitions in the Class A Warrants and Class B Warrants against the issuance of common stock or common share equivalents at an effective price per share below the exercise price of the respective warrants will terminate with respect to that portion of the warrants which equals the portion of the Series E preferred shares so converted, sold, transferred or otherwise disposed of by such purchaser. Additionally, if the average volume weighted average price of our common stock for 20 trading days during any consecutive 30 trading day period beginning after the original issue date of the Class A Warrants and Class B Warrants exceeds 250% of the then effective conversion price of the Series E preferred shares, the prohibition against the issuance of common stock or common share equivalents at an effective price per share below the exercise price of the respective warrants will terminate with respect to all of the warrants.

Limitations on
Exercise or
Conversion

Notwithstanding anything herein to the contrary, we will not permit the conversion of the Series E preferred shares or exercise of the Class A Warrants or Class B Warrants by any holder, if after such conversion or exercise such holder would beneficially own more than 4.99% (or 9.99% as elected by the holder pursuant to the terms of the Series E preferred shares or the Class A Warrants or Class B Warrants, as applicable) of the shares of common stock then outstanding.

Shares of common
stock outstanding
before this offering
Shares of common
stock to be
outstanding after
this offering
including shares of
common stock
underlying Series E
Preferred Shares
included in Units

8,499,898 shares.

_____ shares, excluding shares issuable upon exercise of the Class A Warrants and Class B Warrants.

Assuming all units are sold, we estimate that the net proceeds to us from this offering will be approximately \$__ million. We intend to use the net proceeds from this offering to support a comprehensive sales distribution strategy of our current products and the development and commercialization of future products, to fund our research and development activities, for general working capital needs, for the repayment of up to \$200,000 in principal amount outstanding under promissory notes, and to fund dividends paid in cash on our Series C Convertible Preferred Stock and on the Series E preferred shares. See “Use of Proceeds.”

Use of Proceeds

Risk Factors

You should carefully read and consider the information set forth under “Risk Factors,” together with all of the other information set forth in this prospectus, before deciding to invest in the units offered by this prospectus.

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The number of shares of common stock outstanding before and after the offering is based on 8,499,898 shares issued and outstanding as of March 14, 2012 and excludes:

- 1,555,500 shares of common stock issuable upon exercise of options outstanding at March 14, 2012 with a weighted average exercise price of \$2.17 per share;
- 267,500 shares of common stock reserved for future grants and awards under our equity incentive plans as of March 14, 2012;
- 5,261,438 shares of common stock issuable upon exercise of outstanding warrants issued prior to this offering;
- _____ shares of common stock issuable upon exercise of the Class A Warrants and Class B Warrants to be issued as part of the units in connection with this offering; and
- 1,342,519 shares of common stock issuable upon conversion of our outstanding Series C Convertible Preferred Stock and Series D Convertible Preferred Stock.

In connection with our sale of units consisting of Series C Preferred Stock and warrants to purchase shares of our common stock in April and June of 2011 (the "Series C Units"), we agreed that, if we completed an equity financing within 12 months after the initial closing of the Series C Units (the "Next Financing"), then each purchaser of Series C Units would be entitled to exchange all, but not less than all, of his, her or its Series C Units for the equity securities issued in such equity financing (the "Next Financing Securities"); provided that the exchange of the purchaser's Series C Units for the equity securities is permitted under NASDAQ rules and regulations then in effect. The number of Next Financing Securities into which a purchaser's Series C Units may be exchanged is determined by dividing (a) the aggregate per unit purchase price at which the Series C Units being exchanged were issued, by (b) the price per Next Financing Security at which such securities were issued in the Next Financing. We understand from the holders of the Series C Units that such holders intend to exercise their right to exchange all of their Series C Units for the units we offered in our February 2012 private placement. Assuming that each holder of Series C Units elects to exchange their Series C Units for the units offered in the February 2012 private placement, and further assuming that the exchange of all such Series C Units is permitted under applicable NASDAQ rules and regulations, an aggregate of 1,372,243 shares of common stock and warrants to purchase 686,121 shares of common stock will be issued to the holders of Series C Units. The number of shares of common stock outstanding before and after the offering and the number of excluded shares in the bullet points set forth above do not reflect the issuance of these additional shares of common stock and warrants.

Risk Factors

You should carefully consider the risks described below before making an investment decision. You should also refer to the other information in this prospectus, including our financial statements and the related notes thereto. The risks and uncertainties described below are not the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently deem immaterial also may impair our business operations. If any of the following risks actually occur, our business, results of operations and financial condition could suffer. In that event the trading price of our shares of common stock could decline, and you may lose all or part of your investment in the units. The risks discussed below also include forward-looking statements and our actual results may differ substantially from those discussed in these forward-looking statements.

Risks Related to Our Business

As of February 15, 2012, we had available cash of approximately \$430,000. We require additional capital to fund our operations and cannot ensure that additional capital will be available on acceptable terms or at all.

We have experienced negative cash flows from operations from our pressure cycling technology business since we commenced our pressure cycling technology operations. As of February 15, 2012, we had available cash of approximately \$430,000 which based on current projections, will be sufficient to fund operations until April 2012. We need substantial additional capital to fund our operations in periods beyond April 2012.

We have received an opinion from our independent registered public accounting firm expressing doubt regarding our ability to continue as a going concern.

The audit report issued by our independent registered public accounting firm on our audited consolidated financial statements for the fiscal year ended December 31, 2011 contains an explanatory paragraph regarding our ability to continue as a going concern. The audit report states that our auditing firm has substantial doubt in our ability to continue as a going concern due to the risk that we may not have sufficient cash and liquid assets at December 31, 2011 to cover our operating and capital requirements for the next twelve-month period; and if sufficient cash cannot be obtained, we would have to substantially alter, or possibly even discontinue, operations. The accompanying consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Management has developed a plan to continue operations. This plan includes further reductions in expenses and obtaining equity or debt financing including our most recently completed financing in February 2012, in which we sold units consisting of shares of restricted common stock and warrants to purchase shares of common stock for net proceeds of approximately \$765,000, which included the conversion of \$387,547 in principal and accrued interest from convertible promissory notes. Although we have successfully completed equity financings and reduced expenses in the past, we cannot assure you that our plans to address these matters in the future will be successful.

Such an opinion from our independent registered accounting firm could adversely affect our ability to obtain additional financing on favorable terms, if at all, as such an opinion may cause investors to have reservations about our long-term prospects, and may adversely affect our relationships with customers. There can be no assurance that our auditing firm will not qualify its opinion in the future. If we cannot successfully continue as a going concern, our stockholders may lose their entire investment in us.

We will need a greater amount of additional capital than we currently expect to need if we experience unforeseen costs or expenses, unanticipated liabilities or delays in implementing our business plan, developing our products and achieving commercial sales.

We need substantial capital to implement our sales distribution strategy for our current products and to develop and commercialize future products using our pressure cycling technology products and services in the sample preparation area, as well as for applications in other areas of life sciences. Our capital requirements will depend on many factors, including but not limited to:

- the problems, delays, expenses, and complications frequently encountered by early-stage companies;
- market acceptance of our pressure cycling technology products and services for sample preparation;
- the success of our sales and marketing programs; and
- changes in economic, regulatory or competitive conditions in the markets we intend to serve.

To satisfy our potential capital requirements to cover the cost of implementing our sales distribution strategy for our current products and services and to develop and commercialize future products and services using our pressure cycling technology relating to sample preparation and other life science applications, we need to raise additional funds in the public or private capital markets. We may seek to raise any necessary additional funds through the issuance of warrants, equity or debt financings or executing collaborative arrangements with corporate partners or other sources, which may be dilutive to existing stockholders or otherwise have a material effect on our current or future business prospects. Additional financing may not be available to us on a timely basis, if at all, or on terms acceptable to us. If adequate funds are not available or if we fail to obtain acceptable additional financing, we may be required to:

- severely limit or cease our operations or otherwise reduce planned expenditures and forego other business opportunities, which could harm our business;
- obtain financing with terms that may have the effect of substantially diluting or adversely affecting the holdings or the rights of the holders of our capital stock; or
- obtain funds through arrangements with future collaboration partners or others that may require us to relinquish rights to some or all of our technologies or products.

Our actual results and performance, including our ability to raise additional capital, may be adversely affected by current economic conditions.

Our actual results and performance could be adversely affected by the current economic conditions in the global economy, which continue to pose a risk to the overall demand for our products from our customers who may elect to defer or cancel purchases of, or decide not to purchase, our products in response to continuing tightness in the credit markets, negative financial news and general uncertainty in the economy. In addition, our ability to obtain additional financing, on acceptable terms, if at all, may be adversely affected by the uncertainty in the current economic climate.

We have a history of operating losses, anticipate future losses and may never be profitable.

We have experienced significant operating losses in the area of PCT in each period since we began investing resources in PCT. These losses have resulted principally from research and development, sales and marketing, and general and administrative expenses associated with the development of our PCT business. During the year ended December 31, 2011, we recorded a net loss to common shareholders of (\$5,107,661) or (\$0.77) per share, as compared to

(\$3,630,826) or (\$1.35) per share in 2010. We expect to continue to incur operating losses until sales of our PCT products increase substantially. We cannot be certain when, if ever, we will become profitable. Even if we were to become profitable, we might not be able to sustain such profitability on a quarterly or annual basis.

Our financial results depend on revenues from our pressure cycling technology products and services, and from government grants.

We currently rely on revenues from our pressure cycling technology products and services in the sample preparation area and from revenues derived from grants awarded to us by governmental agencies, such as the National Institutes of Health. We have been unable to achieve market acceptance of our product offerings to the extent necessary to achieve significant revenue. Competition for government grants is very intense, and we can provide no assurance that we will continue to be awarded grants in the future. If we are unable to increase revenues from sales of our pressure cycling technology products and services and government grants, our business will fail.

We may be unable to obtain market acceptance of our pressure cycling technology products and services.

Many of our initial sales of our pressure cycling technology products and services have been to our collaborators, following their use of our products in studies undertaken in sample preparation for genomics, proteomics and small molecules studies. Our technology requires scientists and researchers to adopt a method of sample extraction that is different than existing techniques. Our PCT sample preparation system is also more costly than existing techniques. Our ability to obtain market acceptance will depend, in part, on our ability to demonstrate to our potential customers that the benefits and advantages of our technology outweigh the increased cost of our technology compared to existing methods of sample extraction. If we are unable to demonstrate the benefits and advantages of our products and technology as compared to existing technologies, we will not gain market acceptance and our business will fail.

Our business may be harmed if we encounter problems, delays, expenses, and complications that often affect companies that have not achieved market acceptance.

Our pressure cycling technology business continues to face challenges in achieving market acceptance. If we encounter problems, delays, expenses and complications, many of which may be beyond our control or may harm our business or prospects. These include:

- unanticipated problems and costs relating to the development, testing, production, marketing, and sale of our products;
- delays and costs associated with our ability to attract and retain key personnel;
- availability of adequate financing; and
- competition.

The sales cycle of our pressure cycling technology products is lengthy. We have incurred and may continue to incur significant expenses and we may not generate any significant revenue related to those products.

Many of our current and potential customers have required between three and six months or more to test and evaluate our pressure cycling technology products. This increases the possibility that a customer may decide to cancel its order or otherwise change its plans, which could reduce or eliminate our sales to that potential customer. As a result of this lengthy sales cycle, we have incurred and may continue to incur significant research and development, selling and marketing, and general and administrative expense related to customers from whom we have not yet generated any revenue from our products, and from whom we may never generate the anticipated revenue if a customer is not satisfied with the results of the evaluation of our products or if a customer cancels or changes its plans.

Our business could be harmed if our products contain undetected errors or defects.

We are continuously developing new, and improving our existing, pressure cycling technology products in sample preparation and we expect to do so in other areas of life sciences depending upon the availability of our resources. Newly introduced products can contain undetected errors or defects. In addition, these products may not meet their performance specifications under all conditions or for all applications. If, despite internal testing and testing by our collaborators, any of our products contain errors or defects or fail to meet customer specifications, then we may be required to enhance or improve those products or technologies. We may not be able to do so on a timely basis, if at all, and may only be able to do so at considerable expense. In addition, any significant reliability problems could result in adverse customer reaction, negative publicity or legal claims and could harm our business and prospects.

Our success may depend on our ability to manage growth effectively.

Our failure to manage growth effectively could harm our business and prospects. Given our limited resources and personnel, growth of our business could place significant strain on our management, information technology systems, sources of manufacturing capacity and other resources. To properly manage our growth, we may need to hire additional employees and identify new sources of manufacturing capabilities. Failure to effectively manage our growth could make it difficult to manufacture our products and fill orders, as well as lead to declines in product quality or increased costs, any of which would adversely impact our business and results of operations.

Our success is substantially dependent on the continued service of our senior management.

Our success is substantially dependent on the continued service of our senior management. We do not have long-term employment agreements with our key employees. The loss of the services of any of these individuals could make it more difficult to successfully operate our business and achieve our business goals. In addition, our failure to retain existing engineering, research and development and sales personnel could harm our product development capabilities and customer and employee relationships, delay the growth of sales of our products and could result in the loss of key information, expertise or know-how.

We may not be able to hire or retain the number of qualified personnel, particularly engineering and sales personnel, required for our business, which would harm the development and sales of our products and limit our ability to grow.

Competition in our industry for senior management, technical, sales, marketing, finance and other key personnel is intense. If we are unable to retain our existing personnel, or attract and train additional qualified personnel, either because of competition in our industry for such personnel or because of insufficient financial resources, our growth may be limited. Our success also depends in particular on our ability to identify, hire, train and retain qualified engineering and sales personnel with experience in design, development and sales of laboratory equipment.

Our reliance on a single third party for all of our manufacturing, and certain of our engineering, and other related services could harm our business.

We currently rely on Source Scientific, LLC (“Source Scientific”), a third party contract manufacturer, to manufacture our PCT instrumentation, provide engineering expertise, and manage the majority of our sub-contractor supplier relationships. Because of our dependence on one manufacturer, our success will depend, in part, on the ability of Source Scientific to manufacture our products cost effectively, in sufficient quantities to meet our customer demand, if

and when such demand occurs, and meeting our quality requirements. If Source Scientific experiences manufacturing problems or delays, or if Source Scientific decides not to continue to provide us with these services, our business may be harmed. While we believe other contract manufacturers are available to address our manufacturing and engineering needs, if we find it necessary to replace Source Scientific, there will be a disruption in our business and we would incur additional costs and delays that would harm our business.

Our failure to manage current or future alliances or joint ventures effectively may harm our business.

We have entered into business relationships with three distribution partners and one co-marketing partner, and we may enter into additional alliances, joint ventures or other business relationships to further develop, market and sell our pressure cycling technology product line. We may not be able to:

- identify appropriate candidates for alliances, joint ventures or other business relationships;
- assure that any candidate for an alliance, joint venture or business relationship will provide us with the support anticipated;
- successfully negotiate an alliance, joint venture or business relationship on terms that are advantageous to us; or
- successfully manage any alliance or joint venture.

Furthermore, any alliance, joint venture or other business relationship may divert management time and resources. Entering into a disadvantageous alliance, joint venture or business relationship, failing to manage an alliance, joint venture or business relationship effectively, or failing to comply with any obligations in connection therewith, could harm our business and prospects.

We may not be successful in growing our international sales.

We cannot guarantee that we will successfully develop our international sales channels to enable us to generate significant revenue from international sales. We currently have three international distribution agreements that cover Japan, Austria, and Germany. We have generated limited sales to date from international sales and cannot guarantee that we will be able to increase our sales. As we expand, our international operations may be subject to numerous risks and challenges, including:

- multiple, conflicting and changing governmental laws and regulations, including those that regulate high pressure equipment;
- reduced protection for intellectual property rights in some countries;
- protectionist laws and business practices that favor local companies;
- political and economic changes and disruptions;
- export and import controls;
- tariff regulations; and
- currency fluctuations.

Our operating results are subject to quarterly variation. Our operating results may fluctuate significantly from period to period depending on a variety of factors, including the following:

- our ability to increase our sales of our pressure cycling technology products for sample preparation on a consistent quarterly or annual basis;
- the lengthy sales cycle for our products;
- the product mix of the Barocycler instruments we install in a given period, and whether the installations are completed pursuant to sales, rental or lease arrangements, and the average selling prices that we are able to command for our products;

- our ability to manage our costs and expenses;
- our ability to continue our research and development activities without unexpected costs and expenses;
- and
- our ability to comply with state and federal regulations without incurring unexpected costs and expenses.

Our instrumentation operates at high pressures and may therefore become subject to certain regulation in the European Community. Regulation of high pressure equipment may limit or hinder our development and sale of future instrumentation.

Our Barocycler instruments operate at high pressures. If our Barocycler instruments exceed certain pressure levels, our products may become subject to the European Pressure Equipment Directive, which requires certain pressure equipment meet certain quality and safety standards. We do not believe that we are subject to this directive because our Barocycler instruments are currently below the threshold documented in the text of the directive. If our interpretation were to be challenged, we could incur significant costs defending the challenge, and we could face production and selling delays, all of which could harm our business.

We expect that we will be subject to regulation in the United States, such as the Food and Drug Administration (“FDA”), and overseas, if and when we begin to invest more resources in the development and commercialization of PCT in applications outside of sample preparation.

Our current pressure cycling technology products in the area of sample preparation are not regulated by the FDA. Applications in which we intend to develop and commercialize pressure cycling technology, such as protein purification, pathogen inactivation and immunodiagnostics, are expected to require regulatory approvals or clearances from regulatory agencies, such as the FDA, prior to commercialization. We expect that obtaining these approvals or clearances will require a significant investment of time and capital resources and there can be no assurance that such investments will receive approvals or clearances that would allow us to commercialize the technology for these applications.

If we are unable to protect our patents and other proprietary technology relating to our pressure cycling technology products, our business will be harmed.

Our ability to further develop and successfully commercialize our products will depend, in part, on our ability to enforce our patents, preserve our trade secrets, and operate without infringing the proprietary rights of third parties. We currently have 14 United States patents issued and several pending patent applications for our pressure cycling technology. Several of these have been followed up with foreign applications, for which three patents have been issued in Europe and three patents have been issued in Australia, two in Japan, and two in Canada. We expect to file additional foreign applications in the future relating to our pressure cycling technology, and we will file additional United States applications as we develop new patentable intellectual property. The patents which have been issued expire between 2015 and 2027.

There can be no assurance that:

- any patent applications filed by us will result in issued patents;
- patent protection will be secured for any particular technology;

- any patents that have been or may be issued to us will be valid or enforceable;
- any patents will provide meaningful protection to us;
- others will not be able to design around our patents; or
- our patents will provide a competitive advantage or have commercial value.

The failure to obtain adequate patent protection would have a material adverse effect on us and may adversely affect our ability to enter into, or affect the terms of, any arrangement for the marketing or sale of any product.

Our patents may be challenged by others.

We could incur substantial costs in patent proceedings, including interference proceedings before the United States Patent and Trademark Office, and comparable proceedings before similar agencies in other countries, in connection with any claims that may arise in the future. These proceedings could result in adverse decisions about the patentability of our inventions and products, as well as about the enforceability, validity, or scope of protection afforded by the patents.

If we are unable to maintain the confidentiality of our trade secrets and proprietary knowledge, others may develop technology and products that could prevent the successful commercialization of our products.

We rely on trade secrets and other unpatented proprietary information in our product development activities. To the extent we rely on trade secrets and unpatented know-how to maintain our competitive technological position, there can be no assurance that others may not independently develop the same or similar technologies. We seek to protect our trade secrets and proprietary knowledge, in part, through confidentiality agreements with our employees, consultants, advisors and contractors. These agreements may not be sufficient to effectively prevent disclosure of our confidential information and may not provide us with an adequate remedy in the event of unauthorized disclosure of such information. If our employees, consultants, advisors, or contractors develop inventions or processes independently that may be applicable to our products, disputes may arise about ownership of proprietary rights to those inventions and processes. Such inventions and processes will not necessarily become our property, but may remain the property of those persons or their employers. Protracted and costly litigation could be necessary to enforce and determine the scope of our proprietary rights. Failure to obtain or maintain trade secret protection, for any reason, could harm our business.

If we infringe on the intellectual property rights of others, our business will be harmed.

It is possible that the manufacture, use or sale of our pressure cycling technology products or services may infringe patent or other intellectual property rights of others. We may be unable to avoid infringement of the patent or other intellectual property rights of others and may be required to seek a license, defend an infringement action, or challenge the validity of the patents or other intellectual property rights in court. We may be unable to secure a license on terms and conditions acceptable to us, if at all. Also, we may not prevail in any patent or other intellectual property rights litigation. Patent or other intellectual property rights litigation is costly and time-consuming, and there can be no assurance that we will have sufficient resources to bring any possible litigation related to such infringement to a successful conclusion. If we do not obtain a license under such patents or other intellectual property rights, or if we are found liable for infringement, or if we are unsuccessful in having such patents declared invalid, we may be liable for significant monetary damages, may encounter significant delays in successfully commercializing and developing our pressure cycling technology products, or may be precluded from participating in the manufacture, use, or sale of our pressure cycling technology products or services requiring such licenses.

We may be unable to adequately respond to rapid changes in technology and the development of new industry standards.

The introduction of products and services embodying new technology and the emergence of new industry standards may render our existing pressure cycling technology products and related services obsolete and unmarketable if we are unable to adapt to change. We may be unable to allocate the funds necessary to improve our current products or introduce new products to address our customers' needs and respond to technological change. In the event that other companies develop more technologically advanced products, our competitive position relative to such companies would be harmed.

We may not be able to compete successfully with others that are developing or have developed competitive technologies and products.

A number of companies have developed, or are expected to develop, products that compete or will compete with our products. We compete with companies that have existing technologies for the extraction of nucleic acids, proteins and small molecules from cells and tissues, including methods such as mortar and pestle, sonication, rotor-stator homogenization, French press, bead beating, freezer milling, enzymatic digestion, and chemical dissolution.

We are aware that there are additional companies pursuing new technologies with similar goals to the products developed or being developed by us. Some of the companies with which we now compete, or may compete in the future, have or may have more extensive research, marketing, and manufacturing capabilities, more experience in genomics and proteomics sample preparation, protein purification, pathogen inactivation, immunodiagnostics, and DNA sequencing and significantly greater technical, personnel and financial resources than we do, and may be better positioned to continue to improve their technology to compete in an evolving industry. To compete, we must be able to demonstrate to potential customers that our products provide improved performance and capabilities. Our failure to compete successfully could harm our business and prospects.

Provisions in our articles of organization and bylaws and our shareholder rights agreement may discourage or frustrate shareholders' attempts to remove or replace our current management.

Our articles of organization and bylaws contain provisions that may make it more difficult or discourage changes in our management that our stockholders may consider to be favorable. These provisions include:

- a classified board of directors;
- advance notice for stockholder nominations to the board of directors;
- limitations on the ability of stockholders to remove directors; and
- a provision that allows a majority of the directors to fill vacancies on the board of directors.

Our shareholders rights agreement, or “poison pill”, may also have the effect of discouraging or preventing a change in control.

These provisions could prevent or frustrate attempts to make changes in our management that our stockholders consider to be beneficial and could limit the price that our stockholders might receive in the future for shares of our common stock.

The costs of compliance with the reporting obligations of the Exchange Act, and with the requirements of the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act, may place a strain on our limited resources and our management's attention may be diverted from other business concerns.

As a result of the regulatory requirements applicable to public companies, we incur legal, accounting, and other expenses that are significant in relation to the size of our company. In addition, the Sarbanes-Oxley Act of 2002 and the Dodd-Frank Wall Street Reform and Consumer Protection Act, as well as rules subsequently implemented by the

SEC and NASDAQ, have required changes in corporate governance and financial disclosure practices of public companies, some of which are currently applicable to us and others will or may become applicable to us in the future. These rules and regulations will increase our legal and financial compliance costs and may make some activities more time-consuming. These requirements may place a strain on our systems and on our management and financial resources.

Certain of our net deferred tax assets could be substantially limited if we experience an ownership change as defined in the Internal Revenue Code.

Certain of our net operating losses (“NOLs”) give rise to net deferred tax assets. Our ability to utilize NOLs and to offset our future taxable income and/or to recover previously paid taxes would be limited if we were to undergo an “ownership change” within the meaning of Section 382 of the Internal Revenue Code, which we refer to as the Code. In general, an “ownership change” occurs whenever the percentage of the stock of a corporation owned by “5-percent shareholders” (within the meaning of Section 382 of the Code) increases by more than 50 percentage points over the lowest percentage of the stock of such corporation owned by such “5-percent shareholders” at any time over the preceding three years.

An ownership change under Section 382 of the Code would establish an annual limitation on the amount of NOLs we could utilize to offset our taxable income in any single taxable year to an amount equal to (i) the product of a specified rate, which is published by the U.S. Treasury, and the aggregate value of our outstanding stock plus (ii) the amount of unutilized limitation from prior years. The application of these limitations might prevent full utilization of the deferred tax assets attributable to our NOLs. We may have or will have experienced an ownership change as defined by Section 382 through the sale of equity and, therefore, we will consider whether the sale of equity units will result in limitations of our net operating losses under Section 382 when we start to generate taxable income. However, whether a change in ownership occurs in the future is largely outside of our control, and there can be no assurance that such a change will not occur.

Risks Related to Share Ownership

The holders of our common stock could suffer substantial dilution.

In connection with the private placements and registered direct offering we completed during the past few years, we have issued shares of Series A Convertible Preferred Stock, Series B Convertible Preferred Stock, Series C Convertible Preferred Stock, and Series D Convertible Preferred Stock. In connection with those private placements and registered direct offering, we also issued warrants to purchase shares of Series A Convertible Preferred Stock, warrants to purchase shares of Series B Convertible Preferred Stock, and warrants to purchase shares of common stock. Each share of Series A Convertible Preferred Stock and Series B Convertible Preferred Stock was, and each share of Series C Convertible Preferred Stock is, convertible into 10 shares of common stock. Each share of Series D Convertible Preferred Stock is convertible into 1,538.46 shares of common stock. As of March 14, 2012, there were no shares of Series A Convertible Preferred Stock or Series B Convertible Preferred Stock issued and outstanding. If all of the outstanding shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock, together with our outstanding warrants issued in connection with our private placements and registered direct offering, were converted or exercised into shares of our common stock, an additional 6,696,265 shares of common stock would be issued and outstanding. The additional issuance of common stock would cause immediate and substantial dilution to our existing stockholders, and could cause a significant reduction in the market price of our common stock.

There is no public market for the Series E preferred shares or warrants to purchase shares of common stock to be sold in this offering.

There is no established public trading market for the Series E preferred shares or the Class A Warrants or Class B Warrants being sold in this offering, and we do not expect a market to develop. In addition, we do not intend to apply for listing the Series E preferred shares or the Class A Warrants or Class B Warrants on any securities exchange. Without an active market, the liquidity of these securities will be limited.

As a new investor, you will incur substantial dilution in this offering and from future equity issuances, and as result, our share price could decline.

The per share common stock equivalent conversion price of the Series E preferred shares is substantially higher than the net tangible book value (deficit) per share of our outstanding shares of common stock. Our pro forma net tangible book value (deficit) as of December 31, 2011 was (\$542,098) or (\$0.06) per share of common stock (assuming the conversion of all of our issued and outstanding shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock issued in November 2011) (and excluding shares of common stock issuable upon exercise

of all outstanding options and warrants). Net tangible book value (deficit) per share represents total tangible assets less total liabilities, divided by the number of shares of common stock issued and outstanding. After giving effect to the sale of _____ Series E preferred shares in this offering and assuming the conversion of all the Series E preferred shares sold in the offering (and including shares of common stock issuable upon conversion of all of our issued and outstanding shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock, and excluding shares of common stock issuable upon exercise of all outstanding options and warrants), our as adjusted pro forma net tangible book value as of December 31, 2011 would have been \$_____, or \$_____ per share. This represents an immediate increase in net tangible book value of \$_____ per share to existing common stockholders and an immediate dilution in net tangible book value of \$_____ per share to investors in this offering (on an as-if-converted, per share common stock equivalent basis).

In addition to this offering, subject to market conditions and other factors, it is likely that we will pursue additional capital to finance our operations and the development, manufacture and marketing of other products under development and new product opportunities. Accordingly, we may conduct future offerings of equity or debt securities. The exercise of outstanding options and warrants and future equity issuances, including future public offerings or future private placements of equity securities and any additional shares issued in connection with acquisitions, may result in dilution to investors. In addition, the market price of our shares of common stock could fall as a result of resales of any of these shares of common stock due to an increased number of shares available for sale in the market.

Sales of a significant number of shares of our common stock in the public market, or the perception of such possible sales, could depress the market price of our common stock.

Sales of a substantial number of shares of our common stock or other equity-related securities in the public markets, including in an offering of our common stock or preferred stock, could depress the market price of our common stock and impair our ability to raise capital through the sale of additional equity or equity-related securities. We cannot predict the effect that future sales of our common stock or other equity-related securities would have on the market price of our common stock.

Our share price could be volatile and our trading volume may fluctuate substantially.

The price of our shares of common stock has been and may in the future continue to be extremely volatile, with the sale price fluctuating from a low of \$0.51 to a high of \$2.29 since December 31, 2009. Many factors could have a significant impact on the future price of our shares of common stock, including:

- our inability to raise additional capital to fund our operations, whether through the issuance of equity securities or debt;
- our failure to successfully implement our business objectives;
- compliance with ongoing regulatory requirements;
- market acceptance of our products;
- technological innovations and new commercial products by our competitors;
- changes in government regulations;
- general economic conditions and other external factors;
- actual or anticipated fluctuations in our quarterly financial and operating results;
- the degree of trading liquidity in our shares of common stock; and
- our ability to meet the minimum standards required for remaining listed on the NASDAQ Capital Market.

A decline in the price of our shares of common stock could affect our ability to raise further working capital and adversely impact our ability to continue operations.

A decline in the price of our shares of common stock could result in a reduction in the liquidity of our common stock and a reduction in our ability to raise capital. Because a significant portion of our operations has been and will continue to be financed through the sale of equity securities, a decline in the price of our shares of common stock could be especially detrimental to our liquidity and our operations. Such reductions and declines may force us to reallocate funds from other planned uses and may have a significant negative effect on our business plans and operations, including our ability to continue our current operations. If the price for our shares of common stock declines, it may be more difficult to raise additional capital. If we are unable to raise sufficient capital, and we are unable to generate funds from operations sufficient to meet our obligations, we will not have the resources to continue our operations.

The market price for our shares of common stock may also be affected by our ability to meet or exceed expectations of analysts or investors. Any failure to meet these expectations, even if minor, may have a material adverse effect on the market price of our shares of common stock.

If we issue additional securities in the future, it will likely result in the dilution of our shares of existing stockholders.

Our restated articles of organization, as amended, authorize the issuance of up to 20,000,000 shares of common stock and 1,000,000 shares of preferred stock. As of March 14, 2012, we had 8,499,898 shares of common stock issued and outstanding, 88,098 shares of Series C Convertible Preferred Stock issued and outstanding, which shares of Series C Convertible Preferred Stock are convertible into 880,980 shares of common stock and 300 shares of Series D Convertible Preferred Stock issued and outstanding, which shares of Series D Convertible Preferred Stock are convertible into 461,539, shares of common stock. As of March 14, 2012, we had options and warrants to purchase an aggregate of approximately 6,816,938 shares of our common stock outstanding, and had an additional 267,500 shares of common stock reserved for future awards that we may grant under our equity compensation plans. In December 2011, our stockholders approved an amendment to our restated articles of organization, as amended, to increase the number of our authorized shares of common stock from 20,000,000 to 50,000,000. We plan to file articles of amendment to increase our authorized common stock prior to completion of this offering. From time to time we also may increase the number of shares available for issuance in connection with our equity compensation plans and we may issue awards to our employees and others who provide services to us outside the terms of our equity compensation plans. Our board of directors may fix and determine the designations, rights, preferences or other variations of each class or series of preferred stock and may choose to issue some or all of such shares to provide additional financing in the future.

The issuance of any securities for acquisition, licensing or financing efforts, upon conversion of any preferred stock or exercise of warrants, pursuant to our equity compensation plans, or otherwise may result in a reduction of the book value and market price of the outstanding shares of our common stock. If we issue any such additional securities, such issuance will cause a reduction in the proportionate ownership and voting power of all current stockholders. Further, such issuance may result in a change in control of our Company.

Financial Industry Regulatory Authority (“FINRA”) sales practice requirements may also limit a stockholder’s ability to buy and sell our common stock.

FINRA has adopted rules that require that in recommending an investment to a customer, a broker-dealer must have reasonable grounds for believing that the investment is suitable for that customer. Prior to recommending speculative low-priced securities to their non-institutional customers, broker-dealers must make reasonable efforts to obtain information about the customer’s financial status, tax status, investment objectives and other information. Under interpretations of these rules, FINRA believes that there is a high probability that speculative low-priced securities will not be suitable for at least some customers. FINRA requirements make it more difficult for broker-dealers to

recommend that their customers buy our common stock, which may limit your ability to buy and sell our common stock and have an adverse effect on the market for our shares.

We have never paid dividends on our common stock and do not anticipate paying any in the foreseeable future.

We have never declared or paid a cash dividend on our common stock and we do not expect to pay cash dividends on our common stock in the foreseeable future.

The Series E preferred shares being offered pursuant to this prospectus, as well as our shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock, are entitled to certain rights, privileges and preferences over our common stock, including the right to receive dividends, in the case of the Series C Convertible Preferred Stock and Series E preferred shares, and a preference upon a liquidation of our company, which will reduce amounts available for distribution to our common stockholders.

Until _____, 2015, each holder of the Series E preferred shares will be entitled to receive dividends at the rate of 5% per year of the stated value for each Series E preferred share held by such holder payable quarterly on January 1, April 1, July 1 and October 1, beginning on the first such date after the original issue date, and on each conversion date. The dividends will be paid in cash or, at our election and subject to certain conditions described in this prospectus, in shares of our common stock. In addition, the holders of our shares of Series C Convertible Preferred Stock are entitled to receive a cumulative dividend at the rate of 5% per year of the purchase price paid for the Series C Convertible Preferred Stock, payable, either in cash or in shares of common stock at our option.. Further, in the event dividends are paid on the Series E preferred shares, holders of our Series C Convertible Preferred stock will also be entitled to be paid dividends in an amount equal to the greater of the amount of dividends then accrued and unpaid on each share of Series C Convertible Preferred Stock or the amount of any dividend payable on the Series E preferred shares (on a common stock equivalent basis). If we elect to pay the dividends in cash, we will have less cash available for operations, and less cash available to the holders of common stock upon a liquidation of our company. The effect of the dividend payable on the Series E preferred shares, if we pay it in cash, is that more than 15% of the net proceeds of this offering may be used to pay the holders of the Series E preferred shares. A payment of dividends in common stock will have a dilutive effect on our common stockholders. Further, the shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock and the Series E preferred shares are entitled to payment prior to payment to the holders of common stock in the event of liquidation of the Company.

Our common stock may be delisted from The NASDAQ Capital Market, which could negatively impact the price of our common stock, liquidity for our stockholders and our ability to access the capital markets.

Our common stock is listed on The NASDAQ Capital Market. We previously received letters from the NASDAQ Stock Market LLC, or NASDAQ, on April 13, 2011, advising us that our stockholders' equity for the year ended December 31, 2010 had fallen below the minimum requirement for continued inclusion on The NASDAQ Capital Market and on August 15, 2011, advising us that, for the previous 30 consecutive business days, the bid price of our common stock had closed below the minimum \$1.00 per share requirement for continued inclusion on The NASDAQ Capital Market. On October 4, 2011, we received written notification from the Listing Qualifications Department of the NASDAQ Stock Market LLC, or NASDAQ, stating that our common stock is subject to delisting from The NASDAQ Capital Market, pending our opportunity to request a hearing before a NASDAQ Listing Qualifications Panel (the "Panel"). We attended a hearing before the Panel on November 17, 2011 to consider further our plan to bring the Company into compliance with the stockholders' equity listing standard and the minimum \$1.00 per share requirement.

On December 7, 2011, we received notice that the Panel granted our request for continued listing on The NASDAQ Capital Market subject to, among other things, our demonstration of compliance with the applicable minimum stockholders' equity requirement of \$2.5 million by February 29, 2012. On February 15, 2012, we received notice from NASDAQ that the bid price of our common stock had not regained compliance with the minimum \$1.00 per share requirement as of February 13, 2012, 180 calendar days after the NASDAQ's August 15, 2011 notice. We submitted a revised plan of compliance for the Panel's review and received a further extension of time to comply with the stockholders' equity requirement by March 23, 2012 and the minimum bid price requirement for a minimum of ten consecutive business days by April 9, 2012. Our plan of compliance includes, among other things, completing this offering and the possibility of effecting a reverse stock split if necessary. While we are diligently working to regain compliance with all applicable NASDAQ listing criteria, including the minimum stockholders' equity and minimum bid price of \$1.00 per share, there can be no assurance that the Panel will grant our request for a further extension of time for continued listing or that we will be able to successfully complete our plan to achieve compliance.

If we fail to comply with the listing standards applicable to issuers listed on The NASDAQ Capital Market by the deadline set forth above or any extension of such deadline, our common stock will be delisted from The NASDAQ Capital Market.

If we are unsuccessful in maintaining our NASDAQ listing, then we may pursue listing and trading of our shares of common stock on the Over-The-Counter Bulletin Board or another securities exchange or association with different listing standards than NASDAQ. We anticipate the change in listings may result in a reduction in some or all of the following, each of which could have a material adverse effect on our shareholders:

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- the liquidity of our shares of common stock;
- the market price of our shares of common stock;
- our ability to obtain financing for the continuation of our operations;
- the number of institutional and other investors that will consider investing in our shares of common stock;
- the number of market makers in our shares of common stock;
- the availability of information concerning the trading prices and volume of our shares of common stock; and
- the number of broker-dealers willing to execute trades in our shares of common stock.

Furthermore, if our shares of common stock were removed from listing with The NASDAQ Capital Market and we are unsuccessful in listing our shares of common stock on another national securities exchange, the shares may be subject to the so-called “penny stock” rules. The SEC has adopted regulations that define a penny stock to be any equity security that has a market price per share of less than \$5.00, subject to certain exceptions, such as any securities listed on a national securities exchange. For any transaction involving a penny stock, unless exempt, the rules impose additional sales practice requirements on broker-dealers, subject to certain exceptions. If our shares of common stock were delisted and determined to be a penny stock, a broker-dealer may find it more difficult to trade our shares of common stock and an investor may find it more difficult to acquire or dispose of our shares of common stock on the secondary market. Investors in penny stocks should be prepared for the possibility that they may lose their whole investment.

Use of Proceeds

Assuming all units are sold, we estimate that the net proceeds to us from this offering will be approximately \$__ million. However, the offering does not specify any minimum sale of any specific number of units as a result of which the net proceeds actually received by us may be considerably less than this estimate. We intend to use the net proceeds from this offering to support a comprehensive sales distribution strategy of our current products and the development and commercialization of future products, to fund our research and development activities, for general working capital needs, for the repayment of up to \$200,000 of the aggregate principal amount outstanding under promissory notes, and to fund dividends paid in cash on our Series C Convertible Preferred Stock.

As of February 15, 2012, our outstanding indebtedness, in the aggregate principal amount of \$200,000, consisted of convertible promissory notes in the aggregate principal amount of \$50,000 together with an interest rate of 20% per year due on March 29, 2012 and a promissory note in the aggregate principal amount of \$150,000 due on May 4, 2012. This promissory note in the aggregate principal amount of \$150,000 is interest free unless we fail to repay the principal amount by May 4, 2012, in which event it will accrue interest at 18% per year.

We cannot estimate precisely the allocation of the net proceeds from this offering among these uses. The amounts and timing of the expenditures may vary significantly, depending on numerous factors, including the amount of cash used in our operations. Accordingly, our management will have broad discretion in the application of the net proceeds of this offering. We reserve the right to change the use of proceeds as a result of certain contingencies such as

competitive developments and other factors. Pending the uses described above, we may temporarily invest the net proceeds of this offering in short- and medium-term interest-bearing obligations, investment-grade instruments, bank certificates of deposit and government securities until we use them for their stated purpose.

Determination of Offering Price

Some of the factors considered in determining the offering price of the units were the history and prospects of Pressure BioSciences and comparable companies, similar prior offerings of comparable companies, our management, our capital structure, and currently prevailing general conditions in equity securities markets, including current market valuations of publicly traded companies considered comparable to our company. We cannot assure you, however, that the price at which the units, Series E preferred shares, shares of common stock or Class A or Class B Warrants may be sold after this offering will not be lower than the current offering price. There is no trading market in our units, Series E preferred shares, or Class A or Class B Warrants, and we do not expect a trading market to develop after this offering.

Dilution

Our pro forma net tangible book value (deficit) as of December 31, 2011 was (\$542,098) or (\$0.06) per share of common stock (assuming the conversion of all of our issued and outstanding shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock issued in November 2011) (and excluding shares of common stock issuable upon exercise of all outstanding options and warrants). Net tangible book value (deficit) per share represents total tangible assets less total liabilities, divided by the number of shares of common stock issued and outstanding. After giving effect to the sale of _____ Series E preferred shares in this offering and assuming the conversion of all the Series E preferred shares sold in the offering (and including shares of common stock issuable upon conversion of all of our issued and outstanding shares of Series C Convertible Preferred Stock and Series D Convertible Preferred Stock, and excluding shares of common stock issuable upon exercise of all outstanding options and warrants, including the Class A Warrants and the Class B Warrants sold in this offering), our as adjusted pro forma net tangible book value as of December 31, 2011 would have been \$_____, or \$_____ per share. This represents an immediate increase in net tangible book value of \$_____ per share to existing common stockholders and an immediate dilution in net tangible book value of \$_____ per share to investors in this offering (on an as-if-converted, per share common stock equivalent basis). The following table illustrates this calculation.

| | | |
|---|-----------|----|
| Series E preferred shares conversion price (on a per share common stock equivalent basis) | | \$ |
| Pro forma net tangible book value per share as of December 31, 2011 | \$(_____) | \$ |
| Increase per share attributable to this offering | \$_____ | \$ |
| As adjusted pro forma tangible book value per share after this offering | | \$ |
| Dilution per share to new investors in this offering (on a per share common stock equivalent basis) | | \$ |

The number of shares of common stock outstanding used in the table and calculations above is based on 8,499,898 shares outstanding as of March 14, 2012 and includes 880,980 shares of common stock reserved for issuance upon conversion of outstanding shares of Series C Convertible Preferred Stock and 461,539 shares of common stock reserved for issuance upon conversion of outstanding shares of Series D Convertible Preferred Stock, and excludes: 1,555,500 shares of common stock reserved for issuance upon exercise of outstanding stock options, at a weighted average exercise price of \$2.17 per share; 5,261,438 shares of common stock reserved for issuance upon exercise of outstanding warrants to purchase our common stock, at a weighted average exercise price of \$1.29 per share; and _____ shares of common stock to be reserved for issuance upon exercise of the Class A Warrants and Class B Warrants sold in this offering.

Dividend Policy

We have not declared or paid cash dividends on our shares of common stock and do not anticipate paying any cash dividends on our shares of common stock in the foreseeable future. We expect to retain future earnings, if any, to fund the development and growth of our business. Our board of directors will determine future dividends on our shares of common stock, if any. The Series E preferred shares included in this offering will be entitled to a quarterly dividend at a rate of 5% per year of the stated value of the Series E preferred shares until _____, 2015 as described in the section "Description of Securities." In addition, we are required to pay a dividend on our Series C Convertible Preferred Stock at the rate of 5% per year of the purchase price paid for the Series C Convertible Preferred Stock, payable, either in cash or in shares of common stock at our option, semi-annually within 45 days of each of June 30 and December 31. Further, in the event dividends are paid on the Series E preferred shares, holders of our Series C

Convertible Preferred stock will also be entitled to be paid dividends in an amount equal to the greater of the amount of dividends then accrued and unpaid on each share of Series C Convertible Preferred Stock or the amount of any dividend payable on the Series E preferred shares (on a common stock equivalent basis).

Capitalization

The following table sets forth our capitalization as of December 31, 2011:

25 • on an actual basis;

on a pro forma as adjusted basis to reflect the increase in the number of our authorized shares of common stock from 20,000,000 to 50,000,000, as approved by our stockholders in December 2011, (see the section “Description of Securities”, below) and to reflect the sale of _____ Series E preferred shares in this offering and assuming the conversion of all the Series E preferred shares sold in the offering (and excluding shares of common stock issuable upon exercise of the Class A warrants and Class B warrants), after deducting the Placement Agent’s fees and other estimated offering related expenses payable by us.

The offering does not specify any minimum purchase or sale of any specific number of units. As a result, our actual total capitalization following completion of the offering may be significantly less than the “Pro forma as adjusted” total capitalization reflected in the below table.

You should read the information in this table together with “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and the accompanying notes included elsewhere in this prospectus.

| | December 31, 2011 | |
|--|-------------------|--------------|
| | Actual | Pro forma |
| Cash and cash equivalents | \$222,775 | – |
| Shareholders’ equity: | | |
| Series A convertible preferred stock, \$.01 par value; 313,960 shares authorized; 0 shares issued and outstanding on December 31, 2011 | - | - |
| Series B convertible preferred stock, \$.01 par value; 279,256 shares authorized; 0 shares issued and outstanding on December 31, 2011 | - | - |
| Series C convertible preferred stock, \$.01 par value; 88,098 shares authorized; 88,098 shares issued and outstanding on December 31, 2011 | 881 | - |
| Series D convertible preferred stock, \$.01 par value; 850 shares authorized; 743 shares issued and outstanding on December 31, 2011 | 7 | - |
| Common stock, \$.01 par value; 20,000,000 shares authorized; 6,723,993 shares issued and outstanding on December 31, 2011 | 67,240 | - |
| Warrants to acquire preferred stock and common stock | 2,203,101 | - |
| Additional paid-in capital | 13,823,875 | - |
| Accumulated deficit | (16,503,440) | - |
| Total shareholders’ equity | (408,336) | - |
| Total capitalization | \$(408,336) | - |

The number of shares of common stock outstanding used in the table and calculations above is based on 6,723,993 shares outstanding as of December 31, 2011, 880,980 shares of common stock reserved for issuance upon conversion of outstanding shares of Series C Convertible Preferred Stock and 1,143,077 shares of common stock reserved for issuance upon conversion of outstanding shares of Series D Convertible Preferred, and excludes: 1,508,500 shares of common stock reserved for issuance upon exercise of outstanding stock options, at a weighted average exercise price of \$2.34 per share; 4,775,501 shares of common stock reserved for issuance upon exercise of outstanding warrants to purchase our common stock, at a weighted average exercise price of \$1.35 per share; and _____ shares of common stock to be reserved for issuance upon exercise of the Class A Warrants and the Class B Warrants sold in this offering.

Description of Securities

This prospectus relates to the sale of units. Each unit includes (1) one Series E preferred share, (2) one Class A Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit, and (3) one Class B Warrant to purchase 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit. The terms of the Series E preferred shares are described below under the caption “Description of Series E Preferred Shares.” The terms of the Class A Warrants and the Class B Warrants are described below under the caption “Description of Warrants.”

Authorized Capital

As of March 14, 2012, our restated articles of organization, as amended, provides that we are authorized to issue 20,000,000 shares of common stock, \$.01 par value, and 1,000,000 shares of preferred stock, \$.01 par value. Of the 1,000,000 shares of preferred stock, 20,000 shares have been designated as Series A Junior Participating Preferred Stock, 313,960 shares have been designated as Series A Convertible Preferred Stock, 279,256 shares have been designated as Series B Convertible Preferred Stock, 88,098 shares have been designated as Series C Convertible Preferred Stock and 850 shares have been designated as Series D Convertible Preferred Stock. As of March 14, 2012, there were 8,499,898 shares of common stock issued and outstanding, 88,098 shares of Series C Convertible Preferred Stock outstanding and 300 shares of Series D Convertible Preferred Stock issued and outstanding. As of March 14, 2012, there were no shares of Series A Junior Participating Preferred Stock, Series A Convertible Preferred Stock or Series B Convertible Preferred Stock issued and outstanding.

In December 2011, our stockholders approved an amendment to our restated articles of organization, as amended, to increase the number of our authorized shares of common stock from 20,000,000 to 50,000,000. We plan to file articles of amendment to our restated articles of organization, as amended, to effect the increase in our authorized shares of common stock prior to completion of this offering.

In connection with our sale of units consisting of Series C Preferred Stock and warrants to purchase shares of our common stock in April and June of 2011 (the "Series C Units"), we agreed that, if we completed an equity financing within 12 months after the initial closing of the Series C Units (the "Next Financing"), then each purchaser of Series C Units would be entitled to exchange all, but not less than all, of his, her or its Series C Units for the equity securities issued in such equity financing (the "Next Financing Securities"); provided that the exchange of the purchaser's Series C Units for the equity securities is permitted under NASDAQ rules and regulations then in effect. The number of Next Financing Securities into which a purchaser's Series C Units may be exchanged is determined by dividing (a) the aggregate per unit purchase price at which the Series C Units being exchanged were issued, by (b) the price per Next Financing Security at which such securities were issued in the Next Financing. We understand from the holders of the Series C Units that such holders intend to exercise their right to exchange all of their Series C Units for the units we offered in our February 2012 private placement. Assuming that each holder of Series C Units elects to exchange their Series C Units for the units offered in the February 2012 private placement, and further assuming that the exchange of all such Series C Units is permitted under applicable NASDAQ rules and regulations, an aggregate of 1,372,243 shares of common stock and warrants to purchase 686,121 shares of common stock will be issued to the holders of Series C Units.

Description of Shares of Capital Stock

Common Stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by shareholders and are entitled to receive such dividends, if any, as may be declared from time to time by our board of directors from funds legally available therefor. The holders of our common stock do not have cumulative voting rights in the election of directors. Upon our liquidation or dissolution, subject to the liquidation preferences of the holders of our Series A Convertible Preferred Stock, Series B Convertible Preferred Stock, Series C Convertible Preferred Stock, Series D Convertible Preferred Stock and Series E preferred shares to be sold in this offering if any are issued and outstanding at the time of our liquidation or dissolution, the holders of our common stock are entitled to receive all assets available for distribution to the shareholders. Shares of our common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such shares.

Preferred Stock

A total of 297,836 shares of preferred stock have not yet been designated to any class or series. Our board of directors may, without future action of our shareholders, issue any undesignated shares of preferred stock in one or more classes or series and fix the rights and preferences thereof, including the dividend rights, dividend rates, conversion rights, voting rights, terms of redemption (including sinking fund provisions), redemption price or prices, liquidation preferences and the number of shares constituting any class or series, or the designations of such class or series. The voting and other rights of the holders of our common stock may be subject to and adversely affected by, the rights of holders of any preferred stock that are currently issued or that may be issued in the future.

Description of Series E Preferred Shares

Our restated articles of organization, as amended, authorize 1,000,000 shares of preferred stock. Our board of directors is authorized, without further stockholder action, to establish various classes or series of shares of preferred stock from time to time and to determine the rights, preferences and privileges of any unissued class or series including, among other matters, any dividend rights, dividend rates, conversion rights, voting rights, terms of redemption (including sinking fund provisions), redemption price or prices, liquidation preferences, the number of shares constituting any such class or series, and the designation of such class or series, and to issue any such shares. Our board of directors may, without shareholder approval, issue additional classes or series of shares of preferred stock with voting and conversion rights which could adversely affect the voting power of the holders of the shares of common stock or the Series E preferred shares, except as prohibited by the certificate of designation of preferences, rights and limitations of Series E preferred shares, or certificate of designation.

In connection with the completion of this offering, we expect our board of directors to adopt resolutions which would authorize ____ shares of a new class of shares designated 5% Series E Convertible Preferred Shares (the "Series E preferred shares"). The material terms and provisions of the Series E preferred shares are summarized below. For the complete terms of the Series E preferred shares, you should refer to the form of certificate of designation of 5% Series E convertible preferred shares which has been filed as an exhibit to the registration statement of which this prospectus is a part.

Voting Rights

As long as any Series E preferred shares are outstanding, we will not, without the affirmative vote of the holders of a majority of the then outstanding Series E preferred shares, (1) alter or change adversely the powers, preferences or rights given to the Series E preferred shares or alter or amend the certificate of designation, (2) authorize or create any class of shares ranking as to dividends, redemption or distribution of assets upon liquidation senior to, or otherwise *pari passu* with, the Series E preferred shares, (3) amend our restated articles of organization, as amended, or our certificate of designation for the Series E preferred shares, in any manner that adversely affects any rights of the holders of Series E preferred shares, (4) increase the number of authorized Series E preferred shares, or (5) enter into any agreement with respect to any of the foregoing; provided the authorization or creation of any class of shares ranking as to voting, dividends, redemption or distribution of assets upon liquidation senior to, or otherwise *pari passu* with, the Series E preferred shares shall not be deemed to adversely affect any rights of the holders of Series E preferred shares. Except for these specifications, and except as required by Massachusetts law, holders of the Series E preferred shares will not have rights to vote on any matters, questions or proceedings, including the election of directors.

Conversion

Subject to certain ownership limitations as described below, the Series E preferred shares are convertible at any time at the option of the holder into shares of our common stock at a conversion ratio determined by dividing the stated value of the Series E preferred shares (or \$1,000) by a conversion price of \$_____ per share. Accordingly, each Series E preferred share is convertible into _____ shares of common stock. The conversion price is subject to adjustment in the case of stock splits, stock dividends, combinations of shares and similar recapitalization transactions. The conversion price is also subject to adjustment in the event that we issue any shares of common stock or common stock equivalents at a per share price that is lower than the conversion price for the Series E preferred shares then in effect. Upon any such issuance at such lower price, the conversion price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued (referred to as the “full ratchet adjustment”). No adjustment in the conversion price will be made for issuances of common stock under our option plans or upon conversion or exercise of options, warrants or shares of Series C Convertible Preferred Stock or Series D Convertible Preferred Stock outstanding as the date on which the Series E preferred shares are first issued.

If the average volume weighted average price of our common stock for 20 trading days during any consecutive 30 trading day period beginning after the original issue date (a "Threshold Period"), exceeds 250% of the then effective conversion price, the full ratchet adjustment provision described above shall automatically expire, and, at our election, we may deliver a written notice (a "forced conversion notice") to all holders of Series E preferred shares requiring each holder to convert all or part of such holder's Series E preferred shares plus all accrued but unpaid dividends thereon and other amounts due in respect of the Series E preferred shares, into shares of common stock at the then current conversion ratio. We may not deliver a forced conversion notice, and such notice shall not be effective if delivered, unless all of the Equity Conditions (as defined below) have been met on each of the 30 trading days during the applicable Threshold Period and through the first trading day after the date that conversion shares issuable pursuant to a forced conversion are actually delivered to the holders pursuant to a forced conversion notice. The "Equity Conditions" are as follows: (a) we must have timely honored all previously requested or required conversions, if any, (b)(i) there must be an effective registration statement pursuant to which we may issue conversion shares (and, as applicable, shares of common stock issued in satisfaction of any required make-whole payment (described below) and in lieu of cash payment of dividends) or (ii) with respect to conversions that occur after _____, 2015, all of the conversion shares may be issued to the holder pursuant to Section 3(a)(9) of the Securities Act of 1933, as amended, and immediately resold without restriction, (c) our common stock must be trading on a "trading market" (as defined in the certificate of designation) and all of the shares of common stock issuable pursuant to the terms of the Series E preferred shares and the Class A Warrants and Class B Warrants must be listed or quoted for trading on such trading market (and we must believe, in good faith, that trading of our common stock on a trading market will continue uninterrupted for the foreseeable future), (d) there must be a sufficient number of authorized, but unissued and otherwise unreserved, shares of common stock for the issuance of all of the shares of common stock then issuable pursuant to this offering, (e) the issuance of the shares of common stock in question to the applicable holder would not violate the beneficial ownership limitations described below, (f) the applicable shareholder must not be in possession of any information provided by us that constitutes, or may constitute, material non-public information and (g) with regard to a forced conversion only, the daily trading volume for a period of 20 consecutive trading days prior to the date of the forced conversion must exceed \$ _____. Any forced conversion notice shall be applied ratably to all of the holders of Series E preferred shares based on each holder's initial purchases of Series E preferred shares, provided that any voluntary conversions by a holder shall be applied against such holder's pro rata allocation, thereby decreasing the aggregate amount forcibly converted if less than all of the Series E preferred shares are forcibly converted.

Subject to limited exceptions, a holder of Series E preferred shares will not have the right to convert, and we will not have the right to force such holder to convert, any portion of his, her, or its Series E preferred shares if the holder, together with its affiliates, would beneficially own in excess of 4.99% (or 9.99% as elected by the holder pursuant to the terms of the certificate of designation) of the number of our shares of common stock outstanding immediately after giving effect to his, her, or its conversion.

Dividends and Make-Whole Payments

Until _____, 2015, each holder of the Series E preferred shares is entitled to receive dividends at the rate of 5% per year of the stated value for each Series E preferred share held by such holder. Such dividends shall be payable quarterly on January 1, April 1, July 1 and October 1, beginning on the first such date after the original issue date, and shall be paid upon the earlier. Except in limited circumstances (including a failure to occur of _____, 2015,

conversion of the Series E preferred shares or liquidation, dissolution or winding up of the Company. We may elect to pay all or a portion of any accrued dividends at any time in cash. If met the Equity Conditions have been met), we can elect to pay the accrued dividends in cash or in duly authorized, validly issued, fully paid and non-assessable shares of common stock upon the earlier to occur of (i) _____, 2015, (ii) conversion of the Series E preferred shares or (iii) liquidation, dissolution or winding up of the Company. , or a combination thereof. If the Equity Conditions are not met, we must pay the dividends in cash. If the Equity Conditions have been met and we choose to pay accrued the dividends in shares of common stock, the shares of common stock used to pay the accrued dividends will be valued at 85% of the volume weighted average volume weighted average price for the 20 consecutive trading days ending on the trading day immediately prior to the end of each quarter to which such accrued dividends relate. applicable dividend payment date. From and after _____, 2015, each holder of Series E preferred shares will be entitled to receive dividends equal, on an as-if-converted to common stock basis, to and in the same form as dividends actually paid on shares of common stock when, as, and if such dividends are paid on shares of common stock. We have never paid dividends on our common stock and we do not intend to do so for the foreseeable future.

In the event a holder converts his, her or its Series E preferred shares, or we elect a forced conversion of the Series E preferred as described above, prior to _____, 2015, we must also pay to the holder in cash, or at our option, subject to satisfaction of the Equity Conditions, in shares of common stock valued as described below, or a combination of cash and shares of common stock, with respect to the Series E preferred shares so converted, an amount equal to \$150 per \$1,000 of the stated value of the Series E preferred shares, less the amount of any dividends paid in cash or in shares of common stock on such Series E preferred shares on or before the date of conversion (the "Make-Whole Payment"). Shares of common stock used to pay all or a portion of the Make-Whole Payment will be valued at 85% of the average volume weighted average price for the 20 consecutive trading days ending on the trading day immediately prior to the conversion date requiring the Make-Whole Payment.

Liquidation

The Series E preferred shares will rank, with respect to rights upon liquidation, dissolution, or winding-up of the Company, (1) senior to our common stock, (2) senior to any series of preferred shares ranked junior to the Series E preferred shares, including our Series C Convertible Preferred Stock, (3) pari passu to our Series D Convertible Preferred Stock, and (4) junior to all of our existing and future indebtedness. Upon any liquidation, dissolution or winding up of the Company after payment or provision for payment of debts and other liabilities of the Company, and before any distribution or payment is made to the holders of any junior securities, the holders of Series E preferred shares and our Series D Convertible Preferred Stock, on a pari passu basis, shall first be entitled to be paid out of the assets of the Company available for distribution to its shareholders an amount equal to \$1,000 per share, plus accrued but unpaid dividends, after which any remaining assets of the Company shall be distributed among the holders of the other classes or series of shares in accordance with our articles of organization. If the assets of the Company are insufficient to pay in full such amounts to the holders of the Series E preferred shares and Series D Convertible Preferred Stock, then the entire assets to be distributed to the holders of Series E preferred shares and Series D Convertible Preferred Stock will be distributed ratably among the holders in accordance with the respective amounts that would be payable on such shares if all amounts payable thereon were paid in full.

Description of Class A Warrants and Class B Warrants

The material terms and provisions of the Class A Warrants and Class B Warrants being offered pursuant to this prospectus are summarized below. However, this summary of the Class A Warrants and Class B Warrants is not complete. For the complete terms of the Class A Warrants and Class B Warrants, you should refer to the form of the Class A Warrants and Class B Warrants filed as an exhibit to the registration statement of which this prospectus is a part.

Each unit includes one Class A Warrant to purchase 0.5 shares of common stock for every share of common stock underlying the Series E preferred share included in such unit and one Class B Warrant to purchase 0.5 shares of common stock for every share of common stock underlying the Series E preferred share included in such unit. Class A Warrants will entitle the holder to purchase shares of common stock for an exercise price equal to \$_____ per share. Subject to certain limitations as described below, the Class A Warrants are exercisable at the option of the holder beginning immediately after the date of issuance and will expire and entitle the holder to a cashless exercise on the fifth anniversary following the date of issuance. Class B Warrants will entitle the holder to purchase shares of common stock for an exercise price equal to \$_____ per share. Subject to certain limitations as described below, the Class B Warrants are exercisable at the option of the holder immediately after the date of issuance and will expire and entitle the holder to a cashless exercise on the thirtieth month following the date of issuance.

Subject to limited exceptions, a holder of warrants will not have the right to exercise any portion of its Class A Warrants or Class B Warrants if the holder, together with his, her or its affiliates, would beneficially own in excess of 4.99% (or 9.99% as elected by the holder pursuant to the terms of the warrant) of the number of our shares of common

stock outstanding immediately after giving effect to such exercise.

The exercise price and the number of shares issuable upon exercise of the Class A Warrants and the Class B Warrants is subject to appropriate adjustment in the event of recapitalization events, stock dividends, stock splits, share combinations, reclassifications, reorganizations or similar events affecting our common stock, and also upon any distributions of assets, including cash, shares or other property to our shareholders. The warrant holders must pay the exercise price in cash upon exercise of the warrants unless such holders are utilizing the cashless exercise provisions of the warrants. After the close of business on the applicable expiration date, unexercised warrants will become void.

The Class A Warrants provide that, subject to customary exclusions, until the Class A Warrants have expired or been exercised, without the prior written consent of the holders of two-thirds of the Class A Warrants, we will not be permitted to issue any shares of common stock or common share equivalents at an effective price per share below the exercise price of the Class A Warrants. The Class B Warrants similarly provide that, subject to customary exclusions, until the Class B Warrants have expired or been exercised, without the prior written consent of the holders of two-thirds of the Class B Warrants, we will not be permitted to issue any shares of common stock or common share equivalents at an effective price per share below the exercise price of the Class B Warrants. If the purchaser of units in this offering converts, sells, transfers or otherwise disposes of any Series E preferred shares originally purchased, then these prohibitions in the Class A Warrants and Class B Warrants against the issuance of common stock or common share equivalents at an effective price per share below the exercise price of the respective warrants will terminate with respect to that portion of the warrants which equals the portion of the Series E preferred shares so converted, sold, transferred or otherwise disposed of by such purchaser. Additionally, if the average volume weighted average price of our common stock for 20 trading days during any consecutive 30 trading day period beginning after the original issue date of the Class A Warrants and Class B Warrants exceeds 250% of the then effective conversion price of the Series E preferred shares, the prohibition against the issuance of common stock or common share equivalents at an effective price per share below the exercise price of the respective warrants will terminate with respect to all of the warrants.

The Class A Warrants and the Class B Warrants will expire in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license or otherwise dispose of all or substantially all of our assets or we or another person acquire 50% or more of our outstanding common stock, then following such event, the holders of the Class A Warrants and the Class B Warrants will be entitled to receive upon exercise of the warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the warrants immediately prior to such fundamental transaction. Any successor to us or surviving entity shall assume the obligations under the warrants. In addition, in the event of any such fundamental transaction completed for cash, as a transaction under Rule 13e-3 of the Securities Exchange Act of 1934, or involving a person whose securities are not traded on a national securities exchange, the holders of the warrants will have the right to require us to purchase the warrant for an amount in cash that is determined in accordance with a formula set forth in the warrants.

Upon a holder's exercise of a warrant, we will issue the shares of common stock issuable upon exercise of the warrant within three business days following our receipt of notice of exercise and payment of the exercise price, subject to surrender of the warrant. Prior to the exercise of any warrants to purchase shares of common stock, holders of the warrants will not have any of the rights of holders of the shares of common stock purchasable upon exercise, including the right to vote or to receive any payments of dividends on the shares of common stock purchasable upon exercise.

Shareholder Rights Plan

On February 27, 2003, our board of directors declared a dividend of one preferred share purchase right (a "Right") for each outstanding share of common stock on March 21, 2003 (the "Record Date") to the stockholders of record on that

date. After March 21, 2003, a Right will be attached to each share of common stock issued by our company, including with each share of common stock issued upon conversion of the Series E preferred shares and upon exercise of the Class A Warrants and Class B Warrants sold in this offering. Each Right gives the holder the right to purchase from us one one-thousandth of a share of our Series A Junior Participating Preferred Stock (the "Preferred Shares"), at a price of \$45.00 per one one-thousandth of a Preferred Share (the "Purchase Price"), subject to adjustment. Selected terms and provisions of the Rights are summarized below. For a complete description and terms of the Rights, you should refer to the Rights Agreement, dated as of February 27, 2003, between the Company and Computershare Trust Company, Inc., as amended (the "Rights Agreement").

Until the earlier to occur of (i) 10 days following a public announcement that a person or group of affiliated or associated persons has acquired beneficial ownership of 15% or more of the outstanding shares of common stock or any person or group who as of February 27, 2003 beneficially owned 15% or more of the outstanding shares of common stock acquired beneficial ownership of any additional shares of common stock (with certain exceptions, an "Acquiring Person") or (ii) 10 business days (or such later date as may be determined by action of our board of directors prior to such time as any person becomes an Acquiring Person) following the beginning of, or announcement of an intention to make, a tender offer or exchange offer the completion of which would result in the beneficial ownership by a person or group of 15% or more of such outstanding shares of common stock (the earlier of such dates being called the "Distribution Date"), the Rights will be evidenced by a summary of rights attachment to the common stock certificates that gave rise to the Rights.

The Rights Agreement provides that, until the Distribution Date, the Rights will be transferred with and only with the shares of common stock. Until the Distribution Date (or earlier redemption or expiration of the Rights), new common stock certificates issued after the Record Date or upon transfer or new issuance of shares of common stock will contain a note incorporating the Rights Agreement by reference. Until the Distribution Date (or earlier redemption or expiration of the Rights), the surrender or transfer of any certificates for shares of common stock outstanding as of the Record Date, even without such a note or a copy of the summary of rights being attached to the certificate, will also constitute the transfer of the Rights associated with the shares of common stock represented by such certificate. As soon as practicable following the Distribution Date, separate certificates evidencing the Rights (“Right Certificates”) will be mailed to holders of record of the shares of common stock as of the close of business on the Distribution Date and such separate Right Certificates alone will evidence the Rights.

The Rights are not exercisable until the Distribution Date. The Rights will expire on February 27, 2013 (the “Final Expiration Date”), unless the Final Expiration Date is advanced or extended or unless we redeem or exchange the Rights at an earlier time, in each case, as described below.

The purchase price payable, and the number of Preferred Shares or other securities or property issuable, upon exercise of the Rights are subject to adjustment from time to time to prevent dilution (i) in the event of a stock dividend on, or a subdivision, combination or reclassification of, the Preferred Shares, (ii) upon the grant to holders of the Preferred Shares of certain rights or warrants to subscribe for or purchase Preferred Shares at a price, or securities convertible into Preferred Shares with a conversion price, less than the then current market price of the Preferred Shares or (iii) upon the distribution to holders of the Preferred Shares of evidences of indebtedness or assets (excluding regular periodic cash dividends paid out of earnings or retained earnings or dividends payable in Preferred Shares) or of subscription rights or warrants (other than those referred to above).

The number of outstanding Rights and the number of one one-thousandths of a Preferred Share issuable upon exercise of each Right are also subject to adjustment in the event of a stock split of the common stock or a stock dividend on the common stock payable in shares of common stock or subdivisions, consolidations or combinations of the common stock occurring, in any such case, prior to the Distribution Date.

Preferred Shares purchasable upon exercise of the Rights will not be redeemable. Each holder of Preferred Shares will receive a quarterly dividend payment of 1,000 times the dividend declared per share of common stock. If we liquidate, the holders of the Preferred Shares will be entitled to an aggregate payment of 1,000 times the aggregate payment made per share of common stock. Each Preferred Share will have 1,000 votes, voting together with the common stock. If we merge, consolidate or are a party to another transaction where shares of common stock are exchanged, each holder of Preferred Shares will have the right to receive 1,000 times the amount received per share of common stock. These rights are protected by customary antidilution provisions.

Because of the Preferred Shares’ dividend, liquidation and voting rights, the value of the one one-thousandth of a Preferred Share purchasable upon exercise of each Right should be similar in value to one share of our common stock.

If any person becomes an Acquiring Person, each holder of a Right, other than Rights beneficially owned by the Acquiring Person and its affiliates and associates (which will thereafter be void), will thereafter have the right to receive upon exercise that number of shares of common stock having a market value of two times the exercise price of the Right. If, at any time after a Person becomes an Acquiring Person, we are acquired in a merger or other business combination transaction or 50% or more of our consolidated assets or earning power are sold, proper provision will be made so that each holder of a Right will thereafter have the right to receive, upon the exercise thereof at the then current exercise price of the Right, that number of shares of common stock of the person with whom we have engaged in the transaction described above (or its parent) which at the time of such transaction will have a market value of two times the exercise price of the Right.

If we do not have sufficient shares of authorized common stock to issue the number of shares of common stock required, or if our board of directors chooses, we will deliver upon payment of the exercise price of a Right an amount of cash or securities or other assets equivalent in value to the shares of common stock issuable upon exercise of a Right; provided that, if we fail to meet this obligation within 30 days following the first occurrence of an event triggering the right to purchase shares of common stock, we must deliver, upon exercise of a Right but without requiring payment of the exercise price then in effect, shares of common stock (to the extent available) and then, if necessary, Preferred Shares (to the extent available) and then, if necessary, cash equal in value to the difference between the value of the shares of common stock otherwise issuable upon the exercise of a Right and the exercise price then in effect. Our board of directors may extend the 30-day period described above for up to an additional 60 days to permit the taking of action that may be necessary to authorize sufficient additional shares of common stock to permit the issuance of shares of common stock upon the exercise in full of the Rights.

At any time after any person becomes an Acquiring Person and before the acquisition by any person or group of a majority of the outstanding shares of common stock, our board of directors may exchange the Rights (other than Rights owned by such person or group which have become void), in whole or in part, for shares of common stock or Preferred Shares at an exchange ratio of one share of common stock, or a fractional Preferred Share (or other preferred stock) of the same value as a share of common stock, per Right (subject to adjustment).

With some exceptions, no adjustment in the Purchase Price will be required until cumulative adjustments require an adjustment of at least 1% in such Purchase Price. No fractional Preferred Shares or shares of common stock will be issued (other than fractions that are integral multiples of one one-thousandth of a Preferred Share, which may, at our election, be evidenced by depositary receipts) and instead, an adjustment in cash will be made based on the current market price of the Preferred Shares or the shares of common stock.

At any time before any person becomes an Acquiring Person, our board of directors may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right (the "Redemption Price") payable, at our option, in cash, shares of common stock or such other form of consideration as our board of directors may choose. The redemption of the Rights may be made effective at the time and in the manner that our board of directors in its sole discretion may choose. Immediately upon any redemption of the Rights, the right to exercise the Rights will terminate and the only right of the holders of Rights will be to receive the Redemption Price.

For so long as the Rights are then redeemable, we may amend the Rights Agreement in any manner except that we may not change the Redemption Price. After the Rights are no longer redeemable, we may amend the Rights Agreement in any manner that does not negatively affect the interests of Rights holders, except that we may not change the Redemption Price.

Until a Right is exercised, the Right holder will have no rights as our stockholder, including, without limitation, the right to vote at our meetings or to receive dividends from us.

Massachusetts Law

Massachusetts Anti-Takeover and Related Statutes

Control Share Acquisition Law. Under Chapter 110D of the Massachusetts General Laws governing "control share acquisitions," any shareholder of certain publicly-held Massachusetts corporations who acquires certain ranges of voting power — one-fifth or more but less than one-third of all voting power, one-third or more but less than a majority of all voting power, or a majority or more of all voting power — may not (except in certain transactions) vote such stock unless the shareholders (excluding the shares held by the interested shareholders) of the corporation so authorize. As permitted by Chapter 110D, our amended and restated by-laws, as amended, include a provision which excludes us

from the applicability of that statute.

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Business Combination Statute. Chapter 110F of the Massachusetts General Laws, entitled "Business Combinations with Interested Shareholders," applies to publicly-held Massachusetts corporations with 200 or more shareholders of record. Generally, this statute prohibits such Massachusetts corporations from engaging in a "business combination" with an "interested shareholder" for a period of three years following the date of the transaction in which the person becomes an interested shareholder unless (a) the interested shareholder obtains the approval of the corporation's board of directors prior to becoming an interested shareholder; (b) the interested shareholder acquires at least 90% of the voting stock of the corporation (excluding shares held by certain affiliates of the corporation) outstanding at the time he becomes an interested shareholder; or (c) the business combination is both approved by the board of directors and authorized at an annual or special meeting of shareholders by the holders of at least two-thirds of the outstanding voting stock of the corporation (excluding shares held by the interested shareholder). An "interested shareholder" is a person who, together with affiliates and associates, owns (or at any time within the prior three years did own) 5% or more of the outstanding voting stock of the corporation. A "business combination" includes, among other transactions, a merger, stock or asset sale and other transactions resulting in a financial benefit to the shareholder. Our restated articles of organization, as amended, and amended and restated by-laws, as amended, do not expressly provide for opting out of the provisions of Chapter 110F. As a result, the application of this statute to us could discourage or make it more difficult for any person or group of persons to attempt to obtain control over us. We may at any time amend our restated articles of organization, as amended, or amended and restated by-laws, as amended, to elect not to be governed by Chapter 110F, by a vote of the holders of a majority of our outstanding common stock, but such an amendment would not be effective for 12 months and would not apply to a business combination with any person who became an interested shareholder prior to the date of the amendment.

Certain Provisions of Our Restated Articles of Organization, as amended, Amended and Restated By-Laws, as amended, and Shareholder Rights Plan

Our restated articles of organization, as amended, include several provisions which may render more difficult an unfriendly tender offer, proxy contest, merger or other change in control of our ownership.

Preferred Stock. Our restated articles of organization, as amended, permit our board of directors to issue preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof, without further vote or action by the shareholders. The issuance of preferred stock may have the effect of delaying, deferring or preventing our change in control and may adversely affect the voting and other rights of the holders of our common stock. See "Preferred Stock" and "Shareholders Rights Plan" above.

Classification of Board of Directors. Our restated articles of organization, as amended, provide for the classification of our board of directors into three classes, with the classes being elected for staggered three-year terms. At each annual meeting of shareholders, directors will be elected to succeed those in the class whose term then expires, and each elected director shall serve for a term expiring at the third succeeding annual meeting of shareholders after such director's election, and until the director's successor is elected and qualified. Thus, directors stand for election only once in three years. This provision also restricts the ability of shareholders to enlarge the board of directors. Changes in the number of directors may be effected by a vote of a majority of the Continuing Directors (as defined in our restated articles of organization, as amended) or by the shareholders by vote of at least 80% of our outstanding common stock, voting as a single class. Under this provision, directors may only be removed with or without cause by the affirmative vote of the holders of at least 80% of the combined voting power of the outstanding shares of our common stock, voting together as a single class, or upon the vote of a majority of the Continuing Directors.

Fair Price Provision. Our restated articles of organization, as amended, contain a "Fair Price Provision" that is intended to protect shareholders who do not tender their shares in a takeover bid by guaranteeing them a minimum price for their shares in any subsequent attempt to purchase such remaining shares at a price lower than the acquirer's original acquisition price. The Fair Price Provision requires the affirmative vote of the holders of at least 80% of our

outstanding common stock for certain business combinations with a Related Person (as defined in our restated articles of organization, as amended), unless specified price criteria and procedural requirements are met or the business combination is approved by a majority of the Continuing Directors. Continuing Director is defined in our restated articles of organization, as amended, to include any director (i) who is not an affiliate of any beneficial owner of 5% of the voting power of our outstanding voting stock, and (ii) who served as a director before such beneficial owner acquired his 5% beneficial ownership interest. Any successor of a Continuing Director who is unaffiliated with a 5% beneficial owner and who is recommended to succeed a Continued Director by a majority of the Continuing Directors is also a Continuing Director. A Related Person includes a person who, together with affiliates and associates, beneficially owns more than 5% our outstanding common stock.

Shareholder Rights Plan. Under the Rights Agreement described above, each outstanding share of common stock has attached to it one purchase right which entitles the holder to purchase from us one one-thousandth of a share of Series A Junior Participating Preferred Stock at a price of \$45.00, subject to adjustment. This could prevent or delay a change in control of our ownership.

Indemnification Provision. Our restated articles of organization, as amended, provide that we may, either in our bylaws or by contract, provide for the indemnification of our directors, officers, employees and agents, by whomever elected or appointed, to the fullest extent permitted by applicable law, as it may be amended from time to time. Our amended and restated bylaws, as amended, authorize us to indemnify our directors, officers, employees, and agents. Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers or persons controlling the registrant pursuant to the foregoing provisions, the registrant has been informed that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is therefore unenforceable.

MARKET FOR COMMON EQUITY AND RELATED STOCKHOLDER MATTERS

Market Information

Our common stock is presently quoted on The NASDAQ Capital Market under the symbol "PBIO." On March 14, 2012, the last reported sale price of our common stock on The NASDAQ Capital Market was \$0.59 per share. The market for our common stock is limited and volatile. The following table sets forth the range of high and low bid quotations or high and low closing prices, as applicable, for our common stock for each of the periods indicated as reported by The NASDAQ Capital Market. The prices quoted on The NASDAQ Capital Market reflect inter-dealer prices, without retail mark-up, mark-down or commissions. The NASDAQ Capital Market prices listed below may not represent actual transaction prices. There is no established public trading market for the Series E preferred shares or the Class A Warrants or the Class B Warrants and we do not expect a market to develop.

| | Period Ended March 14, 2012 | High | Low |
|--|--------------------------------------|--------|--------|
| First Quarter (through March 14, 2012) | | \$0.94 | \$0.50 |

| | Year Ended December 31, 2011 | High | Low |
|---------------|---------------------------------------|--------|--------|
| First Quarter | | \$1.53 | \$1.11 |

Second Quarter \$1.25 \$0.91
Third Quarter \$1.15 \$0.62
Fourth Quarter \$0.96 \$0.51

Year
Ended
December
31, 2010
High Low

First Quarter \$1.97 \$1.36
Second Quarter \$1.84 \$1.02
Third Quarter \$1.77 \$1.09
Fourth Quarter \$2.29 \$1.24

The table above shows only historical comparisons. The comparisons may not provide meaningful information to you in determining whether to purchase our Series E preferred shares and Class A Warrants and Class B Warrants because our Series E preferred shares and Class A Warrants and Class B Warrants are not traded on any exchange. You are urged to obtain current market quotations for our common stock and to review carefully the other information contained in this prospectus and the registration statement of which this prospectus is a part.

Holders of Record

As of March 14, 2012, there were approximately 226 registered holders and 1,400 beneficial holders of shares of our common stock.

Dividend Policy

Since our incorporation in Massachusetts in August 1978, we have not paid or declared any cash dividends on our common stock. We currently intend to retain any earnings for future growth and, therefore, do not expect to pay cash dividends on our common stock in the foreseeable future. However, we are required to pay a dividend on our Series C Convertible Preferred Stock at the rate of 5% per year of the purchase price paid for the Series C Convertible Preferred Stock, payable, either in cash or in shares of common stock at our option, semi-annually within 45 days of each of June 30 and December 31. In addition, the Series E preferred shares included in this offering are entitled to a quarterly dividend at a rate of 5% per year until _____, 2015 as described in the section "Description of Securities." Further, in the event dividends are paid on the Series E preferred shares, holders of our Series C Convertible Preferred stock will also be entitled to be paid dividends in an amount equal to the greater of the amount of dividends then accrued and unpaid on each share of Series C Convertible Preferred Stock or the amount of any dividend payable on the Series E preferred shares (on a common stock equivalent basis).

Equity Compensation Plan

We maintain a number of equity compensation plans for employees, officers, directors and other entities and individuals whose efforts contribute to our success. The table below sets forth certain information as of our fiscal year ended December 31, 2011 regarding the shares of our common stock available for grant or granted under our equity compensation plans.

| Plan Category | Number of securities to be issued upon exercise of outstanding | Weighted-average exercise price of outstanding options | Number of securities remaining available for future issuance |
|---------------|--|--|--|
|---------------|--|--|--|

| | options | | under equity compensation plans |
|---|-----------|--------|---------------------------------------|
| Equity compensation plans approved by security holders(1) | 1,508,500 | \$2.34 | 394,500 |

(1) Includes the following plans: 1999 Non-Qualified Stock Option Plan and 2005 Equity Incentive Plan.

For additional information regarding our equity compensation plans, please see Note 8 in the Notes to Consolidated Financial Statements for the fiscal year ended December 31, 2011 included elsewhere in this prospectus.

Plan of Distribution

Ladenburg Thalmann & Co. Inc., which we refer to herein as the Placement Agent, has agreed to act as our exclusive Placement Agent in connection with this offering subject to the terms and conditions of the Placement Agency Agreement dated _____. The Placement Agent is not purchasing or selling any units offered by this prospectus nor is it required to arrange the purchase or sale of any specific number or dollar amount of units, but has agreed to use its best efforts to arrange for the sale of all of the units offered hereby. Therefore, we will enter into a purchase agreement directly with investors in connection with this offering and we may not sell the entire amount of units offered pursuant to this prospectus. There can be no assurance that we will sell the entire amount of units offered pursuant to this prospectus.

Confirmations and definitive prospectuses will be delivered, or otherwise made available, to all purchasers who agree to purchase units, informing the purchasers of the closing date as to such units. Purchasers will also be informed of the date and manner in which they must transmit the purchase price for their units.

On such closing date, the following will occur:

- we will receive funds in the amount of the aggregate purchase price of the units being sold by us on such closing date;
- we will deliver Series E preferred shares and the Class A Warrants and Class B Warrants being sold on such closing date; and
- we will pay the Placement Agent, a Placement Agent fee in accordance with the terms of our Placement Agency Agreement.

We have agreed to pay the Placement Agent a Placement Agent's cash fee equal to 9.0% of the gross proceeds of the offering. The maximum aggregate gross proceeds of the offering is \$_____. The additional \$_____ of securities being registered pursuant to this prospectus are for shares of common stock issuable in lieu of cash dividend and make-whole payments on the Series E preferred shares, as described in the section titled "Description of Series E Preferred Shares – Dividends and Make-Whole Payments". We will receive no proceeds from the issuance of such shares of common stock and the Placement Agent shall receive no commission on such issuance. Subject to compliance with FINRA Rule 5110(f)(2)(D), we have also agreed to reimburse the Placement Agent's expenses up to a maximum of 0.5% of the gross proceeds raised in the offering, but in no event more than \$60,000.

We have also agreed to issue the Placement Agent warrants to purchase shares of our common stock. The warrants will entitle the Placement Agent to purchase the number of shares of common stock equal to 3.0% of the number of shares of common stock to which the Series E preferred shares are convertible. The warrants will be exercisable at a price per share equal to 125% of the conversion price per share of the Series E preferred shares or \$_____ per share and the expiration date of such warrants shall be the five year anniversary of the effective date of the registration statement pursuant to which this offering is made. Pursuant to FINRA Rule 5110(g)(1), neither the Placement Agent warrants nor any shares of common stock issued upon exercise of the Placement Agent warrants may be sold, transferred, assigned, pledged, or hypothecated, or be subject to any hedging, short sale, derivative, put, or call transaction that would result in the effective economic disposition of such securities by any person for a period of 180 days immediately following the date hereof, except the transfer of any security:

- by operation of law or by reason of our reorganization;
- to any FINRA member firm participating in the offering and the officers and partners thereof, if all securities so transferred remain subject to the lock-up restriction described above for the remainder of the time period;
- if the aggregate amount of our securities held by the Placement Agent or related person does not exceed 1% of the securities being offered;
- that is beneficially owned on a pro-rata basis by all equity owners of an investment fund, provided that no participating member manages or otherwise directs investments by the fund, and participating members in the aggregate do not own more than 10% of the equity in the fund; or

the exercise or conversion of any security, if all securities received remain subject to the lock-up restriction set forth above for the remainder of the time period.

The following table shows the per unit and total Placement Agent's fees we will pay to the Placement Agent in connection with the sale of the Series E Preferred shares and the Class A Warrants and Class B Warrants offered pursuant to this prospectus assuming the purchase of all of the units offered hereby.

Per unit Placement Agent's fees \$-
Maximum offering total \$-

Because there is no minimum offering amount required as a condition to the closing in this offering, the actual total offering commissions, if any, are not presently determinable and may be substantially less than the maximum amount set forth above.

Our obligations to issue and sell units to the purchasers are subject to the conditions set forth in the securities purchase agreement, which may be waived by us at our discretion. A purchaser's obligation to purchase units is subject to the conditions set forth in the securities purchase agreement as well, which may be waived by the purchaser.

We have agreed to indemnify the Placement Agent against certain liabilities, including liabilities under the Securities Act of 1933, as amended, or the Securities Act. We may also be required to contribute to payments the Placement Agent may be required to make in respect of such liabilities.

We are offering pursuant to this prospectus up to ____ of our units, but there can be no assurance that the offering will be fully subscribed. Accordingly, we may sell substantially less than ____ of our units, in which case our net proceeds would be substantially reduced and the total Placement Agent fees may be substantially less than the maximum total set forth above.

We estimate the total offering expenses of this offering that will be payable by us, excluding the Placement Agent's fees and expenses, will be approximately \$300,000, which includes our registration, legal, accounting and printing costs and various other fees.

The foregoing does not purport to be a complete statement of the terms and conditions of the Placement Agency Agreement and the securities purchase agreement. A copy of the form of securities purchase agreement with the investors is included as an exhibit to the registration statement of which this prospectus forms a part. See "Where You Can Find More Information" on page 76 of this prospectus.

The Placement Agent may be deemed to be an underwriter within the meaning of Section 2(a)(11) of the Securities Act, and any commissions received by it and any profit realized on the resale of the units sold by it while acting as principal might be deemed to be underwriting discounts or commissions under the Securities Act. As an underwriter, the Placement Agent would be required to comply with the Securities Act and the Exchange Act, including, without limitation, Rule 415(a)(4) under the Securities Act and Rule 10b-5 and Regulation M under the Exchange Act. These rules and regulations may limit the timing of purchases and sales of shares of common stock and warrants by the Placement Agent acting as principal. Under these rules and regulations, the Placement Agent:

- may not engage in any stabilization activity in connection with our securities; and
- may not bid for or purchase any of our securities or attempt to induce any person to purchase any of our securities, other than as permitted under the Exchange Act, until it has completed its participation in the distribution.

Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis should be read in conjunction with our Consolidated Financial Statements and related Notes included elsewhere in this prospectus. Some of the information contained in this Management's Discussion and Analysis of Financial Condition and Results of Operations and elsewhere in this prospectus may contain forward-looking statements based on management's current expectations and projections about future events. There can be no assurance that actual results, outcomes or business conditions will not differ materially from those expected or projected in such forward-looking statements as a result of various factors, including, among others, trends in the demand for our products and services, trends in the industries that consume our products and services, global economic conditions, especially as they impact our markets, our ability to develop new products and services and other potential risks and uncertainties discussed in the Risk Factors section of this prospectus. The dollar amounts included in this Management's Discussion and Analysis of Financial Condition and Results of Operations are in thousands unless otherwise indicated. References to fiscal years refer to the Company's fiscal year which ends on December 31.

Overview

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming, and in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking, the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called pressure cycling technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant, and microbial sources.

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels - at controlled temperatures and specific time intervals - to rapidly and repeatedly control the interactions of bio-molecules, such as DNA, RNA, proteins, lipids, and small molecules. Our laboratory instrument, the Barocycler®, and our internally developed consumables product line, including PULSE (Pressure Used to Lyse Samples for Extraction) Tubes, other processing tubes, and application specific kits (which include consumable products and reagents) together make up our PCT Sample Preparation System, or PCT SPS.

We have experienced negative cash flows from operations with respect to our pressure cycling technology business since our inception. As of December 31, 2011, we did not have adequate working capital resources to satisfy our current liabilities. Based on our current projections, including equity financing subsequent to December 31, 2011, we believe our current cash resources will enable us to extend our cash resources until April 2012.

As a result, the audit report issued by our independent registered public accounting firm on our audited financial statements for the fiscal year ended December 31, 2011 contains an explanatory paragraph regarding our ability to continue as a going concern. The audit report issued by our independent registered public accounting firm for our

financial statements for the fiscal year ended December 31, 2011 states that the auditing firm has substantial doubt in our ability to continue as a going concern due to the risk that we may not have sufficient cash and liquid assets at December 31, 2011 to cover our operating and capital requirements for the next twelve-month period; and if sufficient cash cannot be obtained, we would have to substantially alter, or possibly even discontinue, operations. The accompanying financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Such an opinion from our independent registered accounting firm could adversely affect our ability to obtain additional financing on favorable terms, if at all, as such an opinion may cause investors to have reservations about our long-term prospects, and may adversely affect our relationships with customers. There can be no assurance that our auditing firm will not qualify its opinion in the future. If we cannot successfully continue as a going concern, our stockholders may lose their entire investment in us.

Management has developed a plan to continue operations. This plan includes further reductions in expenses and obtaining equity or debt financing including our most recently completed financing in February 2012, in which we sold units consisting of shares of restricted common stock and warrants to purchase shares of common stock for net proceeds of approximately \$765,000, which included the conversion of \$387,547 in principal and interest from convertible promissory notes. Although we have successfully completed equity financings and reduced expenses in the past, we cannot assure you that our plans to address these matters in the future will be successful. Additional financing may not be available to us on a timely basis, if at all, or on terms acceptable to us. In the event we are unable to raise sufficient funds on terms acceptable to us, we may be required to:

- severely limit or cease our operations or otherwise reduce planned expenditures and forego other business opportunities, which could harm our business. The financial statements included in this prospectus do not include adjustments that may be required in the event of the disposal of assets or the discontinuation of the business;
- obtain financing with terms that may have the effect of diluting or adversely affecting the holdings or the rights of the holders of our capital stock; or
- obtain funds through arrangements with future collaboration partners or others that may require us to relinquish rights to some or all of our technologies or products.

We currently focus the majority of our resources in the area of biological sample preparation, referring to a wide range of activities that precede scientific analysis performed by scientists worldwide working in biological life sciences research.

Within the broad field of biological sample preparation, we focus the majority of our product development efforts in three specific areas: mass spectrometry, forensics, and histology.

Mass Spectrometry. A mass spectrometer is a laboratory instrument used in the analysis of biological samples in life sciences research. We believe that mass spectrometry is a several billion dollar market, and that PCT offers significant advantages in speed and quality compared to current techniques used in the preparation of samples for mass spectrometry analysis.

Forensics. The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas and Florida International University have reported improvements in DNA yield from forensic samples (e.g., bone, hair) using PCT in the sample preparation process. We believe that that PCT may be capable of differentially extracting DNA from sperm and (female) epithelial cells in swabs collected from rape victims and stored in rape kits. We believe that there are many completed but untested rape kits that remain untested for reasons such as cost, time, and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing quality, safety, and speed.

Histology. The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is formalin-fixation followed by paraffin-embedding (“FFPE”). We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

We view federal agency grants to be an important part of our business plan. These types of grants allow us to bill the federal agency for work that we are planning to perform as part of the development and commercialization of our technology. We generally start by submitting initial grant requests that are in response to requests for proposals (“RFPs”) from the federal government through their Small Business Innovation Research (“SBIR”) program. Initial (“SBIR Phase I”) grants are meant to fund approved research projects for six months, and generally have budgets of approximately \$100,000 to \$150,000. Additionally, because our work in SBIR Phase I grants has been successful, we have applied, and may in the future apply, for larger National Institutes of Health (“NIH”) SBIR Phase II grants. Such larger grants are typically for a two-year period and are in excess of \$750,000 to support significant research projects in areas we would otherwise expect to support with internal funds should SBIR Phase II grants not be awarded. To date we have been awarded two NIH SBIR Phase I grants and one SBIR Phase II grant.

In March 2010, the U.S. Army Medical Research Acquisition Activity (“USAMRAA”) awarded us an SBIR Phase I grant for approximately \$100,000. We completed the work on the grant in October 2010.

During the second half of 2011, we commenced work on a new NIH SBIR Phase I grant in the approximate amount of \$160,000, and on a Department of Defense SBIR Phase II grant in the approximate amount of \$750,000.

Adjustment of Amounts Previously Reported on Warrant Valuations

At December 31, 2011, we reviewed our accounting for the valuation of the modifications in the third quarter of 2011 made to the warrants issued in connection with the Series A Convertible Preferred Stock and Series B Convertible Preferred Stock private placements. We determined that the valuation methodology used should be adjusted. As a result of the change in methodology, the revised valuations differ from those previously reported in the unaudited financial statements included in our Quarterly report on Form 10-Q for the period ended September 30, 2011. There is no material effect on the audited financial statements for the year ended December 31, 2011.

The effect of this adjustment is an increase in a deemed dividend in determining Net loss to Common Shareholders for the period ending September 30, 2011. There is no material effect on reported Stockholders’ Equity, Net Loss, or Cash Flows. The effect on amounts as previously reported is as follows:

| | September 30, 2011 | | |
|--|---------------------------|--------------|----------|
| | As Previously Reported | As Adjusted | % Change |
| Balance Sheets (Stockholders' Equity) | | | |
| Warrants to acquire preferred stock and common stock | 1,823,852 | 2,203,101 | 21% |
| Additional paid-in capital | 12,802,217 | 12,802,217 | 0% |
| Accumulated deficit | (14,545,260) | (14,924,509) | 3% |
| Stockholders' equity | 145,388 | 145,388 | 0% |

| | For the Three Months Ended September 30, 2011 | | |
|--|--|-------------|----------|
| | As Previously Reported | As Adjusted | % Change |
| Statements of Operations | | | |
| Net loss | (\$561,723) | (\$561,723) | 0% |
| Net loss applicable to common shareholders | (953,846) | (1,333,095) | 40% |
| Net loss per share attributable to common shareholders | (0.15) | (0.21) | 42% |

| | For the Nine Months Ended September 30, 2011 | | |
|--|---|---------------|----------|
| | As Previously Reported | As Adjusted | % Change |
| Statements of Operations | | | |
| Net loss | (\$2,153,269) | (\$2,153,269) | 0% |
| Net loss applicable to common shareholders | (3,092,843) | (3,472,092) | 12% |
| Net loss per share attributable to common shareholders | (0.50) | (0.56) | 11% |

We have analyzed the impact of these adjustments and concluded that it is not material with respect to any financial reporting period after taking into consideration the requirements of the SEC Staff Bulletin No. 99. Further, these adjustments do not have an impact on amounts previously reported, operating trends or publicly reported results such as would have a material effect on investor expectations.

Results of Operations

Year Ended December 31, 2011 as compared to 2010

Revenue

We had total revenue of \$987,729 in the year ended December 31, 2011 as compared to \$1,340,032 in the prior year.

PCT Products, Services, Other. Revenue from the sale of PCT products and services was \$767,765 in 2011 as compared to \$877,567 in 2010. We generated consumable sales of \$102,209 for the year ended December 31, 2011 compared to \$104,924 during the prior year, a decrease of \$2,715 or 2.6%. The number of PCT sales and active leases decreased during 2011 compared to 2010. The decrease in revenue from PCT sales and leases during 2011 was partially offset by sales of our SG3 Shredder Kit. Our new distributor for the SG3 Shredder Kit purchased 12 units during 2011. Our domestic and foreign installations of PCT systems as of December 31, 2011 and 2010 are set forth in the table below.

Unit Installations-Sales and Lease Arrangements

| | 2011 | 2010 |
|---------------------|------|------|
| Domestic | 25 | 42 |
| International | 6 | 8 |
| Total Installations | 31 | 50 |

The decrease in PCT instrument installations and consumables was due to several factors. Our Vice President of Sales resigned in early May 2011. His responsibilities included direct sales in the New England territory and supervision of three Sales Directors. Sales and marketing activities were further limited during the first half of 2011 compared to the same period in 2010 as a result of our limited financial resources. The decrease in PCT consumable sales was due primarily to significant purchases of PULSE Tubes (both Non-Disk and Shredder) by certain clients during 2010 whose studies ended prior to the second quarter of 2011.

Grant Revenue. During 2011, we recorded \$219,964 of grant revenue as compared to \$462,465 in 2010. We commenced work in the third quarter of 2011 on a Phase I grant received from the NIH and a Phase II grant received from the Department of Defense. During 2010, we completed a SBIR Phase II grant previously granted to us.

Cost of PCT Products and Services

The cost of PCT products and services was \$342,865 for the year ended December 31, 2011, compared to \$376,514 in 2010. Our gross profit margin on PCT products and services decreased to 55% for the year ended December 31, 2011, as compared to 57% for 2010. The decrease in the gross profit margin on PCT products and services was due primarily to sales of some fully depreciated Barocycler units in the prior year and discounting to our distributors.

The relationship between the cost of PCT products and services and PCT revenue depends greatly on the mix of instruments we sell, the quantity of such instruments, and the mix of consumable products that we sell in a given period.

Research and Development

Research and development expenditures decreased to \$969,473 during 2011 from \$1,232,566 in 2010 by \$263,093, or 21%. This decrease resulted primarily from the completion of employee stock option vesting and discontinued research by a collaborative partner funded through our SBIR Phase II grant, which was completed in 2010.

Research and development expense included \$39,375 and \$73,097 of non-cash, stock-based compensation in 2011 and 2010, respectively.

Selling and Marketing

Selling and marketing expenses decreased to \$931,073 in 2011 from \$1,204,892 in 2010, by \$273,819, or 23%. This decrease was primarily due to the completion of vesting of a significant number of employee stock options, reduced marketing activities and employee cost savings relating to the departure of our Vice President of Sales.

Selling and marketing expense included \$43,201 and \$72,609 of non-cash, stock-based compensation expense in 2011 and 2010, respectively.

General and Administrative

General and administrative costs were \$2,034,458 in the year ended December 31, 2011, as compared to \$1,924,814 in 2010, an increase of \$109,644 or 6%. We incurred increased legal fees in 2011 relating to contract negotiations, our securities offerings, and matters relating to the annual shareholder meeting. We incurred increased audit fees relating to accounting matters associated with our completed private placements and our Registration Statement on Form S-3 for our registered direct offering completed in November 2011.

During the years ended December 31, 2011 and 2010, general and administrative expense included \$39,398 and \$127,475 of non-cash, stock-based compensation expense, respectively.

Operating Loss

Our operating loss was \$3,290,140 for the year ended December 31, 2011 as compared to \$3,398,754 for the comparable period in 2010, a decrease of \$108,614 or 3%. The decreased operating loss resulted primarily from lower non-cash, stock-based compensation expense, and reduced spending offset by lower sales activity.

Other income (expense), net

Interest (Expense) Income

Interest expense totaled \$138,071 for the year ended December 31, 2011 as compared to interest income of \$2,303 for the year ended December 31, 2010. We recorded \$29,071 of interest expense for the year ended December 31, 2011 related to our short-term loans. We also amortized approximately \$109,000 of imputed interest against the debt discount on these short-term loans relating to warrants issued with these loans.

Therapeutic Discovery Credit

In November 2010, we were awarded a \$244,000 grant under the Qualifying Therapeutic Discovery Project (QTDP) program under The Patient Protection and Affordable Care Act of 2010 (PPACA).

Change in Fair Value of Warrant Derivative Liability

During the year ended December 31, 2011, we recorded non-cash income of \$430,423 for warrant revaluation expense in our consolidated statements of operations due to a decrease in the fair value of the warrant liability related to warrants issued in our Series C private placement and Series D registered direct offering. This decrease in fair value was primarily due to a decrease in the price per share of our common stock on December 31, 2011 as compared to the date of issuance of the warrants.

Income Taxes

In 2010, we realized a tax benefit of \$23,710 related to legislation within the Housing Assistance Tax Act of 2008 which enabled us to claim a refundable tax credit in exchange for foregoing bonus depreciation.

Net Loss

During the year ended December 31, 2011, we recorded a net loss applicable to common shareholders of \$5,107,661 or \$(0.77) per share, as compared to \$3,630,826 or \$(1.35) per share in 2010. We recorded \$1,006,574 in the current year relating to the beneficial conversion calculation associated with the intrinsic value of the Series C Convertible Preferred Stock and Series D Convertible Preferred Stock. In the prior year, we recorded \$154,389 for a beneficial conversion feature on the Series B Convertible Preferred Stock. We paid approximately \$66,000 in dividends to holders of the Series B Convertible Preferred Stock in the current year. We also recorded a deemed dividend of \$704,844 in connection with warrant modifications done in the third quarter of 2011. See Note 2 of the Notes to Consolidated Financial Statements under the "Computation of Loss per Share" heading.

Liquidity and Financial Condition

As of December 31, 2011, we did not have adequate working capital resources to satisfy our current liabilities. In February 2012, we raised an aggregate of \$800,000 in a private placement of units consisting of a total of 971,867 shares of restricted common stock and 485,937 warrants to purchase restricted common stock. Of the \$800,000 invested in the private placement, \$412,453 was received in cash and \$387,547 was from the conversion of outstanding principal and interest on convertible promissory notes we issued in 2011. Based on our current projections, including equity financing subsequent to December 31, 2011, we believe our current cash resources will enable us to extend our cash resources until April 2012.

We will need substantial additional capital to fund our operations in periods beyond April 2012. If we are able to obtain additional capital or otherwise increase our revenues, we may increase spending in specific research and development applications and engineering projects and may hire additional sales personnel or invest in targeted marketing programs. In the event that we are unable to obtain financing on acceptable terms, or at all, we will likely be required to cease our operations, pursue a plan to sell our operating assets, or otherwise modify our business strategy, which could materially harm our future business prospects.

Net cash used in operating activities for the year ended December 31, 2011 was \$2,141,863 as compared to \$2,872,180 for the year ended December 31, 2010. The prior period cash usage included an increase in Barocycler inventory of \$638,900 received from our supplier due to anticipated sales. Our accounts payable balance was \$890,676 as of December 31, 2011, as compared to \$234,568 as of December 31, 2010. This increase is due to our efforts to conserve cash for use in operating the business until we secure additional capital.

Net cash used in investing activities for the year ended December 31, 2011 was \$2,642 as compared to \$92,111 in the prior year. We purchased computer equipment in 2011 while we purchased tooling and Barocycler equipment for lease arrangements in the prior year.

Net cash provided by financing activities for the year ended December 31, 2011 was \$1,814,431 as compared to \$1,907,362 in the prior year. We raised approximately \$1.1 million in aggregate gross proceeds in 2011 from our Series C Convertible Preferred Stock private placement offset by approximately \$396,000 in offering costs excluding the issuance of additional warrants to the placement agent. The Series C Convertible Preferred Stock private placement was completed in two tranches. In April 2011, we completed the first tranche, pursuant to which we sold an aggregate of 55,048 units for a purchase price of \$15.00 per unit, resulting in gross proceeds to us of \$825,720. In June 2011, we completed the second tranche, pursuant to which we reduced the purchase price to \$12.50 per unit and we issued an additional 11,011 units to the purchasers who participated in the first tranche, without any additional gross proceeds to us. In the second tranche we also sold 22,039 units for a purchase price of \$12.50 per unit with gross proceeds of \$275,485. Each unit consisted of (i) one share of Series C Convertible Preferred Stock convertible into 10 shares of our Common Stock (subject to adjustment for stock splits, stock dividends, recapitalization, etc.), and (ii) a three-year warrant to purchase 10 shares of our Common Stock at a per share exercise price equal to the sum of (x) the Common Stock equivalent of the Series C Convertible Preferred Stock private placement unit purchase price (y) plus \$0.88. The warrants issued in this private placement are exercisable until the close of business on the third anniversary of the applicable closing date.

In the second half of 2011, we received six-month loans of \$412,000. Each of the loans has a term of six months, which may be extended with mutual consent of the parties. The interest rate under the promissory notes is 20% per annum. Under another promissory note, we are required to pay \$150,000 to a former placement agent prior to May 5 2012. The promissory note issued to the former placement agent is interest free, provided that, if the Company does not repay the principal amount on or before the maturity date, it will accrue interest at a rate of 18% per year.

In November 2011, we completed a registered direct offering, pursuant to which we sold an aggregate of 843 units for a purchase price of \$1,000 per unit, resulting in gross proceeds to us of \$843,000. Each unit consists of (i) one share of Series D Convertible Preferred Stock, \$0.01 par value per share convertible into 1,538.46 shares of our common stock and (ii) a five-year warrant to purchase approximately 614 shares of our common stock (which number of shares is equal to 39.9% of the purchase price of the units divided by \$0.65) at a per share exercise price of \$0.81 and will be exercisable beginning on or after May 10, 2012 through and including the close of business on May 10, 2017.

Our common stock is listed on The NASDAQ Capital Market. We previously received letters from the NASDAQ Stock Market LLC, or NASDAQ, on April 13, 2011, advising us that our stockholders' equity for the year ended December 31, 2010 had fallen below the minimum requirement for continued inclusion on The NASDAQ Capital Market and on August 15, 2011, advising us that, for the previous 30 consecutive business days, the bid price of our common stock had closed below the minimum \$1.00 per share requirement for continued inclusion on The NASDAQ Capital Market. On October 4, 2011, we received written notification from the Listing Qualifications Department of the NASDAQ, or NASDAQ, stating that our common stock is subject to delisting from The NASDAQ Capital Market, pending our opportunity to request a hearing before a NASDAQ Listing Qualifications Panel (the "Panel"). We attended a hearing before the Panel on November 17, 2011 to consider further our plan to bring the Company into compliance with the stockholders' equity listing standard and the minimum \$1.00 per share requirement.

On December 7, 2011, we received notice that the Panel granted our request for continued listing on The NASDAQ Capital Market subject to, among other things, our demonstration of compliance with the applicable minimum stockholders' equity requirement of \$2.5 million by February 29, 2012. On February 15, 2012, we received notice from NASDAQ that the bid price of our common stock had not regained compliance with the minimum \$1.00 per share requirement as of February 13, 2012, 180 calendar days after NASDAQ's August 15, 2011 notice. We submitted a revised plan of compliance for the Panel's review and received a further extension of time to comply with the stockholders' equity requirement by March 23, 2012 and the minimum bid price requirement for a minimum of ten consecutive business days by April 9, 2012. Our plan of compliance includes, among other things, completing this offering and the possibility of effecting a reverse stock split if necessary. While we are diligently working to regain compliance with all applicable NASDAQ listing criteria, including the minimum stockholders' equity and minimum bid price of \$1.00 per share, there can be no assurance that the Panel will grant our request for a further extension of time for continued listing or that we will be able to successfully complete our plan to achieve compliance.

If we fail to comply with the listing standards applicable to issuers listed on The NASDAQ Capital Market by the deadline set forth above or any extension of such deadline, our common stock will be delisted from The NASDAQ Capital Market.

If we are unsuccessful in maintaining our NASDAQ listing, then we may pursue listing and trading of our shares of common stock on the Over-The-Counter Bulletin Board or another securities exchange or association with different listing standards than NASDAQ. We anticipate the change in listings may result in a reduction in some or all of the following, each of which could have a material adverse effect on our shareholders:

- the liquidity of our shares of common stock;
- the market price of our shares of common stock;
- our ability to obtain financing for the continuation of our operations;
- the number of institutional and other investors that will consider investing in our shares of common stock;
- the number of market makers in our shares of common stock;
- the availability of information concerning the trading prices and volume of our shares of common stock;
- and
- the number of broker-dealers willing to execute trades in our shares of common stock.

Commitments and Contingencies

Royalty Commitments

In 1996, we acquired our initial equity interest in BioSeq, Inc., which at the time was developing our original pressure cycling technology. BioSeq, Inc. acquired its pressure cycling technology from BioMolecular Assays, Inc. (“BMA”) under a technology transfer and patent assignment agreement. In 1998, we purchased all of the remaining outstanding capital stock of BioSeq, Inc., and at such time, the technology transfer and patent assignment agreement was amended to require us to pay BMA a 5% royalty on our sales of products or services that incorporate or utilize the original pressure cycling technology that BioSeq, Inc. acquired from BioMolecular Assays, Inc. We are also required to pay BMA 5% of the proceeds from any sale, transfer or license of all or any portion of the original pressure cycling technology. These payment obligations terminate in 2016. During the year ended December 31, 2011 and 2010, we incurred approximately \$21,090 and \$36,330, respectively in royalty expense associated with our obligation to BMA.

In connection with our acquisition of BioSeq, Inc., we licensed certain limited rights to the original pressure cycling technology back to BMA. This license is non-exclusive and limits the use of the original pressure cycling technology by BMA solely for molecular applications in scientific research and development and in scientific plant research and development. BMA is required to pay us a royalty equal to 20% of any license or other fees and royalties, but not including research support and similar payments, it receives in connection with any sale, assignment, license or other transfer of any rights granted to BMA under the license. BMA must pay us these royalties until the expiration of the patents held by BioSeq, Inc. in 1998, which we anticipate will be 2016. We have not received any royalty payments from BMA under this license.

Battelle Memorial Institute

In December 2008, we entered into an exclusive patent license agreement with the Battelle Memorial Institute ("Battelle"). The licensed technology is described in the patent application filed by Battelle on July 31, 2008 (US serial number 12/183,219). This application includes subject matter related to a method and a system for improving the analysis of protein samples, including through an automated system utilizing pressure and a pre-selected agent to obtain a digested sample in a significantly shorter period of time than current methods, while maintaining the integrity of the sample throughout the preparatory process. Pursuant to the terms of the agreement, we paid Battelle a non-refundable initial fee of \$35,000. In addition to royalty payments on net sales on "licensed products", we are obligated to make minimum royalty payments for each year that we retain the rights outlined in the patent license agreement and we are required to have our first commercial sale of the licensed products within one year following the issuance of the patent covered by the licensed technology. The minimum annual royalty was \$5,000 for 2010 and \$7,500 for 2011.

Target Discovery Inc.

In March 2010, we signed a strategic product licensing, manufacturing, co-marketing, and collaborative research and development agreement with Target Discovery Inc. ("TDI"). Under the terms of the agreement, we have been licensed by TDI to manufacture and sell a highly innovative line of chemicals used in the preparation of tissues for scientific analysis ("TDI reagents"). The TDI reagents were designed for use in combination with our pressure cycling technology. The companies believe that the combination of PCT and the TDI reagents can fill an existing need in life science research for an automated method for rapid extraction and recovery of intact, functional proteins associated with cell membranes in tissue samples. We owe a royalty fee of approximately \$1,200 for 2011.

Severance and Change of Control Agreements

Each of Mr. Schumacher, Dr. Ting, Dr. Lazarev, and Dr. Lawrence, executive officers of the Company, is entitled to receive a severance payment if terminated by us without cause. The severance benefits would include a payment in an

amount equal to one year of such executive officer's annualized base salary compensation plus accrued paid time off. Additionally, the officer will be entitled to receive medical and dental insurance coverage for one year following the date of termination.

Each of these executive officers, other than Mr. Schumacher, is entitled to receive a change of control payment in an amount equal to one year of such executive officer's annualized base salary compensation, accrued paid time off, and medical and dental coverage, in the event of a change of control of the Company. In the case of Mr. Schumacher, this payment would be equal to two years of annualized base salary compensation, accrued paid time off, and two years of medical and dental coverage. The severance payment is meant to induce the executive to become an employee of the Company and to remain in the employ of the Company, in general, and particularly in the occurrence of a change in control.

Investment Banking Agreement

On November 4, 2011, the Company entered into an agreement with a former placement agent, pursuant to which the Company and the placement agent released each other of their respective obligations under a prior investment banking agreement. In connection with this agreement, the Company issued the placement agent a promissory note with an original principal amount of \$150,000 with a maturity date of May 4, 2012. The promissory note is interest free, provided that, if the Company does not repay the principal amount on or before the maturity date, it will accrue interest at a rate of 18% per annum.

Lease Commitments

We lease building space under non-cancelable leases in South Easton, MA and in the Venture Development Center at the University of Massachusetts in Boston.

Following is a schedule by years of future minimum rental payments required under operating leases with initial or remaining non-cancelable lease terms in excess of one year as of December 31, 2011:

| | |
|---------------------------------|-----------|
| Year ending December 31: | |
| 2012 | \$117,600 |
| 2013 | 121,644 |
| Thereafter | - |
| Total minimum payments required | \$239,244 |

Critical Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of Pressure BioSciences, Inc., and its wholly-owned subsidiary PBI BioSeq, Inc.

Use of Estimates

To prepare our consolidated financial statements in conformity with accounting principles generally accepted in the United States of America, we are required to make significant estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. In addition, significant estimates were made in projecting future cash flows to quantify impairment of assets, deferred tax assets, the costs associated with fulfilling our warranty obligations for the instruments that we sell, and the estimates employed in our calculation of fair value of stock options awarded. We base our estimates on historical experience and on various other

assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from the estimates and assumptions used.

Revenue Recognition

We recognize revenue in accordance with FASB ASC 605, *Revenue Recognition*. Revenue is recognized when realized or earned when all the following criteria have been met: persuasive evidence of an arrangement exists; delivery has occurred and risk of loss has passed to the customer; the seller's price to the buyer is fixed or determinable; and collectability is reasonably assured.

Our current instruments, the Barocycler NEP3229 and NEP2320, require a basic level of instrumentation expertise to set-up for initial operation. To support a favorable first experience for our customers, we send a highly trained technical representative to the customer site to install every Barocycler that we sell, lease, or rent through our domestic sales force. The installation process includes uncrating and setting up the instrument, followed by introductory user training. Product revenue related to current Barocycler instrumentation is recognized upon the completion of the installation and introductory training process of the instrumentation at the customer location, for domestic and foreign installations. Product revenue related to sales of PCT instrumentation to our foreign distributors is recognized upon shipment through a common carrier. We provide for the expected costs of warranty upon the recognition of revenue for the sales of our instrumentation. Our sales arrangements do not provide our customers with a right of return. Product revenue related to our consumable products such as PULSE Tubes, MicroTubes, and application specific kits is recorded upon shipment through a common carrier. Shipping costs are included in sales and marketing expense. Any shipping costs billed to customers are recognized as revenue.

In accordance with FASB ASC 840, *Leases*, we account for our lease agreements under the operating method. We record revenue over the life of the lease term and we record depreciation expense on a straight-line basis over the thirty-six month estimated useful life of the Barocycler instrument. The depreciation expense associated with assets under lease agreement is included in the “Cost of PCT products and services” line item in our consolidated statements of operations. Many of our lease and rental agreements allow the lessee to purchase the instrument at any point during the term of the agreement with partial or full credit for payments previously made. We pay all maintenance costs associated with the instrument during the term of the leases.

Revenue from government grants is recorded when expenses are incurred under the grant in accordance with the terms of the grant award.

Our transactions sometimes involve multiple elements (i.e., products and services). Revenue under multiple element arrangements is recognized in accordance with FASB ASC 605-25 *Multiple-Element Arrangements* (“ASC 605”). When vendor specific objective evidence or third party evidence of selling price for deliverables in an arrangement cannot be determined, the Company develops a best estimate of the selling price to separate deliverables and allocates arrangement consideration using the relative selling price method. Additionally, this guidance eliminates the residual method of allocation. If an arrangement includes undelivered elements that are not essential to the functionality of the delivered elements, we defer the fair value of the undelivered elements with the residual revenue allocated to the delivered elements. Fair value is determined based upon the price charged when the element is sold separately. If there is not sufficient evidence of the fair value of the undelivered elements, no revenue is allocated to the delivered elements and the total consideration received is deferred until delivery of those elements for which objective and reliable evidence of the fair value is not available. We provide certain customers with extended service contracts with revenue recognized ratably over the life of the contract.

Intangible Assets

We have classified as intangible assets, costs associated with the fair value of certain assets of businesses acquired. Intangible assets relate to the remaining value of acquired patents associated with PCT. The cost of these acquired patents is amortized on a straight-line basis over sixteen years. We annually review our intangible assets for impairment. When impairment is indicated, any excess of carrying value over fair value is recorded as a loss. An impairment analysis of intangible assets as of December 31, 2011 concluded they were not impaired.

Long-Lived Assets and Deferred Costs

In accordance with FASB ASC 360-10-05, *Property, Plant, and Equipment*, if indicators of impairment exist, we assess the recoverability of the affected long-lived assets by determining whether the carrying value of such assets can be recovered through the undiscounted future operating cash flows related to the long-lived assets. If impairment is

indicated, we measure the amount of such impairment by comparing the carrying value of the asset to the fair value of the asset and record the impairment as a reduction in the carrying value of the related asset and a charge to operating results. While our current and historical operating losses and cash flow are indicators of impairment, we performed an impairment analysis at December 31, 2011 and determined that our long-lived assets were not impaired.

Warrant Derivative Liability

The warrants issued in connection with the Series C Convertible Preferred Stock private placement (the “Series C Warrants”) and warrants issued in connection with the registered direct offering of Series D Convertible Preferred Stock (the “Series D Warrants”) are measured at fair value and liability-classified because the Series C Warrants are entitled to certain rights in subsequent financings and the Series D Warrants contain “down-round protection” and therefore, do not meet the scope exception for treatment as a derivative under ASC 815, *Derivatives and Hedging*, (“ASC 815”). Since “down-round protection” is not an input into the calculation of the fair value of the warrants, the warrants cannot be considered indexed to the Company’s own stock which is a requirement for the scope exception as outlined under ASC 815. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of the gross proceeds of \$583,250 to the total warrants issued in the Series C private placement and \$283,725 to the warrants issued in the Series D registered direct offering. The fair value will be affected by changes in inputs to that model including our stock price, expected stock price volatility, the contractual term, and the risk-free interest rate. We will continue to classify the fair value of the warrants as a liability until the warrants are exercised, expire or are amended in a way that would no longer require these warrants to be classified as a liability, whichever comes first. The down-round protection for the Series C Warrants expires 12 months subsequent to the issuance of the Series C Units and the down-round protection for the Series D Warrants survives for the life of the Series D Warrants which ends in May 2017.

Recent Accounting Standards

The Financial Accounting Standards Board, or “FASB,” issued Accounting Standards Update, or ASU No. 2009-13, *Revenue Recognition (Topic 605) — Multiple-Deliverable Revenue Arrangements*, or (“ASU 2009-13”). ASU 2009-13 amends existing revenue guidance related to revenue arrangements with multiple deliverables to allow the use of companies’ estimated selling prices as the value for deliverable elements under certain circumstances and to eliminate the use of the residual method for allocation of deliverable elements. ASU 2009-13 is effective for fiscal years beginning on or after June 15, 2010, with earlier adoption permitted. We evaluated the impact of this standard on the financial statements and determined that there was no material impact.

In January 2010, the FASB issued ASU 2010-06 “*Fair Value Measurements and Disclosures*” (“ASU 2010-06”). ASU 2010-06 updated section ASC 820-10, Fair Value Measurements and Disclosures, to require a greater level of disaggregated information and more robust disclosure about valuation techniques and inputs to fair value measurements. ASU 2010-06 is effective for interim and annual reporting periods beginning after December 15, 2009, with the exception of the disclosures about purchases, sales, issuances and settlements in the roll forward of activity in Level 3 fair value measures which are effective for interim and annual reporting periods beginning after December 15, 2010. We have determined that there is no significant impact to our operations from this guidance.

BUSINESS

Overview

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming, and in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking, the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called pressure cycling technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant, and microbial sources.

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels - at controlled temperatures and specific time intervals - to rapidly and repeatedly control the interactions of bio-molecules, such as DNA, RNA, proteins, lipids, and small molecules. Our laboratory instrument, the Barocycler®, and our internally developed consumables product line, including PULSE (Pressure Used to Lyse Samples for Extraction) Tubes, other processing tubes, and application specific kits (which include consumable products and reagents) together make up our PCT Sample Preparation System, or PCT SPS.

We hold 14 United States and 10 foreign patents covering multiple applications of PCT in the life sciences field. Our pressure cycling technology employs a unique approach that we believe has the potential for broad use in a number of established and emerging life sciences areas, including;

- biological sample preparation, which includes sample preparation for genomic, proteomic, lipidomic, metabolic and small molecule studies;
- pathogen inactivation;
- protein purification;
- control of chemical (particularly enzymatic) reactions; and
- immunodiagnostics.

Within the broad field of biological sample preparation, we focus the majority of our product development efforts in three specific areas: mass spectrometry, forensics, and histology.

· *Mass Spectrometry.* A mass spectrometer is a laboratory instrument used in the analysis of biological samples in life sciences research. We believe that mass spectrometry is a multi-billion dollar market, and that PCT offers significant advantages in speed and quality compared to current techniques used in the preparation of samples for mass spectrometry analysis.

· *Forensics.* The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas and Florida International University have reported improvements in DNA yield from forensic samples (e.g., bone, hair) using PCT in the sample preparation process. We believe that that PCT may be capable of differentially extracting DNA from sperm and (female) epithelial cells in swabs collected from rape victims and stored in rape kits. We believe that there are many completed but untested rape kits that remain untested for reasons such as cost, time, and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing quality, safety, and speed.

· *Histology.* The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is formalin-fixation followed by paraffin-embedding (“FFPE”). We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

Since we began operations as Pressure BioSciences in February 2005, we have installed 209 Barocycler instruments through the end of December 31, 2011, of which 132 have been purchased or are currently being leased by our customers. Our customers include researchers at academic laboratories, government agencies, biotechnology, pharmaceutical and other life sciences companies in the United States, and distribution partners in foreign countries.

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 |
|-------------------------|------|------|------|------|------|------|------|
| Units installed in year | 5 | 8 | 20 | 41 | 54 | 50 | 31 |

We have experienced negative cash flows from operations with respect to our pressure cycling technology business since our inception. As of December 31, 2011, we did not have adequate working capital resources to satisfy our current liabilities. As of February 15, 2012, we had a total cash balance of approximately \$430,000. Based on our current projections, including equity financing subsequent to December 31, 2011, we believe our current cash resources will enable us to extend our cash resources until April 2012.

Developments

Despite the uncertainty in the capital markets since 2009 and the concomitant decrease in the capital budgets of our existing and prospective customers and despite our limited financial resources, during this time, we reported a number of accomplishments, including the following:

2009

- *Sale of Series A and B (first tranche) Convertible Preferred Stock in a Private Placement.* We received approximately \$1.8 million and \$1.1 million from the sale of securities in two private placements to accredited investors in February and November, respectively.
- *SBIR Phase I Grant to Study the Human Microbiome.* We were awarded approximately \$110,000 from the NIH to study microorganisms that live on or in the human body.
- *Most Outstanding Manuscript for 2009.* Our research and development scientists were awarded the prize for the “most outstanding manuscript for 2009” from the *Journal of Biomolecular Techniques*.
- *Three United States Department of Agriculture (“USDA”) Scientists Present Data on the Advantages of PCT.* Researchers from three different USDA sites presented data at a national conference citing the advantages of PCT in the detection of microorganisms in food crops.
- *Addition to our Board of Directors.* We added Mr. Alan D. Rosenson to our board of directors.
- *Release of Two New Consumable, PCT-based Products.* We released two new PCT-based kits to the market, focused in the area of genomics (DNA, RNA) research.

· *PCT Shown to Improve the Detection of DNA in the Forensics Samples.* Scientists presented data at the Annual International Society for Human Identity indicating that PCT improved the detection of DNA in challenging forensics samples.

· *Our PCT Revenue Exceeds \$1 Million for the First Time.* We posted total revenue of approximately \$1.2 million, while showing a significant decrease in expenses.

2010

- *Sale of Series B Convertible Preferred Stock in a Private Placement.* We received approximately \$500,000 from the sale of securities in a private placement to accredited investors in March.
- *Exercise of 100% of our 15-Month Series A Preferred Stock Purchase Warrants.* We received \$1,229,650 from the exercise of 98,372 15-Month Series A Preferred Stock Purchase Warrants. As a result, when combined with previous exercises, 100% of the 15-Month Series A Stock Purchase Warrants had been exercised.
- *Therapeutic Discovery Grant Program.* We received \$244,479 related to a federal tax credit enacted in 2010 for qualifying research expenditures deducted in 2009. The program was designed for companies with 250 employees or less. Its goal was to support investment in qualified biomedical projects that show potential to develop new therapies, address unmet medical needs, and reduce the long-term growth of healthcare costs.
- *Patents Granted.* We were issued five additional patents related to our PCT platform. Of the five patents, one was granted in the U.S., one in Japan, one in Canada, and two in Australia. With these grants, we have 24 issued PCT patents: 14 in the U.S., three in Europe, three in Australia, two in Canada, and two in Japan.
- *Collaboration with the Lawrence Berkeley National Laboratory (“LBNL”) –* Scientists at LBNL used our PCT platform in studies aimed at improving the analysis of microorganisms in environments with low biomass, such as oil reservoirs or deep sea oil plumes from oil spills. These scientists have suggested that improved microbe analysis may lead to better strategies for oil spill clean-up.
- *Cooperative Research and Development Agreement, or CRADA, with the Armed Forces Institute of Pathology.* A CRADA was announced with the purpose of developing pressure-based methods to improve the quality and speed of formalin fixed, paraffin embedded, or FFPE tissue preparations, and to improve the quality and yield of biomolecule extraction (DNA, RNA, Proteins, Lipids, Small Molecules) from archival FFPE tissue samples.
- *Product Licensing, Manufacturing, Co-Marketing, and Collaborative R&D Agreement.* We announced a strategic product licensing, manufacturing, co-marketing, and collaborative research and development agreement with Target Discovery Inc.
- *Launch of New Products.* We announced the launch of the Shredder SG3 and two new kits for the isolation of mitochondria from two kinds of solid tissues - skeletal muscle and lung.
- *Revenue Growth.* We posted total revenue of approximately \$1.3 million, as compared to approximately \$1.2 million in 2009.

2011

- *Sale of Series C Convertible Preferred Stock in a Private Placement.* We received approximately \$1.1 million from the sale of securities in a private placement to accredited investors in April and June.
- *Worldwide e-Commerce Distribution Deal Signed.* We signed a worldwide, non-exclusive agreement with KeraFAST LLC for the e-commerce distribution of our Shredder SG3, related Shredder consumables, our IEF buffer.

· *Product Pipeline for 2011 – 2013 Announced.* We announced our targeted schedule for the release of four new PCT-based products: the Barocycler HUB440 (released in July 2011), the FFPE Extraction Service (Q4 of 2012), the XstreamPCT HPLC Digestion Module (Q4 of 2013), and the High Throughput Multi-well System (Q4 2013).

· *Multiple Presentations on the Advantages of PCT at National and International Meetings.* Researchers from academia, government, pharma, and the biotechnology industry reported advantages when using our PCT Platform in their sample preparation processes at four scientific conferences between May and December 2011.

· *100% Conversion of Series A Convertible Preferred Stock and Series B Convertible Preferred Stock.* All 87 holders of our Series A Convertible Preferred Stock and Series B Convertible Preferred Stock voluntarily converted their shares into our common stock.

· *We Were Awarded \$810,000 in National Institutes of Health and Department of Defense Grants.* We were awarded approximately \$160,000 from the National Institutes of Health to help fund the development of a high pressure-based system to improve the processing of cancer and other samples, and approximately \$650,000 from the Department of Defense to help fund the development of a PCT-based system to improve the processing of pathogenic organisms, specifically viruses and bacteria.

· *Registered Direct Offering with Net Proceeds of Approximately \$843,000.* We raised approximately \$843,000 through the sale of Series D Convertible Preferred Stock and warrants to purchase shares of our common stock in a registered direct offering.

· *Second half of 2011 Results.* We reported an approximate 65% increase in total revenue for the second half compared to the first half of 2011, with concomitant reductions in operating loss and cash burn.

2012

· *Co-marketing/selling and research and development agreement with Digilab Inc. (“Digilab”).* Under this agreement with Digilab, a provider of products for life sciences, analytical chemistry and diagnostic markets, we intend to co-market and sell their respective product lines worldwide, including in industry publications, at scientific meetings, on each company’s website, through common collaborator studies, at key industry trade shows, and in visits to customer sites. We also intend to explore ways to co-develop new instrumentation, accessories/modules for existing instrumentation, and consumables that combine the robotics and high throughput capabilities of Digilab products with the extraction, protein digestion, and other advantages of our PCT platform.

· *Collaboration with the Henry C. Lee Institute of Forensic Science (“HCL Institute”).* The HCL Institute will evaluate the use of the Company’s PCT platform for the extraction of DNA and other biomolecules from such samples as bone, hair, plant tissue, pollen, and finger nails. The HCL Institute will also evaluate the PCT platform for detection of counterfeit foods, which may adulterate food products such as rice and tea.

· *Distribution Agreement with LA Biosystems BV (“LABio”).* In March 2012, we entered into a distribution agreement with Netherlands-based life sciences company LA Biosystems. Under the terms of the agreement, we granted LABio the exclusive right to market and sell our PCT sample preparation instruments and consumables in Belgium, the Netherlands, and Luxembourg. In addition, LABio has been granted the non-exclusive right to market and sell our recently released, patent-pending, mechanical homogenization device, the Shredder SG3, and its associated consumables, in the same three countries.

· *Collaboration with Sage-N Research, Inc. (“Sage-N Research”)*. In March 2012, we entered into a collaboration development and co-marketing agreement with Sage-N Research, a supplier of data integration software for proteomics. Under the collaboration, Sage-N Research will work with us to develop software applications to integrate our PCT sample preparation instruments with the Sage-N Research software platform.

· *February 2012 Private Placement*. In February 2012, we raised an aggregate of \$800,000 in a private placement of units consisting of a total of 971,867 shares of restricted common stock and 485,937 warrants to purchase restricted common stock. Seven current investors, including our President and Chief Executive Officer, our Chairman of the Board of Directors, and two investors from our November 2011 registered direct offering, participated in the private placement. The price per unit was \$0.8025 for units consisting of 789,350 shares and 394,677 warrants, and was \$0.9125 for units consisting of the remaining 182,517 shares and 91,260 warrants. Of the \$800,000 invested in the private placement, \$412,457 was received in cash and \$387,547 was from the conversion of outstanding principal and interest on convertible promissory notes we issued in 2011.

Corporate Information

We were incorporated in the Commonwealth of Massachusetts in August 1978 as Boston Biomedica, Inc. In September 2004, we completed the sale of the Boston Biomedica core business units and began to focus exclusively on the development and commercialization of the PCT platform. Following this change in business strategy, we changed our legal name from Boston Biomedica, Inc. to Pressure BioSciences, Inc., or PBI, and commenced operations as Pressure BioSciences in February 2005.

Available Information

Our Internet website address is <http://www.pressurebiosciences.com>. Through our website, we make available, free of charge, reports we file with the Securities and Exchange Commission (“SEC”) including our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. These SEC reports can be accessed through the investor relations section of our website. The information found on our website is not part of this or any other report we file with or furnish to the SEC.

You may read and copy any materials we file with the SEC at the SEC’s Public Reference Room at 100 F Street, NE, Washington, DC 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet website that contains reports, proxy and information statements, and other information regarding Pressure BioSciences and other issuers that file electronically with the SEC. The SEC’s Internet website address is <http://www.sec.gov>.

Sample Preparation for Genomic, Proteomic, and Small Molecule Studies

The Market

Since February 2005, we have focused substantially all of our research and development and commercialization efforts on sample preparation for genomic, proteomic, and small molecule studies. This market is comprised of academic and government research institutions, biotechnology and pharmaceutical companies, and other public and private laboratories that are engaged in studying genomic, proteomic and small molecule material within plant and animal cells and tissues.

We elected to initially focus our resources in the market of genomic, proteomic, and small molecule sample preparation because we believe it is an area that:

- is a rapidly growing market;
- has a large and immediate need for better technology;
- is comprised mostly of research laboratories, which are subject to minimal governmental regulation;
- is the least technically challenging application for the development of our products;
- is compatible with our technical core competency; and
- is the area in which we currently have strong patent protection.

We believe that our existing Barocycler instrumentation, and PCT consumable products fill an important and growing need in the sample preparation market for the safe, rapid, versatile, reproducible, and quality extraction of nucleic acids, proteins, and small molecules from a wide variety of plant and animal cells and tissues.

Mass Spectrometry

Mass spectrometry is frequently used by research scientists to evaluate proteins and nucleic acids (DNA and RNA). We believe that mass spectrometry is one of the most powerful laboratory tools used today and that it is playing an increasingly important role in the analysis of biological samples in life sciences research. A number of companies and research laboratories in this market are currently our customers, or are in the process of evaluating our technology for use in their laboratories.

Our plan is to focus primarily on the application of PCT-enhanced protein digestion for the mass spectrometry market and the advantages of PCT in this market, and the use of PCT in biomarker discovery, soil and plant biology, counter bio-terror and tissue pathology applications.

Forensics

The detection of DNA has become a part of the analysis of forensic samples by laboratories and criminal justice agencies worldwide in their efforts to identify the perpetrators of violent crimes and missing persons. Scientists from the University of North Texas and Florida International University have reported improvements in DNA yield from forensic samples (e.g., bone, hair) using PCT in the sample preparation process. We believe that PCT may be capable of differentially extracting DNA from sperm and (female) epithelial cells in swabs collected from rape victims and stored in rape kits. We also believe that there are many completed but untested rape kits that remain untested for reasons such as cost, time, and quality of results. We further believe that the ability to differentially extract DNA from sperm and not epithelial cells could reduce the cost of such testing, while increasing quality, safety, and speed.

Histology

The most commonly used technique worldwide for the preservation of cancer and other tissues for subsequent pathology evaluation is formalin-fixation followed by paraffin-embedding, or FFPE. We believe that the quality and analysis of FFPE tissues is highly problematic, and that PCT offers significant advantages over current processing methods, including standardization, speed, biomolecule recovery, and safety.

Sample Extraction Process

The process of preparing samples for genomic, proteomic, and small molecule studies includes a crucial step called sample extraction, or sample disruption. This is the process of extracting nucleic acid (DNA and/or RNA), proteins, or small molecules from the plant or animal cells and tissues that are being studied. Sample preparation is widely regarded as a significant impediment to research and discovery, and sample extraction is generally regarded as the key part of sample preparation. Our current commercialization efforts are based upon our belief that pressure cycling technology provides a superior solution to sample extraction compared to other available technologies or procedures, and can thus significantly improve the quality of sample preparation.

Collaboration Program

Our collaboration program is an important element of our business strategy. Initiating a collaboration with a researcher involves the installation of a Barocycler instrument for an agreed upon period of time, generally three to six months, and the execution of an agreed upon work plan. Our primary objectives for entering into a collaboration agreement include:

- the development of a new application for PCT in sample preparation;
- the advancement and validation of our understanding of PCT within an area of life sciences in which we already have products;
- the demonstration of the effectiveness of PCT to specific research scientists who we believe can have a positive impact on market acceptance of PCT; and
- the expectation of peer-reviewed publications and/or presentations at scientific meetings by a third party on the merits of PCT.

Since we initiated our collaboration program in June 2005, third party researchers have cited the use of our PCT platform in publications and presentations. We believe that this program has provided, and continues to provide us with independent and objective data about PCT from well-respected laboratories throughout the United States.

Company Products

We believe our PCT products allow researchers to improve scientific research studies in the life sciences field. Our products are developed with the expectation of meeting or exceeding the needs of research scientists while enhancing the safety, speed, and quality that is available to them with existing sample preparation technology.

Barocyler Instrumentation

Our Barocyler product line consists of laboratory instrumentation that subjects a sample to cycles of pressure from ambient to ultra-high levels and then back to ambient, all in a precisely controlled manner. Our instruments, the Barocyler NEP3229 and Barocyler NEP2320, use cycles of high hydrostatic pressure to quickly and efficiently break up the cellular structures of a specimen to release nucleic acids, proteins, lipids and small molecules from the specimen into our consumable processing tube, referred to as our PULSE Tubes. Our Barocyler instrumentation is designed to fit on a laboratory bench top, inside a biological safety cabinet, or on the shelf of a laboratory cold room. Our instruments have an external chiller hook-up (to control temperature during the PCT process), automatic fill and dispensing valves, and an integrated micro-processor keypad. The microprocessor is capable of saving up to 99 specific PCT protocols, so the researcher can achieve maximum reproducibility for the extraction of nucleic acids, proteins, lipids, or small molecules from various biological samples. Our Barocyler instruments, together with our consumable products described below, make up our current PCT Sample Preparation System (“PCT SPS”).

Barocyler NEP3229 – The Barocyler NEP3229 contains two units, a user interface and a power source, comprised primarily of a 1.5 horsepower motor and pump assembly (hydraulic). Combined, the two components of the NEP3229 weigh approximately 350 pounds. The Barocyler NEP3229 is capable of processing up to three samples simultaneously using our specially designed, single-use PULSE Tubes.

Barocyler NEP2320 – The Barocyler NEP2320 is a smaller and more compact version of our NEP3229 unit. It weighs approximately 80 pounds (with accessories), processes one sample at a time, and works on compressed air (pneumatic) and not hydraulics like the larger NEP3229 unit. Because this instrument is pneumatic, the NEP2320 can be easily attached by an air hose to a typical 85 psi air compressor found in most scientific laboratories, to many consumer-sold portable compressors, or even to bottled gas. This instrument is used by our sales directors as a demonstration instrument and is marketed as a second instrument alternative to our PCT SPS.

Barocyler HUB440 – The Barocyler HUB440, introduced in 2011, is capable of creating and controlling hydrostatic pressure from 35 Bar (500 psi) up to 4,000 Bar (58,000 psi). The Barocyler HUB440 is the first portable, ready to use pressure generator for the laboratory bench.

PCT MicroTube Adapter Kit – The PCT MicroTube Adapter Kit includes an ergonomically designed, space-saving Workstation, PCT MicroTubes and MicroCaps, and specialized tools to enable the user to process up to forty-eight samples simultaneously in our PCT SPS, as compared to three with the Barocyler NEP3229.

The PCT Shredder – The patent-pending PCT Shredder is designed to help research scientists safely, rapidly, and conveniently disrupt very tough samples, such as ticks, muscle, and seeds, that require homogenization prior to PCT or other sample preparation methods. The PCT Shredder uses a similar PULSE Tube as the PCT SPS, and allows scientists to homogenize tough samples prior to extraction with the PCT SPS, but without the need to transfer the sample into a second processing container between steps.

The Shredder SG3 –The Shredder SG3 is a low shear mechanical homogenization system for use with tough, fibrous and other difficult-to-disrupt tissues and organisms. The Shredder SG3 uses a variety of Shredder PULSE Tubes to directly and rapidly grind a biological sample which, when combined with selected buffers, can provide effective extraction of proteins, DNA, RNA, lipids and small molecules from tissues and organisms. The Shredder SG3 is similar in function to The PCT Shredder, but features a three position force setting lever, which enables the operator to select and apply reproducible force to the sample during the shredding process and eliminates the need for the operator to exert force for long periods when processing one or more samples.

Consumable Products

PULSE Tubes (FT500) – The FT500 PULSE Tube is a specially-designed, plastic, single-use, processing container with two chambers separated by a small disk with small holes. This small disk is referred to as a Lysis Disk. PULSE Tubes transmit the power of PCT from the Barocycler instrument to the sample. In sample extraction, the specimen is placed on the Lysis Disk, buffers are added to the PULSE tube, the PULSE Tube is capped and placed in the pressure chamber of the Barocycler instrument, pressure chamber fluid is added, and pressurization begins. As pressure increases, a small moveable piston pushes the specimen from the top (sample) chamber, through the Lysis Disk and into the bottom (fluid retention) chamber. When pressure is released, the sample (now partially homogenized) is pulled back through the Lysis Disk by the receding ram. The combination of physical passage through the Lysis Disk, rapid pressure changes, and other biophysical mechanisms related to cycled pressure break up the cellular structures of the specimen to quickly and efficiently release nucleic acids, proteins, lipids, and small molecules.

Non-Disk PULSE Tubes (FT500-ND) – The FT500-ND PULSE Tube is a specially-designed, plastic, single-use, processing container with one chamber separated by a small disk with small holes. The FT500-ND is similar to the FT500 in look and feel, except there is no Lysis Disk separating the body of the processing container into two chambers, as in the FT500. The design change was based on market demand for a new PCT consumable for the rapid and reproducible processing of solutions and suspensions that do not require partial homogenization by passage through a Lysis Disk, and for a consumable that could accept smaller sample volumes. The FT500-ND offers variable sample volumes with a range five times that of the existing FT500.

ProteoSolve - SB – (ProteoSolve for Systems Biology) is a PCT-dependent method for the simultaneous extraction, isolation, and fractionation of nucleic acids (DNA and RNA), proteins, and lipids from animal and plant samples routinely used in laboratory research. This patent-pending kit contains proprietary reagents, consumable processing containers (PULSE Tubes), and instructions for use, and is intended to be used with our patented PCT Sample Preparation System. The kit is based on an approach to a "systems biology" sample preparation method that was first unveiled during early 2008, in collaboration with Dr. Alexander Ivanov of the Harvard School of Public Health.

ProteoSolve - CE – (ProteoSolve for Conventional Extraction) is a PCT-dependent kit for the extraction of proteins from a variety of samples using optimized detergent-based reagent system compatible with two-dimensional electrophoresis or two-dimensional chromatographic separation for proteomic analysis. The kit contains the reagents and instructions necessary for the extraction of either denatured or non-denatured proteins, which can then be used for the analysis of protein structure and function.

Mitochondria Isolation Kits – These kits contain the chemical ingredients necessary for a scientist to extract mitochondria from skeletal muscle and lung tissue for subsequent analysis. Mitochondria play a major role in generating the energy required to power most cell processes and are involved in other important cell functions. Mitochondria have been implicated in several human diseases, including heart disease, stroke, Parkinson's disease, cancer, and other mitochondrial diseases.

We believe our development of these products has helped, and will continue to help, drive the adoption of PCT within the life sciences market.

Company Services

Government Grants – We view federal agency grants to be an important part of our business plan. These types of grants allow us to bill the federal agency for work that we are planning to perform as part of the development and commercialization of our technology. We generally start by submitting initial grant requests that are in response to requests for proposals (“RFPs”) from the federal government through their Small Business Innovation Research (“SBIR”) program. Initial (“SBIR Phase I”) grants are meant to fund approved research projects for six months, and generally have budgets of approximately \$100,000 to \$150,000. Additionally, because our work in SBIR Phase I grants has been successful, we have applied, and may in the future apply, for larger National Institutes of Health (“NIH”) SBIR Phase II grants. Such larger grants are typically for a two-year period and are in excess of \$750,000 to support significant research projects in areas we would otherwise expect to support with internal funds should SBIR Phase II grants not be awarded. To date we have been awarded two NIH SBIR Phase I grants and one SBIR Phase II grant. The data on one of the NIH SBIR Phase I grants was the basis for the submission, and subsequent award, of the NIH SBIR Phase II grant awarded to us in the approximate amount of \$850,000 in August 2008. The Phase II grant is for work in the area of using PCT to extract protein biomarkers, sub-cellular molecular complexes, and organelles, with the expectation that these studies will ultimately lead to the release of a new, commercially available PCT-based system, with validated protocols, end-user kits, and other consumables intended for the extraction of clinically important protein biomarkers, sub-cellular molecular complexes, and organelles from human and animal tissues. Both of the NIH SBIR Phase I grants have been completed and the NIH SBIR Phase II grant has been completed.

In March 2010, the U.S. Army Medical Research Acquisition Activity (“USAMRAA”) awarded us an SBIR Phase I grant for approximately \$100,000. We completed the work on the grant in October 2010.

During the second half of 2011, we commenced work on a new NIH SBIR Phase I grant in the approximate amount of \$160,000, and on a Department of Defense SBIR Phase II grant in the approximate amount of \$750,000.

Extended Service Contracts - We offer extended service contracts on our laboratory instrumentation to all of our customers. These service contracts allow a customer who purchases a Barocycler instrument to receive on-site scheduled preventative maintenance, on-site repair and replacement of all worn or defective component parts, and telephone support, all at no incremental cost for the life of the service contract. We offer one-year and four-year extended service contracts to customers who purchase Barocycler instruments.

Other Applications of Pressure Cycling Technology

PCT is an enabling, platform technology based on a physical process that had not previously been used to control bio-molecular interactions. During its early development, under the legacy business of Boston Biomedica, Inc., our scientists were researching and developing applications of pressure cycling technology in many areas of the life

sciences, including genomic, proteomic, and small molecule sample preparation. The data generated during these early years, combined with the data generated since we began focusing on PCT operations in February 2005, form the basis of knowledge that we believe will allow us to successfully commercialize PCT both within and outside of the sample preparation market.

Our research and development efforts have shown that, in addition to genomic, proteomic and small molecule sample preparation, PCT is potentially beneficial in a number of other areas of the life sciences, including pathogen inactivation, protein purification, forensics, histology, control of chemical (particularly enzymatic) reactions, and immunodiagnostics. Other applications in the sample preparation market, include forensics and histology, as we discuss above. Our pursuit of these markets, however, depends on a number of factors, including our success in commercializing PCT in the area of sample preparation, our judgment regarding the investment required to be successful in these areas, the value of these markets to our company, and the availability of sufficient financial resources. Below is a brief explanation of each of these additional potential applications and a short description of why we believe PCT can be used to improve scientific studies in these areas.

Pathogen Inactivation

Biological products manufactured for human use, such as blood, vaccines, and drugs, are put through rigorous processing protocols in an effort to minimize the potential of that product to transmit disease. These protocols may include methods to remove infectious materials (such as pre-processing testing, filtration, or chromatography), or methods to inactivate infectious materials that are not captured in the removal steps (such as pasteurization, irradiation, and solvent detergent inactivation). Notwithstanding current diligence in both the removal and inactivation steps, significant concern remains that some bacteria and viruses capable of transmitting infection to recipients may not be removed or inactivated with current procedures. In addition, some removal and inactivation methods may not be useful because of cost, safety, ease-of-use, or other practical concerns. To that end, we believe that a new inactivation method is needed that can safely, rapidly and inexpensively inactivate pathogens in blood, vaccines, and drugs without the need for chemical or other potentially toxic additives. We believe we have successfully generated proof-of-concept that PCT can satisfy this need. We believe that compared to current procedures, a process that uses PCT has the potential to increase safety and yield, lower cost, and decrease the potential side effects of current methods. We have been issued US, European, and Japanese patents for this PCT-dependent inactivation technology.

Protein Purification

Many vaccines and drugs are comprised of proteins. These proteins need to be purified from complex mixtures as part of the manufacturing process. Current purification techniques often result in the loss of a significant amount of the protein. Therefore, any method that could increase the amount of protein being recovered in the purification step, could subsequently lead to a reduction in cost to the manufacturer. We believe we have successfully generated proof-of-concept that PCT can satisfy this need. We believe that compared to current purification procedures, a process that uses PCT has the potential to increase protein recovery, increase the quality of the product, and lower production costs. We have been issued U.S. and European patents in this area.

Control of Chemical (Particularly Enzymatic) Reactions

Chemical reactions encompass many important interactions in nature. Methods used to control chemical reactions could have a positive effect on the quality, speed, and overall result of the reaction. The control and detection of chemical reactions is particularly useful in the biotechnology field for synthesizing and characterizing such molecules as nucleic acids and polypeptides. We believe that PCT offers distinct advantages in controlling chemical reactions over current methods, since PCT can provide precise, automated control over the timing and synchronization of chemical reactions, particularly enzymatic reactions. We have been issued U.S. and European patents in this area.

Immunodiagnosics

Many tests used in the clinical laboratory today are based on the formation of a complex between two proteins, such as an antigen and an antibody. Such “immunodiagnostic” methods are used for the detection of infectious agents (such as HIV, hepatitis viruses, and West Nile virus), as well as for endocrine, drug testing, and cancer diagnostics. We have generated proof-of-concept that PCT may be used to control bio-molecular interactions between proteins, such as antigens and antibodies. We believe this capability may provide a greater degree of sensitivity and quantitative accuracy in immunodiagnostic testing than that offered by methods that are available today. We have been issued U.S. and European patents in this area.

Customers

Our customers include researchers at academic laboratories, government agencies, and biotechnology, pharmaceutical, and other life science companies in the United States. Our customers also include three foreign distribution partners. Our goal is to continue our market penetration in these target groups and releasing products in our publicized product pipeline. We also believe that there is a significant opportunity to sell and/or lease additional Barocycler instrumentation to additional laboratories at current customer institutions.

If we are successful in commercializing PCT in applications beyond our current focus area of genomic, proteomic, and small molecule sample preparation, and if we are successful in our attempts to attract additional capital, our potential customer base could expand to include hospitals, reference laboratories, blood banks and transfusion centers, plasma collection centers, pharmaceutical manufacturing plants, and other sites involved in each specific application. If we are successful in forensics, our potential customers could be laboratories, military, and other government agencies. If we are successful in histology, our potential customers could be pharmaceutical companies, hospitals, and laboratories focused on drug discovery or correlation of disease states.

Competition

We compete with companies that have existing technologies for the extraction of nucleic acids, proteins, and small molecules from cells and tissues, including methods such as mortar and pestle grinding, sonication, rotor-stator homogenization, French Press, bead beating, freezer milling, enzymatic digestion, and chemical dissolution. We believe that there are a number of significant issues related to the use of these methods, including: complexity, sample containment, cross-contamination, shearing of bio-molecules of interest, limited applicability to different sample types, ease-of-use, reproducibility, and cost. We believe that our PCT Sample Preparation System offers a number of significant advantages over these methods, including labor reduction, temperature control, precision, reproducibility, versatility, efficiency, simplicity, and safety. To compete, we must be able to clearly and conclusively demonstrate to potential customers that our products provide these improved performance capabilities.

We believe that our PCT Sample Preparation System is a novel and enabling system for genomic, proteomic, and small molecule sample preparation. As such, many users of current manual techniques will need to be willing to challenge their existing methods of sample preparation and invest time to evaluate a method that could change their overall workflow in the sample preparation process, prior to adopting our technology. We are also aware that the cost of the PCT Sample Preparation System may be greater than the cost of many of the other techniques currently employed. Consequently, we are focusing our sales efforts on those product attributes that we believe will be most important and appealing to potential customers, namely versatility, reproducibility, quality, and safety.

Manufacturing and Supply

Source Scientific, LLC currently provides all of the manufacturing and assembly services for our instrumentation products under an informal, unwritten understanding. We plan to continue to utilize Source Scientific, LLC as our primary assembler and contract manufacturer of our current, and future, Barocycler instruments. Until we develop a broader network of manufacturers and subcontractors, obtaining alternative sources of supply or manufacturing services could involve significant delays and other costs and challenges, and may not be available to us on reasonable terms, if at all. The failure of a supplier or contract manufacturer to provide sufficient quantities, acceptable quality and timely products at an acceptable price, or an interruption of supplies from such a supplier could harm our business and prospects.

Research and Development

Our research and development activities are split into two functional areas, applications and engineering.

Applications Research and Development

Our highly educated and trained staff has years of experience in molecular and cellular biology, virology, and proteomics. Our team of scientists focuses on the development of our PCT Sample Preparation System and further commercialization of PCT-dependent genomic, proteomic, and small molecule sample preparation methods. Dr. Alexander Lazarev, our Vice President of Research & Development, meets regularly with our sales, marketing, and engineering staff to discuss market needs and trends. Our applications research and development team is responsible for the technical review of all scientific collaborations, for the support of our marketing and sales departments through the generation of internal data in a number of areas of market interest, and in the development of commercially-viable PCT-dependent products.

Engineering Research and Development

Our engineering research and development team is focused on the design and development of new and improved instrumentation and consumable products to support the commercialization of PCT. Our engineering department is led by Dr. Edmund Ting, our Senior Vice President of Engineering. The primary focus of our engineering group is to ensure seamless production processes, perform installations and field service, and work with our application scientists to complete the development of a high throughput sample processing system for the mass spectrometry market.

Product Pipeline

The following instruments are in our 2012-2013 research and development pipeline:

- **Barocycler FFPE Protein Extraction Service** - A service offering the enhanced extraction of proteins from formalin-fixed, paraffin-embedded (FFPE) samples using a modified Barocycler instrument that combines the advantages of pressure cycling, high temperature, and certain reagents. Estimated release: Fourth Quarter of 2012.
- **XstreamPCT™ HPLC Digestion Module** - For automated, in-line, on-demand PCT-enhanced protein digestion; the first module in PBI's PCT-based HPLC platform. Estimated release: Fourth Quarter of 2013.
- **Barocycler HT Multiwell (48-384)** - For high throughput, PCT-enhanced biomolecule extraction/accelerated enzymatic digestion; process 48 - 384 samples. Estimated release: Fourth Quarter of 2013.

Sales and Marketing

Our sales and marketing efforts are centered on using the independent data developed and disseminated by our collaboration partners to help drive the installed base of our PCT Sample Preparation System. The development of scientific data by our partners and our internal researchers provides our sales and marketing staff with additional tools that are essential in selling a new technology such as PCT.

Sales

Direct US Sales Force

Our domestic sales force currently consists of three full-time sales directors. We believe that hiring seasoned sales professionals, with significant industry experience, will allow us to more effectively penetrate the market with a small, focused sales force. We may increase the number of sales professionals if our financial resources permit and if we believe that doing so will accelerate our commercialization efforts.

Foreign Distributor Network

Currently we have four distribution arrangements covering Japan, Austria, Germany, Belgium, the Netherlands and Luxembourg. Specifically, in June 2008, we entered into a distribution agreement with Veritas Corporation (“Veritas”) of Tokyo, Japan pursuant to which we granted Veritas exclusive distribution rights to all of our products in Japan. This agreement extends through December 31, 2013. In October 2011, we entered into a distribution agreement with IUL Instruments GmbH (“IUL”) of Germany pursuant to which we granted IUL exclusive distribution rights to all of our products in Germany through March 31, 2013. In November 2011, we entered into a distributor agreement with Oroboros Instruments Corp. (“Oroboros”) of Austria pursuant to which we granted Oroboros non-exclusive world-wide distribution rights to the PBI Shredder SG3 System and related products through December 31, 2012. In March 2012, we entered into a distribution agreement with LABio, a Netherlands-based life sciences company, pursuant to which we granted LABio the exclusive right to market and sell our sample preparation instruments and consumables in Belgium, the Netherlands, and Luxembourg. In addition, we granted LABio the non-exclusive right to market and sell our recently released, patent-pending, mechanical homogenization device, the Shredder SG3, and its associated consumables, in the same three countries.

Marketing

Our marketing function includes Dr. Nathan Lawrence, our Vice President of Marketing. Dr. Lawrence oversees and directs marketing activities such as trade show attendance and sponsorship, on-line advertising, website maintenance and improvement, search engine optimization, creation and dissemination of a PCT newsletter, market research initiatives, and the arrangement of on-location seminars, lectures, and demonstrations of PCT capabilities. Our marketing function is also responsible for the overall coordination of our collaboration programs, from initial set-up, research plan design, and training, service, and data analysis. Some of these responsibilities are shared with other PBI departments (such as Research and Development), but marketing drives the collaborative process. Dr. Lawrence is also responsible for the continued coordination and support of our foreign and domestic distribution partners.

In January 2012, we entered a co-marketing/selling and research and development agreement with Digilab, a provider of products for life sciences, analytical chemistry and diagnostic markets, under which we intend to co-market and sell our respective product lines worldwide, including in industry publications, at scientific meetings, on each company's website, through common collaborator studies, at key industry trade shows, and in visits to customer sites. We also intend to explore ways to co-develop new instrumentation, accessories/modules for existing instrumentation, and consumables that combine the robotics and high throughput capabilities of Digilab products with the extraction, protein digestion, and other advantages of our PCT platform.

Intellectual Property

We believe that protection of our patents and other intellectual property is essential to our business. Subject to the availability of sufficient financial resources, our practice is to file patent applications to protect technology, inventions, and improvements to inventions that are important to our business development. We also rely on trade secrets, know-how, and technological innovations to develop and maintain our potential competitive position. To date, we have been granted 14 United States patents, three European patents, three Australian patents, two Japanese patents, and two Canadian patents. Our issued patents expire between 2015 and 2027. Our failure to obtain and maintain adequate patent protection may adversely affect our ability to enter into, or affect the terms of, any arrangement for the marketing or sale of any of our PCT products. It may also allow our competitors to duplicate our products without our permission and without compensation.

License Agreements Relating to Pressure Cycling Technology

BioMolecular Assays, Inc.

In 1996, we acquired our initial equity interest in BioSeq, Inc., which at the time was developing our original pressure cycling technology. BioSeq, Inc. acquired its pressure cycling technology from BioMolecular Assays, Inc. under a

technology transfer and patent assignment agreement. In 1998, we purchased all of the remaining outstanding capital stock of BioSeq, Inc., and at such time, the technology transfer and patent assignment agreement was amended to require us to pay BioMolecular Assays, Inc. a 5% royalty on our sales of products or services that incorporate or utilize the original pressure cycling technology that BioSeq, Inc. acquired from BioMolecular Assays, Inc. We are also required to pay BioMolecular Assays, Inc. 5% of the proceeds from any sale, transfer or license of all or any portion of the original pressure cycling technology. These payment obligations terminate in 2016. During the year ended December 31, 2011 and 2010, we incurred approximately \$21,090 and \$36,330, respectively in royalty expense associated with our obligation to BioMolecular Assays, Inc.

In connection with our acquisition of BioSeq, Inc., we licensed certain limited rights to the original pressure cycling technology back to BioMolecular Assays, Inc. This license is non-exclusive and limits the use of the original pressure cycling technology by BioMolecular Assays, Inc. solely for molecular applications in scientific research and development and in scientific plant research and development. BioMolecular Assays, Inc. is required to pay us a royalty equal to 20% of any license or other fees and royalties, but not including research support and similar payments, it receives in connection with any sale, assignment, license or other transfer of any rights granted to BioMolecular Assays, Inc. under the license. BioMolecular Assays, Inc. must pay us these royalties until the expiration of the patents held by BioSeq, Inc. in 1998, which we anticipate will be 2016. We have not received any royalty payments from BioMolecular Assays, Inc. under this license.

Battelle Memorial Institute

In December 2008, we entered into an exclusive patent license agreement with the Battelle Memorial Institute ("Battelle"). The licensed technology is the subject of a patent application filed by Battelle in 2008 and relates to a method and a system for improving the analysis of protein samples, including through an automated system utilizing pressure and a pre-selected agent to obtain a digested sample in a significantly shorter period of time than current methods, while maintaining the integrity of the sample throughout the preparatory process. In addition to royalty payments on net sales on "licensed products", we are obligated to make minimum royalty payments for each year that we retain the rights outlined in the patent license agreement and we are required to have our first commercial sale of the licensed products within one year following the issuance of the patent covered by the licensed technology. The minimum annual royalty for 2010 was \$5,000. Our only obligation for 2011 was a minimum royalty payment of \$7,500.

Regulation

Many of our activities are subject to regulation by governmental authorities within the United States and similar bodies outside of the United States. The regulatory authorities may govern the collection, testing, manufacturing, safety, efficacy, labeling, storage, record keeping, transportation, approval, advertising, and promotion of our products, as well as the training of our employees.

All of our commercialization efforts to date are focused in the area of genomic, proteomic, and small molecule sample preparation. We do not believe that our current Barocycler products used in sample preparation are considered "medical devices" under the United States Food, Drug and Cosmetic Act (the "Act") and we do not believe that we are subject to the law's general control provisions that include requirements for registration, listing of devices, quality regulations, labeling, and prohibitions against misbranding and adulteration. We also do not believe that we are subject to regulatory inspection and scrutiny. If, however, we are successful in commercializing PCT in applications beyond our current focus area of genomic, proteomic, and small molecule sample preparation, such as protein purification, pathogen inactivation and immunodiagnostics, our products may be considered "medical devices" under the Act, at which point we would be subject to the law's general control provisions and regulation by the U.S. Food and Drug Administration (the "FDA") that include requirements for registration listing of devices, quality regulations, labeling, and prohibitions against misbranding and adulteration. The process of obtaining approval to market these devices in the other potential applications of PCT would be costly and time consuming and could prohibit us from pursuing such markets.

We may also become subject to the European Pressure Equipment Directive, which requires certain pressure equipment meet certain quality and safety standards. We do not believe that we are currently subject to this directive because our Barocycler instruments are below the threshold documented in the text of the directive. If our interpretation were to be challenged, we could incur significant costs defending the challenge, and we could face production and selling delays, all of which could harm our business.

We self-certified that our Barocycler instrumentation was electromagnetically compatible, or CE, compliant, which means that our Barocycler instruments meet the essential requirements of the relevant European health, safety and environmental protection legislation. In order to maintain our CE Marking, a requirement to sell equipment in many countries of the European Union, we are obligated to uphold certain safety and quality standards.

Employees

At March 14, 2012, we had 13 full-time employees and 3 part-time employees. All employees enter into confidentiality agreements intended to protect our proprietary information. We believe that our relations with our employees are good. None of our employees are represented by a labor union. Our performance depends on our ability to attract and retain qualified professional, scientific and technical staff. The level of competition among employers for skilled personnel is high. Subject to our limited financial resources, we attempt to maintain employee benefit plans to enhance employee morale, professional commitment and work productivity and provide an incentive for employees to remain with us.

Properties

Our corporate offices are currently located at 14 Norfolk Avenue, South Easton, Massachusetts 02375. In November 2007, we signed a lease agreement commencing in February 2008 pursuant to which we lease approximately 5,500 square feet of office space. We renewed the lease through September 30, 2012 with a monthly payment of \$4,800.

Effective January 1, 2010, we entered into a three-year lease agreement with the University of Massachusetts, pursuant to which we are leasing laboratory and office space at the Venture Development Center on campus at the university for research and development activities. We pay \$5,000 per month for the use of these facilities at the University of Massachusetts. We believe that our facilities are adequate for our operations and that suitable additional space will be available if and when needed.

Management

Executive Officers

Our executive officers are appointed by, and serve at the discretion of, our board of directors. The following table sets forth information about our executive officers.

| Name | Age | Position |
|---------------------------|-----|---|
| Richard T. Schumacher | 61 | President, Chief Executive Officer, Chief Financial Officer, Treasurer, Clerk and Director ⁽¹⁾ |
| Edmund Ting, Ph.D. | 57 | Senior Vice President of Engineering |
| Nathan P. Lawrence, Ph.D. | 56 | Vice President of Marketing |
| Alexander Lazarev, Ph.D. | 47 | Vice President of Research and Development |
| Joseph L. Damasio, Jr. | 37 | Vice President of Finance and Administration |

(1) Mr. Schumacher's term of office as a director continues until 2014.

Set forth below is biographical information for each of our executive officers.

Mr. Richard T. Schumacher, the founder of the Company, has served as a director of the Company since 1978. He has served as the Company's Chief Executive Officer since April 16, 2004 and President since September 14, 2004. He previously served as Chief Executive Officer and Chairman of the Board of the Company from 1992 to February 2003. From July 9, 2003 until April 14, 2004 he served as a consultant to the Company pursuant to a consulting agreement. He served as President of the Company from 1986 to August 1999. Mr. Schumacher served as the Director of Infectious Disease Services for Clinical Sciences Laboratory, a New England-based medical reference laboratory, from 1986 to 1988. From 1972 to 1985, Mr. Schumacher was employed by the Center for Blood Research, a nonprofit

medical research institute associated with Harvard Medical School. Mr. Schumacher received a B.S. in Zoology from the University of New Hampshire.

Dr. Edmund Ting joined us as Senior Vice President of Engineering on April 24, 2006. Prior to joining us, Dr. Ting served as the Chief Research Officer of Avure Technologies, a leading worldwide manufacturer of high pressure hydrostatic processing equipment for the food and materials processing industry, where he worked from 2001 to 2006. From 1990 to 2001, Dr. Ting was employed by Flow International Corporation, a world leader in the ultrahigh pressure waterjet cutting technology market, and the parent company of Avure Technologies until November 2005. Dr. Ting last held the position of Vice President of Engineering Research and Development at Flow International Corporation. From 1984 to 1990, Dr. Ting was a research scientist and then a group leader at Grumman Aerospace Corporation. Dr. Ting earned a Bachelor of Science degree in mechanical engineering from Northeastern University and a Science Doctorate in materials science and engineering from the Massachusetts Institute of Technology.

Dr. Nathan P. Lawrence was appointed as our Vice President of Marketing and Sales on April 1, 2006. Dr. Lawrence joined Pressure BioSciences Inc. in 2005, serving as Director of Research and Development until his promotion to Vice President of Marketing in 2006. Dr. Lawrence was responsible for the development of protocols based on Pressure Cycling Technology (PCT). From 2004 through 2005, Dr. Lawrence worked for 454 Life Sciences Inc. in product development. Prior to 454 Life Sciences, Dr. Lawrence was Director of Research and Development for Boston Biomedica, Inc. from 1998 to 2004. He was primarily responsible for the development of PCT, as well as the development of nucleic acid-based diagnostic assays. Prior to joining Boston Biomedica, Inc., Dr. Lawrence held several positions with increasing responsibility in Research and Development and manufacturing at Becton Dickinson and Gene Trak Systems. Dr. Lawrence holds a BA from the University of Miami, an M.S. from Southern Connecticut State University, and a Ph.D. from Yale University.

Dr. Alexander Lazarev has served as our Vice President of Research and Development since 2007. Prior to that, he served as our Director of Research and Development, since joining us in 2006. Prior to joining us, Dr. Lazarev worked as a Visiting Scientist at the Barnett Institute of Chemical and Biological Analysis at Northeastern University in 2005, and served as a Director of New Technology Development at Proteome Systems, Inc., where he was involved in research and development of innovative proteomic analysis applications from 2001 until early 2006. From 1998 to 2001, Dr. Lazarev was employed as Senior Scientist at the Proteomics Division of Genomic Solutions, Inc. Prior to his employment at Genomic Solutions, Inc., Dr. Lazarev was employed in an analytical contract service startup company, PhytoChem Technologies, Inc., which was founded as a spin-off from ESA, Inc. in 1997. Previously, Dr. Lazarev held various scientific positions at the Ohio State University School of Medicine and the Uniformed Services University of Health Sciences. Most of his scientific career has been dedicated to development of methods and applications for biochemical analysis. Since 2005, Dr. Lazarev has been elected as an Executive Board member of the MASSEP.org, a non-profit scientific discussion forum dedicated to the promotion and improvement of chromatography and other analytical technologies. Dr. Lazarev earned his undergraduate and graduate degrees at the University of Kazan, Russian Federation.

Mr. Joseph L. Damasio, Jr. was appointed as our Vice President of Finance and Administration on December 20, 2011. Mr. Damasio has more than 13 years of finance and accounting experience, most recently serving as our Controller since November 2008. Mr. Damasio previously served as Accounting Manager after joining us in January 2007. Before joining us, Mr. Damasio was a senior financial analyst at BearingPoint Inc., a management and technology consulting firm from January 2004 to January 2007. Before joining BearingPoint Inc., Mr. Damasio spent three years as an auditor with PricewaterhouseCoopers LLP. Mr. Damasio began his financial career with NEN Life Science Products Inc., a subsidiary of PerkinElmer Inc. Mr. Damasio earned a bachelor's degree in accounting, with honors, from the University of Massachusetts. He holds an MBA and MSF from Boston College. He is a Certified Public Accountant in Massachusetts.

Non-Employee Directors

The following table sets forth information about the individuals who serve as our non-employee directors.

| Name | Age | Position | Board Committees |
|------|-----|----------|------------------|
|------|-----|----------|------------------|

| | | | Term of office |
|--------------------|----|--------------------------|--|
| R. Wayne Fritzsche | 63 | Chairman of the Board | 2012 |
| | 82 | Director | Compensation; Nominating and Scientific Advisory Board 2012 |

Calvin A. Saravis,
Ph.D.

| | | | | |
|---------------------|----|----------|---------------------------------|------|
| Jeffrey N. Peterson | 56 | Director | Compensation; Nominating | 2012 |
| J. Donald Payne | 56 | Director | Audit; Compensation; Nominating | 2013 |
| Alan D. Rosenson | 47 | Director | Audit; Compensation; Nominating | 2013 |
| Alan I. Goldberg | 69 | Director | Audit | 2014 |
| Gregory G. Freitag | 50 | Director | Audit | 2014 |

Mr. R. Wayne Fritzsche has served as a director and our Chairman of the Board of Directors since October 2003. Mr. Fritzsche has served as a member of our Scientific Advisory Board since 1999. Mr. Fritzsche is the founder of FAI LLC, a consulting firm that provides strategic, financial, and scientific consulting to medical companies in the life sciences and healthcare industries, and has served as its President since 1991. He was a part of the founding group of The Immune Response Company (IMNR) along with Dr. Jonas Salk. From 2001 until 2004, Mr. Fritzsche has served as a board member of Opexa Pharmaceuticals, a multiple sclerosis and cell immunology therapy company, and Vascular Sciences, Inc., an extracorporeal, macular degeneration company. He also previously served as a board member of Intelligent Medical Imaging, Inc., an automated microscopic imaging company, from 1994 to 1997, Clarion Pharmaceuticals, a drug development company, from 1994 to 1996, Nobex Pharmaceuticals, Inc., a drug delivery firm, from 1996 to 2001, Cardio Command, Inc., a transesophageal cardiac monitoring and pacing firm, from 1999 to 2001, and Hesed BioMed, Inc. an antisense oligonucleotide and catalytic antibody company, from 2000 to 2002. Mr. Fritzsche is a founder of Transplan, Inc., an organ transplant device company whose primary focus is in heart transplant. Mr. Fritzsche holds a BA from Rowan University (formerly Glassboro State College), and an MBA from the University of San Diego.

Dr. Calvin A. Saravis has served as a director since 1986. Dr. Saravis has also served as Chairman of our Scientific Advisory Board since 2003. From 1984 to 1998 he was an Associate Professor of Surgery (Biochemistry) at Harvard Medical School (presently emeritus) and Chief, Division of Immunology, Department of Surgery, Harvard Medical School, Boston City Hospital; and from 1983 to 1999, he was an Associate Research Professor of Pathology at Boston University School of Medicine (presently emeritus). From 1971 to 1997, Dr. Saravis was a Senior Research Associate at the Mallory Institute of Pathology and from 1979 to 1997 he was a Senior Research Associate at the Cancer Research Institute-New England Deaconess Hospital. Dr. Saravis received his Ph.D. in immunology and serology from Rutgers University.

Mr. Jeffrey N. Peterson has served as a director since July 2011. Since 1999, he has served as the chief executive officer of Target Discovery, Inc. ("TDI"), a personalized medicine diagnostics (PMDx) company. Mr. Peterson also serves as Chairman of TDI's majority-owned subsidiary, Veritomyx, Inc., which is completing development and commercialization of a tool in accurate peptide, protein and isoform identification and characterization. Prior to joining TDI, Mr. Peterson served as CEO of Sharpe, Peterson, Ocheltree & Associates, an international business development consulting firm assisting Fortune 500 and many smaller firms in business expansion and strategy, for three years prior to incorporating TDI. Prior to that, he spent 9 years in key management roles in Abbott Laboratories' Diagnostics and International (Pharmaceuticals, Hospital Products, Nutritionals, Consumer) businesses, last serving as CEO and General Manager of Abbott South Africa. Mr. Peterson's experience prior to Abbott Laboratories included 11 years with General Electric's Engineered Materials and Plastics businesses, spanning roles in strategic planning, business development, technology licensing, marketing and sales, operations, quality control and R&D. Mr. Peterson holds BSChE and MSChE (Chemical Engineering) degrees from MIT. He serves as Chair Emeritus of the BayBio Institute, a non-profit organization serving the life science community, and on the board of BayBio, a trade association for the life sciences industry in Northern California. He is a member of the Coalition for 21st Century Medicine, and of BIO's Personalized Medicine & Diagnostics Group. Mr. Peterson has served on the board of directors SanGlobal Ed Corp. (d/b/a MyVerse), a teen and collegiate personal and professional development web and mobile resource site.

Mr. J. Donald Payne has served as a director since December 2003. Commencing in 2011, Mr. Payne has served as the Senior Vice President and Chief Financial and Administrative Officer of Oncolix, Inc., a privately-held pharmaceutical company engaged in cancer research. Mr. Payne previously served as President and a Director of Nanospectra Biosciences, Inc., a privately-held medical device company developing products for cancer from 2001 until 2011. Prior to that, Mr. Payne held various executive positions in finance and administration of public and private life science companies since 1992, served as a financial executive in the energy industry from 1980 through 1990, and was in public accounting from 1976 to 1980. Mr. Payne received an MBA from Rice University in 1992 and a BBA from Texas A&M University in 1976. He is a Certified Public Accountant in Texas, and a member of the AICPA and Financial Executives Institute.

Mr. Alan D. Rosenson has served as a director since September 2009. Mr. Rosenson currently serves as President of ALJAR Investments, Inc., an investment firm which he founded in 1994 and through which he manages stock and bond portfolios for private clients. In 1987, Mr. Rosenson founded Consulting Innovations, Inc., an information systems firm, that currently provides consulting services and technology training to high-level executives and business owners. Mr. Rosenson has been a volunteer for various charities from 1990 to the present. Mr. Rosenson earned his B.A. degree from Indiana University with honors, and his MBA degree from Washington University in St. Louis.

Mr. Alan I. Goldberg has served as a director since July 2010. Mr. Goldberg has served as Chairman in the private investment company, Alphi Investment Management Co., from 1987 until 2000. He has been a member of the Chicago Board of Trade since 1977 and currently holds two memberships. He was a Vice President of Morgan Stanley Dean Witter from 1970 to 1977. He has a finance degree from the Kellogg School of Management at Northwestern University. He has served on private and public company boards, and is active in several educational and community charities.

Mr. Gregory G. Freitag, JD, CPA, has served as a director since July 2010. He has served as the Chief Financial Officer and a member of the Board of Directors of AxoGen, Inc. (formerly LecTec Corporation), an intellectual property licensing and holding company since June 2010, and as Chief Financial Officer and director of AxoGen Corporation, a wholly owned subsidiary of AxoGen, Inc., since October 2011. From June 2010 to September 2011, he also served as Chief Executive Officer of LecTec Corporation. Since May 2009, Mr. Freitag has been a founder and principal of FreiMc, LLC, a consulting and advisory firm, and EmployRx, Inc., a business that provides services to self-insured employers relating to prescription drug benefits. Mr. Freitag founded both FreiMc, LLC and EmployRx, Inc. Mr. Freitag previously served as the Director of Business Development at Pfizer Health Solutions, a former subsidiary of Pfizer, Inc., from January 2006 to May 2009. From July 2005 to January 2006, Mr. Freitag was a consultant for Guidant Corporation in their business development group. Prior to Guidant Corporation, Mr. Freitag was the Chief Executive Officer of HTS Biosystems, a biotechnology tools start-up company, from March 2000 until its sale in early 2005. Mr. Freitag was the Chief Operating Officer, Chief Financial Officer and General Counsel of Quantech, Ltd., a public point of care diagnostic company, from December 1995 to March 2000. Mr. Freitag received a B.A. degree in Business and Economics from Macalester College and a J.D. degree from the University of Chicago.

Board Independence

Our board of directors has reviewed the qualifications of each of Messrs. Payne, Goldberg, Freitag, Rosenson, Peterson and Dr. Saravis, constituting more than a majority of our directors, and has affirmatively determined that each individual is “independent” as such term is defined under the current listing standards of the Nasdaq Stock Market. The board of directors has determined that none of these directors has a material relationship with us that would interfere with the exercise of independent judgment. In addition, each member of the Audit Committee is independent as required under Section 10A(m)(3) of the Securities Exchange Act of 1934, as amended (the “Exchange Act”).

Transactions with Related Persons

In June 2010, our board of directors extended the engagement of Mr. Wayne Fritzsche, our Chairman, as an investor relations consultant for us, with an increase of annual cash compensation to \$110,000. In connection with this engagement, Mr. Fritzsche has not been on our Audit Committee since April 1, 2009. As of the date of this

prospectus, Mr. Fritzsche continues to provide consulting services to us.

On April 8, 2011 and April 12, 2011, we completed the first tranche of a private placement, pursuant to which we sold an aggregate of 55,048 units for a purchase price of \$15.00 per unit, resulting in gross proceeds to us of \$825,720 (the "Series C Private Placement"). This was the first tranche of the Series C Private Placement. In connection with the second tranche, the purchase price was reduced to \$12.50 per unit and we issued an additional 11,011 units to the purchasers who participated in the first tranche, without any additional gross proceeds to us. The second tranche closed on June 20, 2011 for the sale of 22,039 units for a purchase price of \$12.50 per unit with gross proceeds of \$275,485. Each unit consisted of (i) one share of Series C Preferred Stock convertible into 10 shares of our common stock (subject to adjustment for stock splits, stock dividends, recapitalization, etc.) and (ii) a three-year warrant to purchase 10 shares of our common stock at a per share exercise price equal to the sum of (a) the common stock equivalent of the Series C Purchase Price (b) plus \$0.88 (the "Series C Warrant"). The Series C Warrants have since been amended as to the exercise price. Mr. Richard T. Schumacher, our President, Chief Executive Officer, Chief Financial Officer and a director, participated in the Series C Private Placement on the same terms as the other investors. Mr. Schumacher received 6,021 Series C Units for a purchase price of \$75,262.50.

On September 7, 2011, we received a loan in the amount of \$100,000 from Mr. Schumacher. The loan was made pursuant to a convertible debenture (the "Note") with a maturity date of March 7, 2012, which may be extended with mutual consent of the parties. The interest rate under the Note is 20% per year. The Note may be repaid, at Mr. Schumacher's election (i) in cash, (ii) by conversion into that number of securities issued in the next financing completed by us having an aggregate purchase price equal to the then outstanding principal amount of the Note, together with any accrued and unpaid interest due at the time of conversion or (iii) conversion into shares of our common stock at a conversion price of \$1.00 per share. In connection with the loan, we issued warrants to Mr. Schumacher to purchase 12,048 shares of common stock, at an exercise price of \$0.83 per share, and warrants to purchase 105,882 shares of common stock, at an exercise price of \$0.85 per share. Both warrants are exercisable on or after March 07, 2012 and expire on September 7, 2014. On February 7, 2012, Mr. Schumacher converted the \$100,000 principal amount of the Note in our private placement in February 2012 of shares of restricted common stock and warrants to purchase shares of common stock at a purchase price of \$0.9125 per share for 109,589 shares of restricted common stock and 54,795 warrants at an exercise price of \$0.85 per share.

On February 7, 2012, Mr. R. Wayne Fritzsche invested \$12,453 in our private placement in February 2012 of shares of restricted common stock and warrants to purchase shares of common stock at a purchase price of \$0.8025 per share for 15,518 shares of restricted common stock and 7,759 warrants at an exercise price of \$0.74 per share.

Executive and Director Compensation

Executive Officer Compensation

General

Messrs. Payne, Peterson and Rosenson and Dr. Saravis are currently the members of the Compensation Committee. The Compensation Committee operates pursuant to a written charter, a current copy of which is publicly available on the investor relations portion of our website at www.pressurebiosciences.com. The primary functions of the Compensation Committee include (i) reviewing and approving our executive compensation, (ii) reviewing the recommendations of the President and Chief Executive Officer regarding the compensation of our executive officers, (iii) evaluating the performance of the President and Chief Executive Officer, (iv) overseeing the administration and approval of grants of stock options and other equity awards under our equity incentive plans, and (v) recommending compensation for our board of directors and each committee thereof for review and approval by the board of directors.

The Compensation Committee may form and delegate authority to one or more subcommittees as it deems appropriate from time to time under the circumstances (including (a) a subcommittee consisting of a single member and (b) a subcommittee consisting of at least two members, each of whom qualifies as a "non-employee director," as such term is defined from time to time in Rule 16b-3 promulgated under the Exchange Act, and an "outside director," as such term is defined from time to time in Section 162(m) of the Internal Revenue Code of 1986, as amended, and the rules and regulations thereunder).

Compensation Objectives

In light of the relatively early stage of commercialization of our products, we recognize the importance of attracting and retaining key employees with sufficient experience, skills, and qualifications in areas vital to our success, such as operations, finance, sales and marketing, research and development, engineering, and individuals who are committed to our short- and long-term goals. The Compensation Committee has designed our executive compensation programs with the intent of attracting, motivating, and retaining experienced executives and, subject to our limited financial resources, rewarding them for their contributions by offering them a competitive base salary, potential for annual cash incentive bonuses, and long-term equity-based incentives, typically in the form of stock options. The Compensation Committee strives to balance the need to retain key employees with financial prudence given our history of operating losses, limited financial resources and the early stage of our commercialization.

Executive Officers and Director Compensation Process

The Compensation Committee considers and determines executive compensation according to an annual objective setting and measurement cycle. Specifically, corporate goals for the year are initially developed by our executive officers and are then presented to our board of directors and Compensation Committee for review and approval. Individual goals are intended to focus on contributions that facilitate the achievement of the corporate goals. Individual goals are first proposed by each executive officer, other than the President and Chief Executive Officer, then discussed by the entire senior executive management team and ultimately compiled and prepared for submission to our board of directors and the Compensation Committee, by the President and Chief Executive Officer. The Compensation Committee sets and approves the goals for the President and Chief Executive Officer. Generally, corporate and individual goals are set during the first quarter of each calendar year. The objective setting process is coordinated with our annual financial planning and budgeting process so our board of directors and Compensation Committee can consider overall corporate and individual objectives in the context of budget constraints and cost control considerations. Annual salary increases, bonuses, and equity awards, such as stock option grants, if any, are tied to the achievement of these corporate and individual performance goals as well as our financial position and prospects.

Under the annual performance review program, the Compensation Committee evaluates individual performance against the goals for the recently completed year. The Compensation Committee's evaluation generally occurs in the first quarter of the following year. The evaluation of each executive (other than the President and Chief Executive Officer) begins with a written self-assessment submitted by the executive to the President and Chief Executive Officer. The President and Chief Executive Officer then prepares a written evaluation based on the executive's self-assessment, the President and Chief Executive Officer's evaluation, and input from others within the Company. This process leads to a recommendation by the President and Chief Executive Officer for a salary increase, bonus, and equity award, if any, which is then considered by the Compensation Committee. In the case of the President and Chief Executive Officer, the Compensation Committee conducts his performance evaluation and determines his compensation, including salary increase, bonus, and equity awards, if any. We generally expect, but are not required, to implement salary increases, bonuses, and equity awards, for all executive officers, if and to the extent granted, by April 1 of each year.

Non-employee director compensation is set by our board of directors upon the recommendation of the Compensation Committee. In developing its recommendations, the Compensation Committee is guided by the following goals: compensation should be fair relative to the required services for directors of comparable companies in our industry and at our company's stage of development; compensation should align directors' interests with the long-term interest of stockholders; the structure of the compensation should be simple, transparent, and easy for stockholders to understand; and compensation should be consistent with the financial resources, prospects, and competitive outlook for the Company.

In evaluating executive officer and director compensation, the Compensation Committee considers the practices of companies of similar size, geographic location, and market focus. In order to develop reasonable benchmark data the Compensation Committee has referred to publicly available sources such as Salary.com and the BioWorld Survey. While the Compensation Committee does not believe benchmarking is appropriate as a stand-alone tool for setting compensation due to the unique aspects of our business objectives and current stage of development, the Compensation Committee generally believes that gathering this compensation information is an important part of its compensation-related decision making process.

The Compensation Committee has the authority to hire and fire advisors and compensation consultants as needed and approve their fees. No advisors or compensation consultants were hired or fired in fiscal 2011.

The Compensation Committee is also authorized to delegate any of its responsibilities to subcommittees or individuals as it deems appropriate. The Compensation Committee did not delegate any of its responsibilities in fiscal 2011.

Summary Compensation Table

The Summary Compensation Table below sets forth the total compensation paid or earned for the fiscal years ended December 31, 2011 and 2010 for: (i) each individual serving as our Chief Executive Officer (“CEO”) or acting in a similar capacity during any part of fiscal 2011; and (ii) the other two most highly paid executive officers (collectively, the “Named Executive Officers”) who were serving as executive officers at the end of fiscal 2011.

| Name and Principal Position | Fiscal Year | Salary ⁽¹⁾ | Option Awards ⁽²⁾ | All other Compensation ⁽³⁾ | Total |
|---|-------------|-----------------------|------------------------------|---------------------------------------|-----------|
| Richard T. Schumacher President, Chief Executive Officer and Chief Financial Officer | 2011 | \$286,371 | \$11,835 | \$30,434 | \$328,640 |
| | 2010 | 281,456 | - | 26,640 | 308,096 |
| Edmund Ting, Ph.D Senior Vice President of Engineering | 2011 | 197,634 | 11,835 | 1,304 | 210,773 |
| | 2010 | 192,546 | - | 1,329 | 193,875 |
| Alexander Lazarev, Ph.D Vice President of Research and Development | 2011 | 171,600 | 11,835 | 7,501 | 190,936 |
| | 2010 | 157,395 | - | 7,666 | 163,883 |

(1) Salary refers to base salary compensation paid through our normal payroll process. No bonus was paid to any Named Executive Officer for 2010 or 2011.

(2) Amounts shown do not reflect compensation received by the Named Executive Officers. Instead, the amounts shown are the aggregate grant date fair value as determined pursuant to FASB ASC 718, Compensation-Stock Compensation. Please refer to Note 2, xiii, "Accounting for Stock-Based Compensation" in the Notes to Consolidated Financial Statements for the fiscal year ended December 31, 2011, for the relevant assumptions used to determine the valuation of stock option grants. No stock options were granted in 2010 to our executive officers.

(3) "All Other Compensation" includes our Company match to the executives' 401(k) contribution and premiums paid on life insurance for the executives. Both of these benefits are available to all of our employees. In the case of Mr. Schumacher, "All Other Compensation" also includes \$7,980 in premiums we paid for a life insurance policy to which Mr. Schumacher's wife is the beneficiary. Mr. Schumacher's compensation includes \$19,840 and \$18,496 paid to his spouse, who is one of our part-time employees, for 2011 and 2010, respectively. "All Other Compensation" for Dr. Lazarev includes \$6,000 paid to Dr. Lazarev in lieu of his participation in the medical benefit plan offered by the Company.

Outstanding Equity Awards at Fiscal Year End

The following table sets forth certain information regarding outstanding stock options awards for each of the Named Executive Officers as of December 31, 2011.

| Option Awards | Number of Securities Underlying Unexercised Options | Number of Securities Underlying Unexercised Options | Option Exercise Price | Option Expiration Date |
|---------------|---|---|-----------------------|------------------------|
| Exercisable | Unexercisable ⁽¹⁾ | | (\$) | |

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Name

| | | | | |
|--|--------|--------|-----------|-----------|
| Richard T. Schumacher | 60,000 | 0 | \$3.08 | 2/11/2012 |
| President, Chief Executive Officer and | | | | |
| Chief Financial Officer | 30,000 | 0 | \$2.70 | 12/2/2012 |
| | 75,000 | 0 | \$2.92 | 6/17/2015 |
| | 30,000 | 0 | \$3.86 | 3/30/2016 |
| | 70,000 | 0 | \$3.51 | 2/12/2017 |
| | 75,000 | 0 | \$0.77 | 3/12/2019 |
| | | 15,000 | (2)\$1.05 | 9/09/2021 |
| Edmund Y. Ting, Ph.D | 60,000 | 0 | \$3.87 | 4/24/2016 |
| Senior Vice President of Engineering | 12,000 | 0 | \$2.75 | 9/25/2018 |
| | 42,000 | 0 | \$0.77 | 3/12/2019 |
| | | | | 9/09/2021 |
| | | 15,000 | (2)\$1.05 | |
| Alexander V. Lazarev, Ph.D | 50,000 | 0 | \$3.88 | 3/02/2016 |
| Vice President of Research & Development | 10,000 | 0 | \$2.75 | 9/25/2018 |
| | 35,000 | 0 | \$0.77 | 3/12/2019 |
| | | 15,000 | (2)\$1.05 | 9/9/2021 |

All unvested stock options listed in this column were granted to the Named Executive Officer pursuant to our 2005 (1)Equity Incentive Plan. All options expire ten years after the date of grant. Unvested stock options become fully vested and exercisable upon a change of control of our company.

Options to purchase shares of common stock were granted on September 9, 2011 to each of the Named Executive (2)Officers, of which 25% of the stock options will vest on the first anniversary of the date of grant while the remainder will vest monthly over the remaining three year vesting period.

Retirement Plan

All employees, including the Named Executive Officers, may participate in our 401(k) Plan. Under the 401(k) Plan, employees may elect to make before tax contributions of up to 60% of their base salary, subject to current Internal Revenue Service limits. The 401(k) Plan does not permit an investment in our common stock. We match employee contributions up to 50% of the first 2% of the employee's earnings. Our contribution is 100% vested immediately.

Severance Arrangements

Each of Mr. Schumacher, Dr. Ting, Dr. Lazarev, and Dr. Lawrence, executive officers of the Company, is entitled to receive a severance payment if terminated by us without cause. The severance benefits would include a payment in an amount equal to one year of such executive officer's annualized base salary compensation plus accrued paid time off. Additionally, the officer will be entitled to receive medical and dental insurance coverage for one year following the date of termination.

Change-in-Control Arrangements

Pursuant to severance agreements with four of our executive officers, each of Dr. Ting, Dr. Lazarev and Dr. Lawrence is entitled to receive a change of control payment in an amount equal to one year (other than Mr. Schumacher) of such executive officer's annualized base salary compensation, accrued paid time off, and medical and dental coverage, in the event of a change of control of our company. In the case of Mr. Schumacher, this payment is equal to two years of annualized base salary compensation, accrued paid time off, and two years of medical and dental coverage.

Pursuant to our 2005 Equity Incentive Plan, any unvested stock options held by a Named Executive Officer will become fully vested upon a change in control (as defined in the 2005 Equity Incentive Plan) of our company.

Director Compensation and Benefits

The following table sets forth certain information regarding compensation earned or paid to our directors during fiscal 2011.

| Name | Fees Earned or Paid in Cash ⁽¹⁾ | Stock Awards ⁽¹⁾ | Option Awards ⁽²⁾⁽³⁾ | Total |
|-------------------------|--|-----------------------------|---------------------------------|----------|
| R. Wayne Fritzsche | \$10,000 | \$10,000 | \$- | \$20,000 |
| Calvin A. Saravis, Ph.D | 10,000 | 20,000 | - | 30,000 |
| J. Donald Payne | 10,000 | 27,500 | - | 37,500 |
| Alan D. Rosenson | 10,000 | 20,000 | - | 30,000 |
| Alan I. Goldberg | 10,000 | 12,500 | - | 22,500 |
| Gregory G. Freitag | 10,000 | 12,500 | - | 22,500 |

| | | | | |
|---------------------|-------|-------|--------|--------|
| Jeffrey N. Peterson | 5,000 | 2,500 | 15,003 | 22,503 |
|---------------------|-------|-------|--------|--------|

Our non-employee directors receive the following compensation for service as a director:

(1) Each director earned a quarterly stipend of \$2,500 for attending meetings of the full board of directors (whether telephonic or in-person) and attending committee meetings in 2011. However, the board of directors elected to defer and accrue the cash payment of these fees until our financial performance improves as determined by the board of directors. We issued 124,996 shares of our common stock in September 2011 to current board members for payment of deferred board fees earned through September 30, 2011. Amounts shown under the heading "Stock Awards" do not reflect compensation received by the directors, but instead reflect the aggregate grant date fair value of the stock issued in lieu of payment of director fees as determined by the Company's closing stock price on September 1, 2011. New fees since October 1, 2011 will be deferred and accrued. There is no limit to the number of meetings of our board of directors or committees that may be called.

(2) Amounts shown do not reflect compensation received by the directors. Instead, the amounts shown are the aggregate grant date fair value as determined pursuant to FASB ASC 718, Compensation-Stock Compensation. Please refer to Note 2, xiii, "Accounting for Stock-Based Compensation" in the Notes to the Consolidated Financial Statements for the fiscal year ended December 31, 2011, for the relevant assumptions used to determine the valuation of stock option grants.

(3) The following table shows the total number of outstanding stock options and stock awards as of December 31, 2011 that have been issued as director compensation.

| Aggregate Number of Stock Options Outstanding | Aggregate Number of Stock Awards Outstanding |
|---|--|
|---|--|

Name

| | | |
|-------------------------|---------|--------|
| R. Wayne Fritzsche | 135,000 | 11,904 |
| Calvin A. Saravis, Ph.D | 110,000 | 23,809 |
| J. Donald Payne | 88,000 | 32,738 |
| Alan D. Rosenson | 25,000 | 23,809 |
| Alan I. Goldberg | 25,000 | 14,880 |
| Gregory G. Freitag | 25,000 | 14,880 |
| Jeffrey N. Peterson | 25,000 | 2,976 |

Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters

Principal Shareholders Table

The following table sets forth certain information as of February 24, 2012 concerning the beneficial ownership of common stock for: (i) each director and director nominee, (ii) each Named Executive Officer in the Summary Compensation Table under “Executive Compensation” below, (iii) all executive officers and directors as a group, and (iv) each person (including any “group” as that term is used in Section 13(d)(3) of the Exchange Act) known by us to be the beneficial owner of 5% or more of our common stock. The address for each of the persons below who are beneficial owners of 5% or more of our common stock is our corporate address at 14 Norfolk Avenue, South Easton, MA 02375.

Beneficial ownership has been determined in accordance with the rules of the SEC and is calculated based on 8,385,090 shares of our common stock issued and outstanding as of February 24, 2012. Shares of common stock subject to options, warrants, preferred stock or other securities convertible into common stock that are currently exercisable or convertible, or exercisable or convertible within 60 days of February 24, 2012, are deemed outstanding for computing the percentage of the person holding the option, warrant, preferred stock, or convertible security but are not deemed outstanding for computing the percentage of any other person.

Except as indicated by the footnotes below, we believe, based on the information furnished to us, that the persons and entities named in the table below have sole voting and investment power with respect to all shares of common stock that they beneficially own.

| Name | Number of Shares of Common Stock Beneficially Owned(1) | Percent of Class |
|---|---|---------------------|
| Richard T. Schumacher (2) | 908,456 | 10.2% |
| R. Wayne Fritzsche (3) | 710,795 | 8.1% |
| Alan D. Rosenson (4) | 289,274 | 3.4% |
| Alan I. Goldberg (5) | 249,027 | 2.9% |
| J. Donald Payne (6) | 159,800 | 1.9% |
| Calvin A. Saravis, Ph.D (7) | 123,809 | 1.5% |
| Edmund Y. Ting, Ph.D (8) | 128,938 | 1.5% |
| Alexander V. Lazarev, Ph.D (9) | 105,701 | 1.2% |
| Gregory G. Freitag (10) | 94,303 | 1.1% |
| Jeffrey N. Peterson (11) | 17,976 | 0.2% |
| All Executive Officers and Directors as a Group (twelve persons) (12) | 2,939,697 | 28.9% |

1) The terms of our Series C Convertible Preferred Stock and warrants issued in connection with our Series A Convertible Preferred Stock, Series B Convertible Preferred Stock and Series C Convertible Preferred Stock contain a limitation on conversion which prevents the holder from converting shares of Series C Convertible Preferred Stock into, or exercise of the warrants for, shares of common stock if, after giving effect to the conversion or exercise, as the case may be, the holder would beneficially own more than 4.99% of the outstanding shares of common stock. The holder may elect to increase this limitation to 9.99%, 14.99% or 19.99%, upon not less than 61 days prior written notice to us. With respect to Mr. Schumacher, because he beneficially owned more than 19.99% of the outstanding shares of common stock prior to his acquisition of shares of Series C Convertible Preferred Stock, the conversion limitation does not apply to him.

2) Includes (i) 280,000 shares of common stock issuable upon exercise of options; (ii) 60,210 shares of common stock issuable upon conversion of Series C Convertible Preferred Stock; (iii) 199,880 shares of common stock issuable upon the exercise of warrants. Does not include 20,162 shares of common stock held by Mr. Schumacher's minor son as his wife exercises all voting and investment control over such shares.

- 3) Includes (i) 135,000 shares of common stock issuable upon exercise of options; and (ii) 219,310 shares of common stock issuable upon exercise of warrants.
- 4) Includes (i) 25,000 shares of common stock issuable upon exercise of options; and (ii) 131,500 shares of common stock issuable upon exercise of warrants.
- 5) Includes (i) 25,000 shares of common stock issuable upon exercise of options; and (ii) 96,960 shares of common stock issuable upon the exercise of warrants.
- 6) Includes (i) 88,000 shares of common stock issuable upon exercise of options; and (ii) 13,050 shares of common stock issuable upon the exercise of warrants.
- 7) Includes 100,000 shares of common stock issuable upon exercise of options.
- 8) Includes (i) 114,000 shares of common stock issuable upon exercise of options; and (ii) 5,220 shares of common stock issuable upon the exercise of warrants.
- 9) Includes (i) 95,000 shares of common stock issuable upon exercise of options; and (ii) 4,350 shares of common stock issuable upon the exercise of warrants.
- 10) Includes (i) 25,000 shares of common stock issuable upon exercise of options; and (ii) 26,640 shares of common stock issuable upon the exercise of warrants.
- 11) Includes 15,000 shares of common stock issuable upon exercise of options.
- 12) Includes (i) 132,000 shares of common stock issuable upon exercise of options; and (ii) 5,220 shares of common stock issuable upon the exercise of warrants held by executive officers not listed above.

Material U.S. Federal Income Tax Considerations

This is a general summary of the material U.S. federal income tax consequences of the acquisition, ownership and disposition of our units, comprised of Series E preferred shares and Class A Warrants, which we refer to collectively

as our securities, purchased pursuant to this offering. This discussion assumes that shareholders will hold our securities as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the "Code"). This discussion does not address all aspects of U.S. federal taxation that may be relevant to a shareholder in light of such shareholder's particular circumstances. In addition, this discussion does not address: (1) U.S. gift or estate tax laws except to the limited extent set forth below, (2) state, local or foreign tax consequences, (3) the special tax rules that may apply to certain shareholders, including without limitation banks, insurance companies, financial institutions, broker-dealers, taxpayers that have elected mark-to-market accounting, taxpayers subject to the alternative minimum tax provisions of the Code, tax-exempt entities, regulated investment companies, real estate investment trusts, taxpayers whose functional currency is not the U.S. dollar, or U.S. expatriates or former long-term residents of the United States, or (4) the special tax rules that may apply to a shareholder that acquires, holds, or disposes of our securities as part of a straddle, hedge, wash sale, constructive sale or conversion transaction or other integrated investment. Additionally, this discussion does not consider the tax treatment of partnerships (including entities treated as partnerships for U.S. federal tax purposes) or other pass-through entities or persons who hold our securities through such entities. The tax treatment of a partnership and each partner thereof generally will depend upon the status and activities of the partnership and such partner. Thus, partnerships, other pass-through entities and persons holding our securities through such entities should consult their own tax advisors.

This discussion is based on current provisions of the Code, U.S. Treasury regulations promulgated under the Code, judicial opinions, and published rulings and procedures of the U.S. Internal Revenue Service (the “IRS”), all as in effect on the date of this prospectus and all of which are subject to change, possibly with retroactive effect. We have not sought, and will not seek, any ruling from the IRS or any opinion of counsel with respect to the tax consequences discussed below, and there can be no assurance that the IRS will not take a position contrary to the tax consequences discussed below or that any position taken by the IRS would not be sustained.

As used in this “Material U.S. Federal Income Tax Considerations” section only, the term “U.S. Person” means a person that is, for U.S. federal income tax purposes: (1) an individual citizen or resident of the United States, (2) a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States or of any state thereof or the District of Columbia, (3) an estate the income of which is subject to U.S. federal income taxation regardless of its source, or (4) a trust if (A) a court within the United States is able to exercise primary supervision over the administration of the trust and one or more U.S. Persons have the authority to control all substantial decisions of the trust, or (B) it has in effect a valid election to be treated as a U.S. Person. As used in this discussion, the term “U.S. holder” means a beneficial owner of our securities that is a U.S. Person and the term “non-U.S. holder” means a beneficial owner of our securities (other than an entity that is treated as a partnership or other pass-through entity for U.S. federal income tax purposes) that is not a U.S. Person. Each prospective investor is urged to consult his, her or its own tax advisors with respect to the U.S. federal, state, local and foreign tax consequences to such investor of the acquisition, ownership and disposition of our securities.

General

There is no authority addressing the treatment, for U.S. federal income tax purposes, of securities with terms substantially the same as the units, and, therefore, that treatment is not entirely clear. Each unit should be treated for U.S. federal income tax purposes as an investment unit consisting of one Series E preferred share which is convertible into ___ shares of our common stock, at a per share of common stock equivalent conversion price of \$_._, and one Class A Warrant to acquire 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit, and one Class B Warrant to acquire 0.5 shares of our common stock for every share of common stock underlying the Series E preferred share included in such unit. Each holder of a unit must allocate the purchase price paid by such holder for such unit among the Series E preferred shares and the Class A Warrant and the Class B Warrant based on their respective relative fair market values. A holder’s initial tax basis in the Series E preferred shares and each warrant included in each unit should equal the portion of the purchase price of the unit allocated thereto.

The foregoing treatment of the Series E preferred shares and Class A Warrants and Class B Warrants and a holder’s purchase price allocation are not binding on the IRS or the courts. Because there are no authorities that directly address instruments that are similar to the units, no assurance can be given that the IRS or the courts will agree with the characterization described above or the discussion below. Accordingly, each prospective investor is urged to consult his, her or its own tax advisors regarding the U.S. federal, state, local and any foreign tax consequences of an investment in a unit (including alternative characterizations of a unit). Unless otherwise stated, the following discussions are based on the assumption that the characterization of the Series E preferred shares, Class A Warrants and Class B Warrants described above is accepted for U.S. federal tax purposes.

U.S. Holders

Taxation of Distributions

If we pay distributions to U.S. holders of our shares of common stock or Series E preferred shares, such distributions generally will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or

accumulated earnings and profits, as determined under U.S. federal income tax principles. Distributions in excess of our current and accumulated earnings and profits will constitute a return of capital that will be applied against and reduce (but not below zero) the U.S. holder's adjusted tax basis in our shares of common stock or Series E preferred shares. Any remaining excess will be treated as gain realized on the sale or other disposition of the shares of common stock or Series E preferred shares and will be treated as described under "U.S. Holders—Gain or Loss on Sale, Exchange or Other Taxable Disposition of Common Stock or Convertible Preferred Shares" below.

Dividends paid to a U.S. holder that is a taxable corporation generally will qualify for the dividends received deduction if the requisite holding period is satisfied. With certain exceptions (including, but not limited to, dividends treated as investment income for purposes of investment interest deduction limitations), and provided certain holding period requirements are met and the U.S. holder refrains from making certain elections, dividends paid to a non-corporate U.S. holder generally will constitute “qualified dividends” that will be subject to tax at the maximum tax rate accorded to net capital gains (currently 15 percent) for tax years beginning before January 1, 2013, after which the rate applicable to dividends is currently scheduled to return to the tax rate generally applicable to ordinary income. Also starting in 2013, the distinction between ordinary and qualified dividends will be eliminated, and all dividends will be subject to the ordinary income tax rates.

Conversion of Series E Preferred Shares into Common Stock

A U.S. holder who converts Series E preferred shares into our common stock generally will not recognize gain or loss, except that the fair market value of any shares of common stock attributable to dividend arrearages may be treated as a deemed distribution if not previously recognized, taxable as described above under “U.S. Holders—Taxation of Distributions”. The adjusted tax basis of the shares of common stock (excluding any shares of common stock treated as a deemed distribution) will equal the tax basis of the Series E preferred shares exchanged and the holding period of the shares of common stock received (excluding any shares of common stock treated as a deemed distribution) will include the holding period of the Series E preferred shares. The tax basis of any shares of common stock treated as a deemed distribution will equal its fair market value on the date of the conversion, and the U.S. holder will begin a new holding period for such shares of common stock.

Gain or Loss on Sale, Exchange or Other Taxable Disposition of Common Stock or Convertible Preferred Shares

In general, a U.S. holder must treat any gain or loss recognized upon a sale, exchange or other taxable disposition of shares of our common stock or Series E preferred shares as capital gain or loss (other than a conversion of Series E preferred shares into shares of common stock, which will be treated as described above in “U.S. Holders—Conversion of Series E Preferred Shares into Common Stock”). Any such capital gain or loss will be long-term capital gain or loss if the U.S. holder’s holding period for the disposition of shares of common stock or Series E preferred shares exceeds one year. In general, a U.S. holder will recognize gain or loss in an amount equal to the difference between (1) the sum of the amount of cash and the fair market value of any property received in such disposition (or, if the Series E preferred share is held as part of a unit at the time of the disposition, the portion of the amount realized on such disposition that is allocated to the Series E preferred share based upon the then fair market values of the Series E preferred share and the warrants included in the unit) and (2) the U.S. holder’s adjusted tax basis in the disposition of shares of common stock or Series E preferred shares. A U.S. holder’s adjusted tax basis in his, her or its common stock or Series E preferred shares generally will equal the U.S. holder’s acquisition cost (that is, as discussed above, the portion of the purchase price of a unit allocated to a Series E preferred share) plus any deemed distributions as described above, less any prior distributions treated as a return of capital, as described above. Long-term capital gain realized by a non-corporate U.S. holder generally will be subject to a maximum rate of 15 percent for tax years beginning before January 1, 2013, after which the maximum long-term capital gains rate is scheduled to increase to 20 percent. The deduction of capital losses is subject to various limitations.

Exercise of a Warrant

A U.S. holder will not be required to recognize taxable gain or loss upon exercise of a Class A Warrant or Class B Warrant. The U.S. holder’s tax basis in the shares of common stock received upon exercise of the warrant generally will be an amount equal to the sum of the U.S. holder’s initial investment in the warrant (i.e., the portion of the U.S. holder’s purchase price for a unit that is allocated to the warrant, as described above) and the exercise price. The U.S. holder’s holding period in the shares of common stock received upon exercise of the warrant will begin on the date

following the date of exercise and will not include the period during which the U.S. holder held the warrant.

Sale, Exchange, Redemption or Expiration of a Warrant

Upon a sale, exchange (other than by exercise), redemption, or expiration of a warrant, a U.S. holder will be required to recognize gain or loss in an amount equal to the difference between (1) the amount realized upon such disposition or expiration (or, if the warrant is held as part of a unit at the time of the disposition of the unit, the portion of the amount realized on such disposition that is allocated to the warrant based on the then fair market values of the warrants and the Series E preferred shares included in the unit) and (2) the U.S. holder's tax basis in the warrant (that is, as discussed above, the portion of the U.S. holder's purchase price for a unit that is allocated to the warrant). Such gain or loss generally would be treated as long-term capital gain or loss if the warrant was held by the U.S. holder for more than one year at the time of such disposition or expiration. The deductibility of capital losses is subject to various limitations.

Non-U.S. Holders***Taxation of Distributions***

In general, any distributions we make to a non-U.S. holder of our shares of common stock or Series E preferred shares, to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles), generally will constitute dividends for U.S. federal income tax purposes and, provided such dividends are not effectively connected with the non-U.S. holder's conduct of a trade or business within the United States, we generally will be required to withhold tax from the gross amount of the dividend at a rate of 30 percent, unless such non-U.S. holder is eligible for a reduced rate of withholding tax under an applicable income tax treaty and provides proper certification of his, her or its eligibility for such reduced rate (usually on an IRS Form W-8BEN). Any distribution not constituting a dividend will be treated first as reducing (but not below zero) the non-U.S. holder's adjusted tax basis in our Series E preferred shares or shares of common stock and, to the extent such distribution exceeds the non-U.S. holder's adjusted tax basis, as gain realized from the sale or other disposition of the Series E preferred shares or shares of common stock, which will be treated as described under "Non-U.S. Holders—Gain on Sale, Exchange or Other Taxable Disposition of Common Stock, Series E Preferred Shares and Warrants" below. In addition, if we determine that we are likely to be classified as a "U.S. real property holding corporation" (see "Non-U.S. Holders—Gain on Sale, Exchange or Other Taxable Disposition of Common Stock, Series E Preferred Shares and Warrants" below), we will withhold 10 percent of any distribution that exceeds our current and accumulated earnings and profits, which withheld amount may be claimed by the non-U.S. holder as a credit against the non-U.S. holder's U.S. federal income tax liability.

Dividends we pay to a non-U.S. holder that are effectively connected with such non-U.S. holder's conduct of a trade or business within the United States (and, if certain income tax treaties apply, are attributable to a United States permanent establishment or fixed base maintained by the non-U.S. holder) generally will not be subject to U.S. withholding tax, provided such non-U.S. holder complies with certain certification and disclosure requirements (usually by providing an IRS Form W-8ECI). Instead, such dividends generally will be subject to U.S. federal income tax, net of certain deductions, at the same graduated individual or corporate rates applicable to U.S. Persons. If the ultimate holder (ignoring intervening pass through entities) is a non-U.S. corporation or transparent entity or vehicle ultimately owned by a corporation, dividends that are effectively connected income may also be subject to a "branch profits tax" at a rate of 30 percent (or such lower rate as may be specified by an applicable income tax treaty) when ultimately remitted from the permanent establishment or fixed base to the non-U.S. holder. A corporation for this purpose means any entity treated as or electing to be treated as a corporation under U.S. tax law.

Conversion of Series E Preferred Shares into Common Stock

Non-U.S. holders generally will not recognize any gain or loss for U.S. federal income tax purposes upon the conversion of Series E preferred shares into our shares of common stock, except that the fair market value of any shares of common stock attributable to dividend arrearages may be treated as a deemed distribution if not previously recognized, taxable as described above under "Non-U.S. Holders—Taxation of Distributions."

Gain on Sale, Exchange or Other Taxable Disposition of Common Stock, Series E Preferred Shares and Warrants

A non-U.S. holder generally will not be subject to U.S. federal income or withholding tax in respect of gain recognized on a sale, exchange or other disposition of our shares of common stock, Series E preferred shares or warrants (including an expiration or redemption of our warrants), in each case without regard to whether those securities were held as part of a unit, unless:

- the gain is effectively connected with the conduct of a trade or business by the non-U.S. holder within the United States (and, under certain income tax treaties, is attributable to a United States permanent establishment or fixed base maintained by the non-U.S. holder);
- the non-U.S. holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition and certain other conditions are met; or
- we are or have been a “U.S. real property holding corporation” for U.S. federal income tax purposes at any time during the shorter of the five-year period ending on the date of disposition or the non-U.S. holder’s holding period for the security disposed of, and, generally, in the case where our shares of common stock or Series E preferred shares, as applicable, are regularly traded on an established securities market, the non-U.S. holder has owned, directly or indirectly or constructively, more than 5 percent of our shares of common stock, or 5 percent of our Series E preferred shares, as applicable, at any time within the shorter of the five-year period ending on the date of disposition or such non-U.S. holder’s holding period for such securities so disposed. There can be no assurance that our shares of common stock or our Series E preferred shares will be treated as regularly traded on an established securities market for this purpose.

Unless an applicable treaty provides otherwise, gain described in the first and third bullet points above will be subject to tax at generally applicable U.S. federal income tax rates. Any gains described in the first bullet point above of a non-U.S. holder that is a foreign corporation may also be subject to an additional 30 percent “branch profits tax”. Gain described in the second bullet point above (which may be offset by U.S. source capital losses) will be subject to a flat 30 percent U.S. federal income tax. The gross proceeds from transactions that generate gains described in the third bullet point above generally will be subject to a 10 percent withholding tax, which withheld amount may be claimed by the non-U.S. holder as a credit against the non-U.S. holder’s U.S. federal income tax liability. Non-U.S. holders should consult any income tax treaties applicable to them, as those treaties may provide for different rules.

We currently are not a U.S. real property holding corporation. However, we can provide no assurance that we will not become a U.S. real property holding corporation in the future. We will be classified as a U.S. real property holding corporation if the fair market value of our “U.S. real property interests” equals or exceeds 50 percent of the sum of the fair market value of our worldwide real property interests plus our other assets used or held for use in a trade or business, as determined for U.S. federal income tax purposes. Each non-U.S. holder should consult its own tax advisors as to whether the Series E preferred shares, warrants or shares of common stock will be treated as “U.S. real property interests” and the tax consequences resulting from such treatment.

Exercise of a Warrant

The U.S. federal income tax treatment of a non-U.S. holder’s exercise of a warrant generally will correspond to the U.S. federal income tax treatment of the exercise of a warrant by a U.S. holder, as described under “U.S. Holders—Exercise of a Warrant” above.

Legislation Relating to Foreign Accounts

Legislation has been recently enacted that imposes significant certification, information reporting and other requirements, and in certain cases, withholding taxes, on certain types of payments made to “foreign financial institutions” and certain other non-U.S. entities. The legislation is generally effective for payments made after December 31, 2012. The failure to comply with the certification, information reporting and other specified requirements in the legislation would result in withholding tax being imposed on payments of dividends and sales proceeds to foreign intermediaries and certain non-U.S. holders. Non-U.S. holders should consult their own tax advisers regarding the application of this legislation to them.

Federal Estate Tax

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Shares of common stock, Series E preferred shares or warrants owned or treated as owned by an individual who is not a U.S. citizen or resident (as specifically defined for U.S. federal estate tax purposes) at the time of his or her death will be included in the individual's gross estate for U.S. federal estate tax purposes, unless there is no federal estate tax in existence at such time or an applicable estate tax treaty provides otherwise, and therefore may be subject to U.S. federal estate tax.

Information Reporting and Backup Withholding

We must report annually to the U.S. Internal Revenue Service and to each U.S. holder and to each non-U.S. holder the amount of dividends paid to that holder and the amount of tax withheld with respect to those dividends. Copies of the information returns reporting those dividends and the amount of tax withheld may also be made available to the tax authorities in the country in which a non-U.S. holder is a resident under the provisions of an applicable income tax treaty.

Backup withholding, currently imposed at a rate of 28%, may apply to dividends paid by us. If you are a U.S. holder, backup withholding will apply if you fail to provide an accurate taxpayer identification number or certification of exempt status or fail to report all interest and dividends required to be shown on your federal income tax returns. Certain U.S. holders (including, among others, corporations) are not subject to backup withholding. If you are a non-U.S. holder, backup withholding will apply to dividend payments if you fail to provide us with the required certification that you are not a U.S. Person.

Payments of the proceeds from a disposition (including a redemption) effected outside the United States by or through a non-US. broker generally will not be subject to information reporting or backup withholding. However, information reporting, but generally not backup withholding, will apply to such a payment if the broker has certain connections with the United States unless the broker has documentary evidence in its records that the beneficial owner of the disposed securities is a non-U.S. holder and either specified conditions are met or an exemption is otherwise established. Backup withholding and information reporting will apply to dispositions made by or through a U.S. office of any broker (U.S. or foreign).

Backup withholding is not an additional tax. Any amounts withheld from a payment that result in an overpayment of taxes generally will be refunded, or credited against U.S. federal income tax liability, if any, provided that the required information is timely furnished to the IRS.

U.S. holders and non-U.S. holders should consult their own tax advisors regarding application of backup withholding in their particular circumstance and the availability of, and procedure for obtaining, an exemption from backup withholding under current U.S. Treasury regulations.

Legal Proceedings

As of the date hereof, we do not have any material pending legal proceedings.

Legal Matters

The validity of the securities offered hereby and certain other legal matters will be passed upon for us by Pepper Hamilton LLP, Boston, Massachusetts.

Experts

The audited consolidated financial statements of Pressure BioSciences, Inc. as of and for the fiscal years ended December 31, 2011 and 2010 have been included in this prospectus in reliance upon the report of Marcum LLP, an independent registered public accounting firm, appearing elsewhere in this prospectus, and upon the authority of said firm as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We are subject to the reporting requirements of the Exchange Act, and we file annual, quarterly and current reports, proxy statements and other information with the SEC. You may read and copy the reports, proxy statements and other information that we file at the SEC's Public Reference Room at 100 F Street NE, Washington, D.C. 20549 at prescribed rates. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. Our filings are also available free of charge at the SEC's website at <http://www.sec.gov>.

We have filed with the SEC a registration statement on Form S-1 (Registration File No. 333-178335) covering the securities offered by this prospectus. This prospectus does not contain all of the information contained or incorporated by reference in the registration statement. For more information about us and our securities, you should read the registration statement and its exhibits. Copies of the registration statement, including its exhibits, may be inspected without charge at the offices of the SEC or obtained at prescribed rates from the Public Reference Room of the SEC at 100 F Street NE, Washington, D.C. 20549. Copies of the registration statement may be obtained without charge at the SEC's website.

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Pressure BioSciences, Inc. and Subsidiary

Annual Financial Statements

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY**CONSOLIDATED BALANCE SHEETS****DECEMBER 31, 2011 AND 2010**

| | December 31, | |
|---|--------------------|--------------------|
| | 2011 | 2010 |
| ASSETS | | |
| CURRENT ASSETS | | |
| Cash and cash equivalents | \$222,775 | \$552,849 |
| Restricted cash | - | 20,014 |
| Accounts receivable, net of allowances of \$9,600 at December 31, 2011 and \$0 at December 31, 2010 | 269,237 | 233,846 |
| Inventories | 1,069,013 | 1,104,056 |
| Prepaid income taxes | 4,739 | 1,442 |
| Prepaid expenses and other current assets | 143,591 | 296,756 |
| Total current assets | 1,709,355 | 2,208,963 |
| PROPERTY AND EQUIPMENT, NET | 89,171 | 192,777 |
| OTHER ASSETS | | |
| Deposits | 6,472 | 6,472 |
| Intangible assets, net | 133,762 | 182,394 |
| TOTAL ASSETS | \$1,938,760 | \$2,590,606 |
| | | |
| LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT) | | |
| CURRENT LIABILITIES | | |
| Accounts payable | \$890,676 | \$234,568 |
| Accrued employee compensation | 180,437 | 172,251 |
| Accrued professional fees and other | 247,738 | 337,698 |
| Deferred revenue | 36,669 | 27,153 |
| Promissory note | 150,000 | - |
| Convertible debt, net of unamortized discount of \$17,088 as of December 31, 2011 | 394,912 | - |
| Warrant derivative liability | 436,553 | - |
| Total current liabilities | 2,336,985 | 771,670 |
| LONG TERM LIABILITIES | | |
| Deferred revenue | 10,111 | 9,427 |
| TOTAL LIABILITIES | 2,347,096 | 781,097 |
| COMMITMENTS AND CONTINGENCIES (Note 7) | | |
| STOCKHOLDERS' EQUITY (DEFICIT) | | |
| Series A convertible preferred stock, \$.01 par value; 313,960 shares authorized; 0 shares issued and outstanding on December 31, 2011 and 262,135 shares issued and outstanding on December 31, 2010 | | 2,621 |
| Series B convertible preferred stock, \$.01 par value; 279,256 shares authorized; 0 shares issued and outstanding on December 31, 2011 and 88,711 shares on December 31, 2010 | - | 887 |
| Series C convertible preferred stock, \$.01 par value; 88,098 shares authorized; 88,098 shares issued and outstanding on December 31, 2011 and 0 shares on December 31, 2010 (Liquidation value of \$1,101,225) | 881 | - |
| Series D convertible preferred stock, \$.01 par value; 850 shares authorized; 743 shares issued and outstanding on December 31, 2011 and 0 shares on December 31, 2010 (Liquidation value of \$743,000) | 7 | - |
| | 67,240 | 27,118 |

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| | | |
|--|--------------------|--------------------|
| Common stock, \$.01 par value; 20,000,000 shares authorized; 6,723,993 shares issued and outstanding on December 31, 2011 and 2,711,750 shares issued and outstanding on December 31, 2010 | | |
| Warrants to acquire preferred stock and common stock | 2,203,101 | 1,248,909 |
| Additional paid-in capital | 13,823,875 | 12,095,237 |
| Accumulated deficit | (16,503,440) | (11,565,263) |
| Total stockholders' equity (deficit) | (408,336) | 1,809,509 |
| TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT) | \$1,938,760 | \$2,590,606 |

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

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY**CONSOLIDATED STATEMENTS OF OPERATIONS****FOR THE YEARS ENDED DECEMBER 31, 2011 AND 2010**

| | For the Year Ended December 31, | |
|---|------------------------------------|---------------|
| | 2011 | 2010 |
| Revenue: | | |
| PCT products, services, other | \$767,765 | \$877,567 |
| Grant revenue | 219,964 | 462,465 |
| Total revenue | 987,729 | 1,340,032 |
| Costs and expenses: | | |
| Cost of PCT products and services | 342,865 | 376,514 |
| Research and development | 969,473 | 1,232,566 |
| Selling and marketing | 931,073 | 1,204,892 |
| General and administrative | 2,034,458 | 1,924,814 |
| Total operating costs and expenses | 4,277,869 | 4,738,786 |
| Operating loss | (3,290,140) | (3,398,754) |
| Other income (expense): | | |
| Interest (expense) income | (136,595) | 2,303 |
| Therapeutic discovery credit | - | 244,479 |
| Change in fair value of warrant derivative liability | 430,423 | - |
| Total other income (expense) | 293,828 | 246,782 |
| Loss before income taxes | (2,996,312) | (3,151,972) |
| Income tax benefit | - | 23,710 |
| Net loss | (2,996,312) | (3,128,262) |
| Accrued interest on convertible debt | 18,896 | - |
| Accrued and deemed dividends on convertible preferred stock | (2,130,245) | (502,564) |
| Net loss applicable to common shareholders | \$(5,107,661) | \$(3,630,826) |
| Net loss per share attributable to common stockholders - basic and diluted | \$(0.77) | \$(1.35) |
| Weighted average common stock shares outstanding used in the basic and diluted net loss per share calculation | 6,618,484 | 2,687,141 |

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

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY**CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)****FOR THE YEARS ENDED DECEMBER 31, 2011 AND 2010**

| | Series A Preferred | | Series B Preferred | | Series C | | Series |
|--|--------------------|---------|--------------------|--------|-----------|--------|--------|
| | Stock | Amount | Stock | Amount | Preferred | Stock | Prefer |
| | Shares | | Shares | | Shares | Amount | Share |
| BALANCE, December 31, 2009 | 152,213 | \$1,523 | 62,039 | \$620 | - | \$- | - |
| Stock-based compensation | - | - | - | - | - | - | - |
| Stock option exercises | - | - | - | - | - | - | - |
| Issuance of convertible preferred stock | - | - | 26,672 | 267 | - | - | - |
| Issuance of common stock for services | - | - | - | - | - | - | - |
| Offering costs for issuance of preferred stock | - | - | - | - | - | - | - |
| Issuance of warrants | - | - | - | - | - | - | - |
| Stock warrant exercise | 125,658 | 1,255 | - | - | - | - | - |
| Beneficial conversion of issued preferred stock | - | - | - | - | - | - | - |
| Conversion of preferred stock to common stock | (15,736) | (157) | - | - | - | - | - |
| Common stock paid-in-kind dividends earned | - | - | - | - | - | - | - |
| Series B dividend paid in cash | - | - | - | - | - | - | - |
| Issuance of common stock for dividends paid-in-kind | - | - | - | - | - | - | - |
| Net loss | - | - | - | - | - | - | - |
| BALANCE, December 31, 2010 | 262,135 | \$2,621 | 88,711 | \$887 | - | \$- | - |
| Stock-based compensation | - | - | - | - | - | - | - |
| Stock option exercises | - | - | - | - | - | - | - |
| Issuance of convertible preferred stock | - | - | - | - | 88,098 | 881 | 843 |
| Issuance of common stock for services | - | - | - | - | - | - | - |
| Offering costs for issuance of preferred stock | - | - | - | - | - | - | - |
| Issuance of warrants in connection short-term loans | - | - | - | - | - | - | - |
| Issuance of stock in lieu of cash for Board of Director fees | - | - | - | - | - | - | - |
| Warrant modifications | - | - | - | - | - | - | - |
| Beneficial conversion of issued preferred stock | - | - | - | - | - | - | - |
| Conversion of preferred stock to common stock | (262,135) | (2,621) | (88,711) | (887) | - | - | (100) |
| Common stock paid-in-kind dividends earned | - | - | - | - | - | - | - |
| Series B dividend paid in cash | - | - | - | - | - | - | - |
| Issuance of common stock for dividends paid-in-kind | - | - | - | - | - | - | - |
| Net loss | - | - | - | - | - | - | - |
| BALANCE, December 31, 2011 | - | \$- | - | \$- | 88,098 | \$881 | 743 |

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

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY**CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY (DEFICIT)
(CONTINUED)****FOR THE YEARS ENDED DECEMBER 31, 2011 AND 2010**

| | Common Stock | | | Additional | Accumulated |
|--|--------------|----------|----------------|-----------------|----------------|
| | Shares | Amount | Stock Warrants | Paid-In Capital | Deficit |
| BALANCE, December 31, 2009 | 2,328,426 | \$23,284 | \$1,352,165 | \$9,297,115 | \$(7,986,620) |
| Stock-based compensation | - | - | - | 273,182 | - |
| Stock option exercises | 18,897 | 189 | - | 20,031 | - |
| Issuance of convertible preferred stock | - | - | - | 328,107 | - |
| Issuance of common stock for services | 17,000 | 170 | - | 25,800 | - |
| Offering costs for issuance of preferred stock | - | - | - | (53,689) | - |
| Issuance of warrants | - | - | 307,416 | - | - |
| Stock warrant exercise | - | - | (410,671) | 1,830,691 | - |
| Beneficial conversion of issued preferred stock | - | - | - | 154,389 | (154,389) |
| Conversion of preferred stock to common stock | 157,360 | 1,573 | - | (1,416) | - |
| Common stock paid-in-kind dividends earned | - | - | - | - | (118,020) |
| Series B dividend paid in cash | - | - | - | - | (7,212) |
| Issuance of common stock for dividends paid-in-kind | 190,067 | 1,902 | - | 221,027 | (170,760) |
| Net loss | - | - | - | - | (3,128,262) |
| BALANCE, December 31, 2010 | 2,711,750 | \$27,118 | \$1,248,909 | \$12,095,237 | \$(11,565,262) |
| Stock-based compensation | - | - | - | 121,974 | - |
| Stock option exercises | 41,103 | 411 | - | 43,569 | - |
| Issuance of convertible preferred stock | - | - | - | 1,076,359 | - |
| Issuance of common stock for services | 20,000 | 200 | - | 16,800 | - |
| Offering costs for issuance of preferred stock | - | - | - | (794,012) | - |
| Issuance of warrants in connection short-term loans | - | - | 249,348 | - | - |
| Issuance of stock in lieu of cash for Board of Director fees | 124,996 | 1,250 | - | 103,747 | - |
| Warrant modifications | - | - | 704,844 | - | (704,844) |
| Beneficial conversion of issued preferred stock | - | - | - | 1,006,574 | (1,006,574) |
| Conversion of preferred stock to common stock | 3,662,336 | 36,623 | - | (33,114) | - |
| Common stock paid-in-kind dividends earned | - | - | - | - | (164,904) |
| Series B dividend paid in cash | - | - | - | - | (65,543) |
| Issuance of common stock for dividends paid-in-kind | 163,808 | 1,638 | - | 186,741 | - |
| Net loss | - | - | - | - | (2,996,312) |
| BALANCE, December 31, 2011 | 6,723,993 | \$67,240 | \$2,203,101 | \$13,823,875 | \$(16,503,440) |

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

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY**CONSOLIDATED STATEMENTS OF CASH FLOWS****FOR THE YEARS ENDED DECEMBER 31, 2011 AND 2010**

| | For the Year Ended December 31, | |
|--|------------------------------------|---------------|
| | 2011 | 2010 |
| CASH FLOWS FROM OPERATING ACTIVITIES: | | |
| Net loss | \$(2,996,312) | \$(3,128,262) |
| Adjustments to reconcile net loss to net cash used in operating activities | | |
| Depreciation and amortization | 141,315 | 197,431 |
| Accretion of interest and amortization of debt issue costs | 108,876 | - |
| Stock-based compensation expense | 121,974 | 273,181 |
| Borrowings on promissory note | 150,000 | - |
| Change in fair value of warrant derivative liability | (430,423) | - |
| Bad debt expense | 9,600 | - |
| Changes in operating assets and liabilities: | | |
| Accounts receivable | (44,991) | (30,635) |
| Inventories | 48,608 | (465,706) |
| Deposits | - | 175,538 |
| Accounts payable | 763,849 | 86,481 |
| Accrued employee compensation | 8,186 | 66,427 |
| Deferred revenue and other accrued expenses | (78,500) | 67,912 |
| Prepaid expenses and other current assets | 55,955 | (114,547) |
| Net cash used in operating activities | (2,141,863) | (2,872,180) |
| CASH FLOWS FROM INVESTING ACTIVITIES: | | |
| Purchases of property and equipment | (2,642) | (92,111) |
| Net cash used in investing activities | (2,642) | (92,111) |
| CASH FLOWS FROM FINANCING ACTIVITIES: | | |
| Proceeds from stock option exercises | 43,980 | 20,220 |
| Decrease in restricted cash | 20,014 | - |
| Proceeds from stock warrant exercises | - | 1,421,275 |
| Borrowings on convertible debt | 412,000 | - |
| Net proceeds from the issuance of preferred stock | 1,338,437 | 465,867 |
| Net cash provided by financing activities | 1,814,431 | 1,907,362 |
| Change in cash and cash equivalents | (330,074) | (1,056,929) |
| Cash and cash equivalents, beginning of period | 552,849 | 1,609,778 |
| Cash and cash equivalents, end of period | \$222,775 | \$552,849 |

SUPPLEMENTAL INFORMATION:

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| | | |
|--|-----------|---------|
| Income taxes paid | \$1,900 | \$- |
| Income tax refund received | 23,710 | 244,479 |
| Issuance of common stock dividend on preferred stock | 188,379 | 222,931 |
| Issuance of preferred stock warrants to placement agent | 94,313 | 18,122 |
| Issuance of common stock warrants for services | - | 116,234 |
| Issuance of common stock for services | 4,999 | 25,970 |
| Issuance of common stock for deferred board fees | 104,997 | - |
| Series B dividend paid in cash | 65,543 | 7,212 |
| Warrant modifications | 704,844 | - |
| Beneficial conversion feature on convertible preferred stock | 1,006,574 | 154,389 |

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

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(1) Business Overview and Management Plans

We are focused on solving the challenging problems inherent in biological sample preparation, a crucial laboratory step performed by scientists worldwide working in biological life sciences research. Sample preparation is a term that refers to a wide range of activities that precede most forms of scientific analysis. Sample preparation is often complex, time-consuming, and in our belief, one of the most error-prone steps of scientific research. It is a widely-used laboratory undertaking, the requirements of which drive what we believe is a large and growing worldwide market. We have developed and patented a novel, enabling technology platform that can control the sample preparation process. It is based on harnessing the unique properties of high hydrostatic pressure. This process, called pressure cycling technology, or PCT, uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels (35,000 psi or greater) to safely, conveniently and reproducibly control the actions of molecules in biological samples, such as cells and tissues from human, animal, plant, and microbial sources.

Our pressure cycling technology uses internally developed instrumentation that is capable of cycling pressure between ambient and ultra-high levels - at controlled temperatures and specific time intervals - to rapidly and repeatedly control the interactions of bio-molecules, such as DNA, RNA, proteins, lipids, and small molecules. Our laboratory instrument, the Barocycler®, and our internally developed consumables product line, including PULSE (Pressure Used to Lyse Samples for Extraction) Tubes, other processing tubes, and application specific kits (which include consumable products and reagents) together make up our PCT Sample Preparation System, or PCT SPS.

We have experienced negative cash flows from operations with respect to our pressure cycling technology business since our inception. As of December 31, 2011, we did not have adequate working capital resources to satisfy our current liabilities. Based on our current projections, including equity financing subsequent to December 31, 2011, we believe our current cash resources will enable us to extend our cash resources until April 2012.

As a result, the audit report issued by our independent registered public accounting firm on our audited financial statements for the fiscal year ended December 31, 2011 contains an explanatory paragraph regarding our ability to continue as a going concern due to the risk that we may not have sufficient cash and liquid assets at December 31, 2011 to cover our operating and capital requirements for the next twelve-month period; and if sufficient cash cannot be obtained, we would have to substantially alter, or possibly even discontinue, operations. The accompanying financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Such an opinion from our independent registered accounting firm could adversely affect our ability to obtain additional financing on favorable terms, if at all, as such an opinion may cause investors to have reservations about our long-term prospects, and may adversely affect our relationships with customers. There can be no assurance that our auditing firm will not qualify its opinion in the future. If we cannot successfully continue as a going concern, our stockholders may lose their entire investment in us.

Management has developed a plan to continue operations. This plan includes further reductions in expenses and obtaining equity or debt financing including our most recently completed financing in February 2012, in which we

sold units consisting of shares of restricted common stock and warrants to purchase shares of common stock for net aggregate proceeds of approximately \$765,000, which included the conversion of \$387,457 in principal and interest from convertible promissory notes. Although we have successfully completed equity financings and reduced expenses in the past, we cannot assure you that our plans to address these matters in the future will be successful. Additional financing may not be available to us on a timely basis, if at all, or on terms acceptable to us. In the event we are unable to raise sufficient funds on terms acceptable to us, we may be required to:

- severely limit or cease our operations or otherwise reduce planned expenditures and forego other business opportunities, which could harm our business. The accompanying financial statements do not include adjustments that may be required in the event of the disposal of assets or the discontinuation of the business;
- obtain financing with terms that may have the effect of diluting or adversely affecting the holdings or the rights of the holders of our capital stock; or
- obtain funds through arrangements with future collaboration partners or others that may require us to relinquish rights to some or all of our technologies or products.

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Our common stock is listed on The NASDAQ Capital Market. We previously received letters from the NASDAQ Stock Market LLC, or NASDAQ, on April 13, 2011, advising us that our stockholders' equity for the year ended December 31, 2010 had fallen below the minimum requirement for continued inclusion on The NASDAQ Capital Market and on August 15, 2011, advising us that, for the previous 30 consecutive business days, the bid price of our common stock had closed below the minimum \$1.00 per share requirement for continued inclusion on The NASDAQ Capital Market. On October 4, 2011, we received written notification from the Listing Qualifications Department of the NASDAQ, or NASDAQ, stating that our common stock is subject to delisting from The NASDAQ Capital Market, pending our opportunity to request a hearing before a NASDAQ Listing Qualifications Panel (the "Panel"). We attended a hearing before the Panel on November 17, 2011 to consider further our plan to bring the Company into compliance with the stockholders' equity listing standard and the minimum \$1.00 per share requirement.

On December 7, 2011, we received notice that the Panel granted our request for continued listing on The NASDAQ Capital Market subject to, among other things, our demonstration of compliance with the applicable minimum stockholders' equity requirement of \$2.5 million by February 29, 2012. On February 15, 2012, we received notice from NASDAQ that the bid price of our common stock had not regained compliance with the minimum \$1.00 per share requirement as of February 13, 2012, 180 calendar days after NASDAQ's August 15, 2011 notice. While we are working toward regaining compliance with all applicable requirements for continued listing on The NASDAQ Capital Market, including both minimum stockholders' equity and minimum bid price of \$1.00 per share, there can be no assurance that we will be able to demonstrate compliance by the February 29, 2012 deadline or that the Panel will grant us an extension in the event compliance is not timely achieved.

The Company identified errors in its calculation of the incremental value of the warrants issued to holders of Series A and B Convertible Preferred Stock. As a result of this correction, the Company has identified an additional \$379,000 that has been recorded as a deemed dividend. The Company has analyzed the impact of this item and concluded that it would not be material with respect to any reporting period after taking into consideration the requirements of the Securities and Exchange Commission ("SEC") Staff Bulletin No. 99.

(2) Summary of Significant Accounting Policies

(i) Principles of Consolidation

The consolidated financial statements include the accounts of Pressure BioSciences, Inc., and its wholly-owned subsidiary PBI BioSeq, Inc. All intercompany accounts and transactions have been eliminated in consolidation.

(ii) Use of Estimates

To prepare our consolidated financial statements in conformity with accounting principles generally accepted in the United States of America, we are required to make significant estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. In addition, significant

estimates were made in projecting future cash flows to quantify impairment of assets, deferred tax assets, the costs associated with fulfilling our warranty obligations for the instruments that we sell, and the estimates employed in our calculation of fair value of stock options awarded and warrant derivative liability. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results could differ from the estimates and assumptions used.

(iii) Revenue Recognition

Revenue is recognized when realized or earned when all the following criteria have been met: persuasive evidence of an arrangement exists; delivery has occurred and risk of loss has passed to the customer; the seller's price to the buyer is fixed or determinable; and collectability is reasonably assured.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Our current instruments, the Barocycler NEP3229 and NEP2320, require a basic level of instrumentation expertise to set-up for initial operation. To support a favorable first experience for our customers, we send a highly trained technical representative to the customer site to install every Barocycler that we sell, lease, or rent through our domestic sales force. The installation process includes uncrating and setting up the instrument, followed by introductory user training. Product revenue related to current Barocycler instrumentation is recognized upon the completion of the installation and introductory training process of the instrumentation at the customer location, for domestic installations. Product revenue related to sales of PCT instrumentation to our foreign distributors is recognized upon shipment through a common carrier. We provide for the expected costs of warranty upon the recognition of revenue for the sales of our instrumentation. Our sales arrangements do not provide our customers with a right of return. Product revenue related to the HUB440 and our consumable products such as PULSE Tubes, MicroTubes, and application specific kits is recorded upon shipment through a common carrier. Shipping costs are included in sales and marketing expense. Any shipping costs billed to customers are recognized as revenue.

We account for our lease agreements under the operating method. We record revenue over the life of the lease term and we record depreciation expense on a straight-line basis over the thirty-six month estimated useful life of the Barocycler instrument. The depreciation expense associated with assets under lease agreement is included in the "Cost of PCT products and services" line item in our consolidated statements of operations. Many of our lease and rental agreements allow the lessee to purchase the instrument at any point during the term of the agreement with partial or full credit for payments previously made. We pay all maintenance costs associated with the instrument during the term of the leases.

Revenue from government grants is recorded when expenses are incurred under the grant in accordance with the terms of the grant award.

Our transactions sometimes involve multiple elements (i.e., products and services). Revenue under multiple element arrangements is recognized in accordance with FASB ASC 605-25 *Multiple-Element Arrangements* ("ASC 605"). When vendor specific objective evidence or third party evidence of selling price for deliverables in an arrangement cannot be determined, the Company develops a best estimate of the selling price to separate deliverables and allocates arrangement consideration using the relative selling price method. Additionally, this guidance eliminates the residual method of allocation. If an arrangement includes undelivered elements that are not essential to the functionality of the delivered elements, we defer the fair value of the undelivered elements with the residual revenue allocated to the delivered elements. Fair value is determined based upon the price charged when the element is sold separately. If there is not sufficient evidence of the fair value of the undelivered elements, no revenue is allocated to the delivered elements and the total consideration received is deferred until delivery of those elements for which objective and reliable evidence of the fair value is not available. We provide certain customers with extended service contracts with revenue recognized ratably over the life of the contract.

(iv) Cash and Cash Equivalents

Our policy is to invest available cash in short-term, investment grade interest-bearing obligations, including money market funds, and bank and corporate debt instruments. Securities purchased with initial maturities of three months or less are valued at cost plus accrued interest, which approximates fair value, and are classified as cash equivalents. As of December 31, 2010, we held \$20,000 in a restricted account as collateral for our corporate credit card and therefore classified this balance as short-term restricted cash on our consolidated balance sheet. The restricted account was liquidated in early 2011.

(v) Research and Development

Research and development costs, which are comprised of costs incurred in performing research and development activities including wages and associated employee benefits, facilities, consumable products and overhead costs that are expensed as incurred. In support of our research and development activities we utilize our Barocycler instruments that are capitalized as fixed assets and depreciated over their expected useful life.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(vi) Inventories

Inventories are valued at the lower of cost (average cost) or market (sales price). The cost of Barocyclers consists of the cost charged by the contract manufacturer. The cost of manufactured goods includes material, freight-in, direct labor, and applicable overhead. The composition of inventory as of December 31, 2011 and 2010 is as follows:

| | December 31, | |
|----------------|--------------|-------------|
| | 2011 | 2010 |
| Raw materials | \$193,121 | \$198,534 |
| Finished goods | 875,892 | 905,522 |
| Total | \$1,069,013 | \$1,104,056 |

(vii) Property and Equipment

Property and equipment are stated at cost, less accumulated depreciation. For financial reporting purposes, depreciation is recognized using the straight-line method, allocating the cost of the assets over their estimated useful lives of three years for certain laboratory equipment, from three to five years for management information systems and office equipment, and three years for all PCT finished units classified as fixed assets.

(viii) Intangible Assets

We have classified as intangible assets, costs associated with the fair value of acquired intellectual property. Intangible assets, including patents, are being amortized on a straight-line basis over sixteen years. We perform an annual review of our intangible assets for impairment. When impairment is indicated, any excess of carrying value over fair value is recorded as a loss. An impairment analysis of intangible assets was performed as of December 31, 2011. Based on this analysis, we have concluded that no impairment of intangible assets had occurred.

(ix) Long-Lived Assets and Deferred Costs

The Company's long-lived assets and other assets are reviewed for impairment in accordance with the guidance of the FASB ASC 360-10-05, *Property, Plant, and Equipment*, whenever events or changes in circumstances indicate that

the carrying amount of the asset may not be recoverable. Recoverability of an asset to be held and used is measured by a comparison of the carrying amount of an asset to the future undiscounted cash flows expected to be generated by the asset. If such asset is considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the asset exceeds its fair value. Through December 31, 2011, the Company had not experienced impairment losses on its long-lived assets. While our current and historical operating losses and cash flow are indicators of impairment, we performed an impairment test at December 31, 2011 and determined that such long-lived assets were not impaired.

(x) Concentrations

Credit Risk

Our financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash, cash equivalents and trade receivables. We have cash investment policies which, among other things, limit investments to investment-grade securities. We perform ongoing credit evaluations of our customers, and the risk with respect to trade receivables is further mitigated by the fact that many of our customers are government institutions and university labs.

The following table illustrates the level of concentration of the below two groups within revenue as a percentage of total revenues during the years ended December 31, 2011 and 2010:

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | For the Year Ended December 31, | |
|--------------------|------------------------------------|------|
| | 2011 | 2010 |
| Top Five Customers | 37% | 47% |
| Federal Agencies | 26% | 38% |

The following table illustrates the level of concentration of the below two groups within accounts receivable as a percentage of total accounts receivable balance as of December 31, 2011 and 2010:

| | December 31, | |
|--------------------|--------------|------|
| | 2011 | 2010 |
| Top Five Customers | 89% | 72% |
| Federal Agencies | 42% | 29% |

Product Supply

Source Scientific, LLC has been our sole contract manufacturer for all of our PCT instrumentation. Until we develop a broader network of manufacturers and subcontractors, obtaining alternative sources of supply or manufacturing services could involve significant delays and other costs and challenges, and may not be available to us on reasonable terms, if at all. The failure of a supplier or contract manufacturer to provide sufficient quantities, acceptable quality and timely products at an acceptable price, or an interruption of supplies from such a supplier could harm our business and prospects.

(xi) Computation of Loss per Share

Basic loss per share is computed by dividing loss available to common shareholders by the weighted average number of common shares outstanding. Diluted loss per share is computed by dividing loss available to common shareholders

by the weighted average number of common shares outstanding plus additional common shares that would have been outstanding if dilutive potential common shares had been issued. For purposes of this calculation, convertible preferred stock, common stock dividends, warrants to acquire preferred stock convertible into common stock, and warrants and options to acquire common stock, are all considered common stock equivalents in periods in which they have a dilutive effect and are excluded from this calculation in periods in which these are anti-dilutive. The following table illustrates our computation of loss per share for the years ended December 31, 2011 and 2010.

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | For the Year Ended December 31, | |
|---|------------------------------------|---------------|
| | 2011 | 2010 |
| Numerator: | | |
| Net loss | \$(2,996,312) | \$(3,128,262) |
| Accrued interest on convertible debt, after tax | 18,896 | - |
| Accrued dividend for Preferred Stock | (164,904) | (118,020) |
| Deemed dividend on warrant modifications | (704,844) | - |
| Beneficial conversion feature for Preferred Stock | (1,006,574) | (154,389) |
| Series A Preferred dividends paid in Common Stock | (188,380) | (186,968) |
| Series B Preferred dividends paid in Common Stock | - | (35,975) |
| Series B Preferred dividends paid in cash | (65,543) | (7,212) |
| Net loss applicable to common shareholders | \$(5,107,661) | \$(3,630,826) |
| Denominator for basic and diluted loss per share: | | |
| Weighted average common stock shares outstanding | 6,618,484 | 2,687,141 |
| Loss per common share - basic and diluted | \$(0.77) | \$(1.35) |

The following table presents securities that could potentially dilute basic loss per share in the future. For all periods presented, the potentially dilutive securities were not included in the computation of diluted loss per share because these securities would have been anti-dilutive.

| | For the Year Ended December 31, | |
|--------------------------------|------------------------------------|-----------|
| | 2011 | 2010 |
| Stock options | 1,508,500 | 201,110 |
| Convertible debt | 412,000 | - |
| Common stock warrants | 4,775,501 | 1,740,800 |
| Preferred stock warrants | - | 940,550 |
| Convertible preferred stock: | | |
| Series A Convertible Preferred | - | 2,621,350 |
| Series B Convertible Preferred | - | 887,110 |
| Series C Convertible Preferred | 880,980 | - |
| Series D Convertible Preferred | 1,143,077 | - |
| | 8,720,058 | 6,390,920 |

(xii) Accounting for Income Taxes

We account for income taxes under the asset and liability method, which requires recognition of deferred tax assets, subject to valuation allowances, and liabilities for the expected future tax consequences of events that have been included in the financial statements or tax returns. Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting and income tax purposes. The Company considers many factors when assessing the likelihood of future realization of our deferred tax assets, including recent cumulative earnings experience by taxing jurisdiction, expectations of future taxable income or loss, the carry-forward periods available to us for tax reporting purposes, and other relevant factors. A valuation allowance is established if it is more likely than not that all or a portion of the net deferred tax assets will not be realized. If substantial changes in the Company's ownership should occur, as defined in Section 382 of the Internal Revenue Code, there could be significant limitations on the amount of net loss carry forwards that could be used to offset future taxable income.

The benefit of \$23,710 that was realized in 2010 relates to legislation within the Housing Assistance Tax Act of 2008 which provided the Company the option to claim a refundable tax credit in exchange for foregoing bonus depreciation.

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(xiii) Accounting for Stock-Based Compensation

We maintain equity compensation plans under which incentive stock options and non-qualified stock options are granted to employees, independent members of our Board of Directors and outside consultants. We recognize equity compensation expense over the requisite service period using the Black-Scholes formula to estimate the fair value of the stock options on the date of grant.

Determining Fair Value of Stock Option Grants

Valuation and Amortization Method - The fair value of each option award is estimated on the date of grant using the Black-Scholes pricing model based on certain assumptions. The estimated fair value of employee stock options is amortized to expense using the straight-line method over the vesting period, which generally is over three years.

Expected Term - The Company uses the simplified calculation of expected life, described in the FASB ASC 718, *Compensation-Stock Compensation*, as the Company does not currently have sufficient historical exercise data on which to base an estimate of expected term. Using this method, the expected term is determined using the average of the vesting period and the contractual life of the stock options granted.

Expected Volatility - Expected volatility is based on the Company's historical stock volatility data over the expected term of the award.

Risk-Free Interest Rate - The Company bases the risk-free interest rate used in the Black-Scholes valuation method on the implied yield currently available on U.S. Treasury zero-coupon issues with an equivalent remaining term.

Forfeitures - As required by FASB ASC 718, *Compensation-Stock Compensation*, the Company records stock-based compensation expense only for those awards that are expected to vest. The Company estimated a forfeiture rate of 5% for awards granted based on historical experience and future expectations of options vesting. We used this historical rate as our assumption in calculating future stock-based compensation expense.

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The following table summarizes the assumptions we utilized for grants of stock options to the three sub-groups of our stock option recipients during the twelve months ended December 31, 2011 and 2010:

| Assumptions | Outside Consultants | Non-Employee Board Members | CEO and other Officers and Employees |
|-------------------------|---------------------|----------------------------|--------------------------------------|
| Expected life | 2.0 (yrs) | 5.0 (yrs) | 6.0 (yrs) |
| Expected volatility | 79.60% | 55.66% - 77.86% | 55.66% - 101.83% |
| Risk-free interest rate | 1.27% | 2.60% - 4.94% | 1.00% - 4.94% |
| Forfeiture rate | 0.00% | 5.00% | 5.00% |
| Expected dividend yield | 0.0% | 0.0% | 0.0% |

We recognized stock-based compensation expense of \$121,974 and \$273,181 for the years ended December 31, 2011 and 2010, respectively. The following table summarizes the effect of this stock-based compensation expense within each of the line items within our Consolidated Statement of Operations:

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | For the Year Ended, December 31, | |
|--|----------------------------------|-----------|
| | 2011 | 2010 |
| Research and development | \$39,375 | \$73,097 |
| Selling and marketing | 43,201 | 72,609 |
| General and administrative | 39,398 | 127,475 |
| Total stock-based compensation expense | \$121,974 | \$273,181 |

During the years ended December 31, 2011 and 2010, the total fair value of stock options awarded was \$135,403 and \$64,248, respectively.

As of December 31, 2011, the total estimated fair value of unvested stock options to be amortized over their remaining vesting period was \$99,547. The non-cash, stock based compensation expense associated with the vesting of these options will be \$31,695 in 2012, \$26,244 in 2013, \$24,467 in 2014 and \$17,141 in 2015.

(xiv) Fair Value of Financial Instruments

Due to their short maturities, the carrying amounts for cash and cash equivalents, accounts receivable, accounts payable, and accrued expenses approximate their fair value. Short-term and long-term liabilities are primarily related to liabilities transferred under contractual arrangements with carrying values that approximate fair value.

(xv) Reclassifications

Certain prior year amounts have been reclassified to conform to our current year presentation. Deposits were moved to long-term assets to be consistent with the lease term of our headquarters.

(xvi) Recent Accounting Standards

The Financial Accounting Standards Board, or FASB, issued Accounting Standards Update, or ASU, No. 2009-13, *Revenue Recognition* (Topic 605) — Multiple-Deliverable Revenue Arrangements, or ASU 2009-13. ASU 2009-13 amends existing revenue guidance related to revenue arrangements with multiple deliverables to allow the use of companies' estimated selling prices as the value for deliverable elements under certain circumstances and to eliminate the use of the residual method for allocation of deliverable elements. ASU 2009-13 was effective for fiscal years

beginning on or after June 15, 2010, with earlier adoption permitted. We evaluated the impact of this standard on the financial statements and determined that there was no material impact on adoption.

In January 2010, the FASB issued ASU 2010-06 "*Fair Value Measurements and Disclosures*" ("ASU2010-06"). ASU 2010-06 updated section ASC 820-10 to require a greater level of disaggregated information and more robust disclosure about valuation techniques and inputs to fair value measurements. ASU 2010-06 was effective for interim and annual reporting periods beginning after December 15, 2009, with the exception of the disclosures about purchases, sales, issuances and settlements in the roll forward of activity in Level 3 fair value measures which are effective for interim and annual reporting periods beginning after December 15, 2010. The Company determined that there was no significant impact to its operations from this guidance.

(xvii) Advertising

Advertising costs are expensed as incurred. During 2010 we incurred \$23,545 in advertising expense. We did not purchase any advertising, print or otherwise, in 2011.

(xviii) Rent Expense

Rental costs are expensed as incurred. During 2011 and 2010 we incurred \$132,648 and \$140,789, respectively in rent expense for the use of our corporate office and research and development facilities.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(xix) Fair Value Measurements

The Company adopted the guidance of FASB ASC Topic 820, “*Fair Value Measurements and Disclosures*” (“ASC 820”) as of June 30, 2011, as it related to all financial assets and financial liabilities that are recognized or disclosed at fair value in the financial statements on a recurring basis.

The Company generally defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date (exit price). The Company uses a three-tier fair value hierarchy, which classifies the inputs used in measuring fair values. These tiers include: Level 1, defined as observable inputs such as quoted prices for identical instruments in active markets; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs in which little or no market data exists, therefore requiring an entity to develop its own assumptions.

Financial assets and liabilities are classified in their entirety based on the lowest level of input that is significant to the fair value measurement. The Company has determined that it does not have any financial assets measured at fair value and that its financial liabilities are currently all classified within Level 3 in the fair value hierarchy.

The following tables set forth the Company’s financial liabilities that were accounted for at fair value on a recurring basis as of December 31, 2011. The Company did not have financial liabilities measured at fair value in 2010.

| | Fair value measurements at December 31, 2011 using: | | | |
|---|---|---|---|---|
| | December 31, 2011 | Quoted prices in active markets (Level 1) | Significant other observable inputs (Level 2) | Significant unobservable inputs (Level 3) |
| Series C Common Stock Purchase Warrants | \$205,353 | \$- | \$- | \$205,353 |
| Series D Common Stock Purchase Warrants | 231,200 | - | - | 231,200 |
| | \$436,553 | \$- | \$- | \$436,553 |

| | January 1, 2011 | Change in Fair Value | December 31, 2011 |
|---|-----------------|----------------------|-------------------|
| Series C Common Stock Purchase Warrants | \$- | \$205,353 | \$205,353 |
| Series D Common Stock Purchase Warrants | - | 231,200 | 231,200 |
| | \$- | \$436,553 | \$436,553 |

(3) Property and Equipment, net

Property and equipment as of December 31, 2011 and 2010 consisted of the following components:

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| | December 31, | |
|---|--------------|-----------|
| | 2011 | 2010 |
| Laboratory and manufacturing equipment | \$172,560 | \$172,560 |
| Office equipment | 137,093 | 134,451 |
| Leasehold improvements | 8,117 | 8,117 |
| PCT collaboration, demonstration and leased systems | 461,858 | 513,256 |
| Total property and equipment | 779,628 | 828,384 |
| Less accumulated depreciation | (690,457) | (635,607) |
| Net book value | \$89,171 | \$192,777 |

Depreciation expense for the years ended December 31, 2011 and 2010 was \$92,683 and \$148,799, respectively.

(4) Intangible Assets, net

Intangible assets as of December 31, 2011 reflect an estimate of purchase price attributable to patents in connection with the 1998 acquisition of BioSeq, Inc. and the PCT business. Acquired PCT patents are being amortized to expense on a straight line basis at the rate of \$48,632 per year over their estimated remaining useful lives of approximately 6 years. We performed a review of our intangible assets for impairment. When impairment is indicated, any excess of carrying value over fair value is recorded as a loss. An impairment analysis of intangible assets was performed as of December 31, 2011. We have concluded that there is no impairment of intangible assets. Intangible assets at December 31, 2011 and 2010 consisted of the following:

| | December 31, | |
|-------------------------------|--------------|-----------|
| | 2011 | 2010 |
| PCT Patents | \$778,156 | \$778,156 |
| Less accumulated amortization | (644,394) | (595,762) |
| Net book value | \$133,762 | \$182,394 |

Amortization expense for each of the years ended December 31, 2011 and 2010 was \$48,632 and is expected to be \$48,632 per year during the next three years.

(5) Retirement Plan

We provide all of our employees with the opportunity to participate in our retirement savings plan. Our retirement savings plan has been qualified under Section 401(k) of the Internal Revenue Code. Eligible employees are permitted to contribute to the plan through payroll deductions within statutory limitations and subject to any limitations included in the plan. During 2011 and 2010 we contributed \$13,156 and \$11,232, respectively, in the form of discretionary company matching contributions.

(6) Income Taxes

The components of the benefit for income taxes are as follows:

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| | For the Year Ended December 31, | |
|--------------------------------|------------------------------------|----------|
| | 2011 | 2010 |
| Current benefit: federal | \$- | \$23,710 |
| Current benefit: state | - | - |
| Total current benefit | - | 23,710 |
| Deferred provision: federal | - | - |
| Deferred provision: state | - | - |
| Total deferred provision | - | - |
| Total benefit for income taxes | \$- | \$23,710 |

Significant items making up the deferred tax assets and deferred tax liabilities as of December 31, 2011 and 2010 are as follows:

| | December 31, | |
|--|--------------|-------------|
| | 2011 | 2010 |
| Current deferred taxes: | | |
| Accounts receivable allowance | \$3,787 | \$- |
| Other accruals | 47,631 | 56,344 |
| Less: valuation allowance | (51,418) | (56,344) |
| Total current deferred tax assets (liabilities) | \$- | \$- |
| Long term deferred taxes: | | |
| Accelerated tax depreciation | \$29,524 | \$29,472 |
| Non-cash, stock-based compensation, nonqualified | 387,676 | 389,975 |
| Goodwill and intangibles | (52,763) | (73,450) |
| Operating loss carryforwards and tax credits | 6,519,386 | 5,357,221 |
| Less: valuation allowance | (6,883,823) | (5,703,218) |
| Total long term deferred tax assets (liabilities), net | - | - |
| Total net deferred tax liabilities | \$- | \$- |

A valuation allowance is established if it is more likely than not that all or a portion of the deferred tax asset will not be realized. Accordingly, a valuation allowance was established in 2011 and 2010 for the full amount of our deferred tax assets due to the uncertainty of realization. We believe based on our projection of future taxable operating income for the foreseeable future, it is more likely than not that we will not be able to realize the benefit of the deferred tax asset at December 31, 2011. The benefit that was realized in 2010 related to legislation within the Housing Assistance Tax Act of 2008 which provided taxpayers the option to elect to claim refundable tax credits in exchange for foregoing bonus depreciation.

We had net operating loss carry-forwards for federal income tax purposes of \$10,921,054 as of December 31, 2011. Included in these numbers are loss carry-forwards that were obtained through the acquisition of BioSeq, Inc. and are subject to Section 382 NOL limitations. These net operating loss carry-forwards expire at various dates from 2012 through 2031. We have not performed a Section 382 analysis but we estimate that approximately \$50,000 of the restricted net operating loss carry-forwards will become available each year until 2031 once we generate taxable income.

We are considering whether the sale of capital stock and warrants in connection with our private placements and registered direct offering completed in 2009, 2010 and 2011 will result in further limitations of our net operating losses under Section 382.

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We had net operating loss carry-forwards for state income tax purposes of approximately \$18,986,747 at December 31, 2011. These net operating loss carry-forwards expire at various dates from 2012 through 2031.

Our effective income tax (benefit) provision rate was different than the statutory federal income tax (benefit) provision rate as follows:

| | For the Year Ended | |
|--|--------------------|--------|
| | December 31, | |
| | 2011 | 2010 |
| Federal tax benefit rate | 34 % | 34 % |
| Permanent differences | 2 % | 1 % |
| State tax expense | 0 % | 0 % |
| Refundable AMT and R&D tax credit | 0 % | (1) % |
| Net operating loss carryback | 0 % | 0 % |
| Valuation allowance | (36) % | (35) % |
| Effective income tax benefit (provision) rate from continuing operations | 0 % | (1) % |

(7) Commitments and Contingencies

Operating Leases

Our corporate offices are currently located at 14 Norfolk Avenue, South Easton, Massachusetts 02375. In November 2007, we signed a lease agreement commencing in February 2008 pursuant to which we lease approximately 5,500 square feet of office space. We extended the lease term until September 30, 2012 with a monthly payment of \$4,800.

Effective January 1, 2010, we entered into a three-year lease agreement with the University of Massachusetts in Boston, pursuant to which we are leasing laboratory and office space on campus at the university for research and development activities. We pay \$5,000 per month for the use of these facilities.

Following is a schedule by years of future minimum rental payments required under operating leases with initial or remaining non-cancelable lease terms in excess of one year as of December 31, 2011:

| | |
|---------------------------------|-----------|
| Year ending December 31: | |
| 2012 | \$117,600 |
| 2013 | 121,644 |
| Thereafter | - |
| Total minimum payments required | \$239,244 |

Royalty Commitments

BioMolecular Assays, Inc.

In 1996, we acquired our initial equity interest in BioSeq, Inc., which at the time was developing our original pressure cycling technology. BioSeq, Inc. acquired its pressure cycling technology from BioMolecular Assays, Inc. under a technology transfer and patent assignment agreement. In 1998, we purchased all of the remaining outstanding capital stock of BioSeq, Inc., and at such time, the technology transfer and patent assignment agreement was amended to require us to pay BioMolecular Assays, Inc. a 5% royalty on our sales of products or services that incorporate or utilize the original pressure cycling technology that BioSeq, Inc. acquired from BioMolecular Assays, Inc. We are also required to pay BioMolecular Assays, Inc. 5% of the proceeds from any sale, transfer or license of all or any portion of the original pressure cycling technology. These payment obligations terminate in 2016. During the fiscal years ended December 31, 2011 and 2010, we incurred \$21,090 and \$36,330 in royalties, respectively.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

In connection with our acquisition of BioSeq, Inc., we licensed certain limited rights to the original pressure cycling technology back to BioMolecular Assays, Inc. This license is non-exclusive and limits the use of the original pressure cycling technology by BioMolecular Assays, Inc. solely for molecular applications in scientific research and development and in scientific plant research and development. BioMolecular Assays, Inc. is required to pay us a royalty equal to 20% of any license or other fees and royalties, but not including research support and similar payments, it receives in connection with any sale, assignment, license or other transfer of any rights granted to BioMolecular Assays, Inc. under the license. BioMolecular Assays, Inc. must pay us these royalties until the expiration of the patents held by BioSeq, Inc. in 1998, which we anticipate will be 2016. We have not received any royalty payments from BioMolecular Assays, Inc. under this license.

Battelle Memorial Institute

In December 2008, we entered into an exclusive patent license agreement with the Battelle Memorial Institute ("Battelle"). The licensed technology is described in the patent application filed by Battelle on July 31, 2008 (US serial number 12/183,219). This application includes subject matter related to a method and a system for improving the analysis of protein samples, including through an automated system utilizing pressure and a pre-selected agent to obtain a digested sample in a significantly shorter period of time than current methods, while maintaining the integrity of the sample throughout the preparatory process. Pursuant to the terms of the agreement, we paid Battelle a non-refundable initial fee of \$35,000. In addition to royalty payments on net sales on "licensed products", we are obligated to make minimum royalty payments for each year that we retain the rights outlined in the patent license agreement and we are required to have our first commercial sale of the licensed products within one year following the issuance of the patent covered by the licensed technology. The minimum annual royalty for 2010 was \$5,000. Our only obligation for 2011 was a minimum royalty payment of \$7,500.

Target Discovery Inc.

In March 2010, we signed a strategic product licensing, manufacturing, co-marketing, and collaborative research and development agreement with Target Discovery Inc. ("TDI"). Under the terms of the agreement, we have been licensed by TDI to manufacture and sell a highly innovative line of chemicals used in the preparation of tissues for scientific analysis ("TDI reagents"). The TDI reagents were designed for use in combination with our pressure cycling technology. The companies believe that the combination of PCT and the TDI reagents can fill an existing need in life science research for an automated method for rapid extraction and recovery of intact, functional proteins associated with cell membranes in tissue samples. We owe a royalty of approximately \$1,200 for 2011.

Severance and Change of Control Agreements

Each of Mr. Schumacher, Dr. Ting, Dr. Lazarev, and Dr. Lawrence, executive officers of the Company, is entitled to receive a severance payment if terminated by us without cause. The severance benefits would include a payment in an amount equal to one year of such executive officer's annualized base salary compensation plus accrued paid time off. Additionally, the officer will be entitled to receive medical and dental insurance coverage for one year following the date of termination.

Each of these executive officers, other than Mr. Schumacher, is entitled to receive a change of control payment in an amount equal to one year of such executive officer's annualized base salary compensation, accrued paid time off, and medical and dental coverage, in the event of a change of control of the Company. In the case of Mr. Schumacher, this payment would be equal to two years of annualized base salary compensation, accrued paid time off, and two years of medical and dental coverage. The severance payment is meant to induce the executive to become an employee of the Company and to remain in the employ of the Company, in general, and particularly in the occurrence of a change in control.

Investment Banking Agreement

On November 4, 2011, the Company entered into an agreement with a former placement agent, pursuant to which the Company and the placement agent released each other of their respective obligations under a prior investment banking agreement. In connection with this agreement, the Company issued the placement agent a promissory note with an original principal amount of \$150,000 with a maturity date of May 4, 2012. The promissory note is interest free, provided that, if the Company does not repay the principal amount on or before the maturity date, it will accrue interest at a rate of 18% per annum.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(8) Stockholders' Equity (Deficit)

Preferred Stock

We are authorized to issue 1,000,000 shares of preferred stock with a par value of \$0.01. Of the 1,000,000 shares of preferred stock, 20,000 shares have been designated as Series A Junior Participating Preferred Stock, 313,960 shares have been designated as Series A Convertible Preferred Stock, 279,256 shares have been designated as Series B Convertible Preferred Stock, 88,098 shares have been designated as Series C Convertible Preferred Stock and 850 shares have been designated as Series D Convertible Preferred Stock. As of December 31, 2011, there were 88,098 shares of Series C Convertible Preferred Stock outstanding and 743 shares of Series D Convertible Preferred Stock issued and outstanding. As of December 31, 2011, there were no shares of Series A Junior Participating Preferred Stock, Series A Convertible Preferred Stock or Series B Convertible Preferred Stock issued and outstanding.

Series A Convertible Preferred Stock

On February 12, 2009, we completed a private placement, pursuant to which we sold an aggregate of 156,980 units (the "Series A Units") for a purchase price of \$11.50 per unit (the "Series A Purchase Price"), resulting in gross proceeds to us of \$1,805,270 (the "Series A Private Placement"). Each Series A Unit consisted of (i) one share of Series A Convertible Preferred Stock convertible into 10 shares of our common stock, (ii) a warrant to purchase one share of Series A Convertible Preferred Stock at an exercise price equal to \$12.50 per share, with a term expiring 15 months after the date of closing ("15-Month Series A Preferred Stock Warrant"); and (iii) a warrant to purchase 10 shares of common stock at an exercise price equal to \$2.00 per share, with a term expiring 30 months after the date of closing (the "30-Month Common Stock Warrants"). We did not pay any placement fees associated with this transaction but the expenses related to the offering totaled approximately \$233,000.

As a result of the issuance of Common Stock in connection with dividends paid on the Series A Preferred Stock and the Series B Preferred Stock, the exercise price of the 30-Month Common Stock Warrants has been adjusted from \$2.00 to \$1.72 in accordance with the terms of the 30-Month Common Stock Purchase Warrants.

On or about August 10, 2011, holders of 30-Month Common Stock Warrants to purchase 1,569,800 shares of Common Stock entered into an amendment to the 30-Month Common Stock Warrants which extended the expiration date of the warrants to August 11, 2012. On or about September 30, 2011, 30-Month Common Stock Warrants to purchase 1,556,750 shares of Common Stock were further amended to reduce the exercise price from \$1.74 to \$0.90 and to extend the term until August 12, 2016 and, with respect to affiliates, August 12, 2015. A 30-Month Common Stock Warrant to purchase 13,050 shares of Common Stock was not amended and was further adjusted by common

stock dividends issued in October 2011 resulting in an effective exercise price of \$1.72 per share, subject to future adjustment, with a term expiring on August 11, 2012.

The proceeds from the sale of each Series A Unit was allocated between the Series A Convertible Preferred Stock, the 15-Month Series A Preferred Stock Warrant and the 30-Month Common Stock Warrant based on the residual method. The estimated fair value of the warrants was determined using the Black-Scholes formula, resulting in an allocation of the gross proceeds of \$882,253 to the total warrants issued. The allocation of the gross proceeds to the Series A Convertible Preferred Stock was \$923,017. In accordance with the provisions of ASC 470-20, *Debt with Conversion and Other Options* ("ASC 470-20"), an additional adjustment between Additional Paid in Capital and Accumulated Deficit of \$489,803 was recorded to reflect an implicit non-cash dividend related to the allocation of proceeds between the stock and warrants issued. The \$489,803 represents the value of the adjustment to additional paid in capital related to the beneficial conversion feature of the Series A Convertible Preferred Stock. The value adjustment was calculated by subtracting the fair market value of the underlying common stock on February 12, 2009 issuable upon conversion of the Series A Convertible Preferred Stock from the fair market value of the Series A Convertible Preferred Stock as determined when the Company performed a fair market value allocation of the proceeds to the Series A Convertible Preferred Stock and warrants.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

In September and October 2011, all shares of the outstanding shares of Series A Convertible Preferred Stock were voluntarily converted. The Company has no obligation or intention to issue any more shares of Series A Convertible Preferred Stock.

Each share of Series A Convertible Preferred Stock received a cumulative dividend at the rate of 5% per annum of the Series A Purchase Price, payable semi-annually on June 30 and December 31, commencing on June 30, 2009 (with the first payment being pro-rated based on the number of days occurring between the date of issuance and June 30, 2009). The Company was permitted to pay dividends in cash or in shares of common stock at our option, subject to certain conditions. The shares of Series A Convertible Preferred Stock were also entitled to a liquidation preference, such that in the event of any voluntary or involuntary liquidation, dissolution or winding up of our Company, the holders of Series A Convertible Preferred Stock would have been paid out of the assets of the Company available for distribution to our stockholders before any payment was paid to the holders of common stock, an amount per share equal to the Series A Purchase Price, plus accrued and unpaid dividends. The Series A Convertible Preferred Stock would have been treated on an equivalent basis with the holders of the Series B Convertible Preferred Stock and Series C Convertible Preferred Stock with respect to payments made in connection with a liquidation. The Board approved the final payment to Series A holders in the form of common stock for accrued dividends through September 30, 2011.

Each share of Series A Convertible Preferred Stock was convertible into 10 shares of common stock at any time at the option of the holder, subject to adjustment for stock splits, stock dividends, recapitalizations and similar transactions (the "Series A Conversion Ratio"). Unless waived under certain circumstances by the holder of Series A Convertible Preferred Stock, such holder's shares of Series A Convertible Preferred Stock could not have been converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds. Each share of Series A Convertible Preferred Stock would have been automatically converted into shares of common stock at the Series A Conversion Ratio then in effect: (i) if, after 12 months from the closing of the Series A Private Placement, the common stock traded on the NASDAQ Capital Market (or other primary trading market or exchange on which the common stock was then traded) at a price equal to \$4.00 for 20 out of 30 consecutive trading days with average daily trading volume of at least 10,000 shares or (ii) upon a registered public offering by the Company at a per share price equal to \$2.30 with aggregate gross proceeds to the Company of not less than \$10 million.

The holders of Series A Convertible Preferred Stock were not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except that the holders of Series A Convertible Preferred Stock would have been entitled to vote separately as a class on any matters that would amend, alter or repeal any provision of our Restated Articles of Organization, as amended, in a manner that adversely affects the powers, preferences or rights of the Series A Convertible Preferred Stock and such holders would have been entitled to vote on any matters required by law.

At any time after February 11, 2014, upon 30 days written notice, we would have had the right to redeem the outstanding shares of Series A Convertible Preferred Stock at a price equal to the Series A Purchase Price, plus all accrued and unpaid dividends thereon. The redemption price could have also been paid in two annual installments.

On or about September 30, 2011, 46 of the 47 holders of both the outstanding Series A Convertible Preferred Stock and Series A 30-Month Common Stock Purchase Warrants, issued in the Series A Convertible Preferred Stock financing completed by the Company in February 2009, voluntarily converted an aggregate of 247,187 shares of Series A Preferred Stock into 2,471,870 shares of the Company's Common Stock.

15-Month Series A Preferred Stock Warrants and 30-Month Common Stock Warrants

Subject to the terms and conditions of the applicable warrants, the Company had the right to call for cancellation of the 15-Month Series A Preferred Stock Warrants if the volume weighted average price of our common stock on the NASDAQ Capital Market (or other primary trading market or exchange on which our common stock is then traded) equaled or exceeded \$1.75 for either (i) 10 consecutive trading days or (ii) 15 out of 25 consecutive trading days. Pursuant to these provisions, on March 30, 2010, the Company called all of the 15-Month Series A Preferred Stock Warrants.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The 15-Month Series A Preferred Stock Warrants had an exercise price equal to \$12.50 per share, with a term expiring on May 12, 2010. Each of the 15-Month Series A Preferred Stock Warrants were exercised in connection with the warrant call and, therefore, there are no longer any 15-Month Series A Preferred Stock Warrants outstanding. The amended 30-Month Common Stock Warrants have an exercise price equal to \$0.90 per share, with a term expiring on August 12, 2016 (August 12, 2015 for Affiliates). Unless waived under certain circumstances by the holder of the 30-Month Common Stock Warrant, such holder's 30-Month Common Stock Warrants may not be exercised if upon such exercise the holder's beneficial ownership would exceed certain thresholds. Each of the 15-Month Series A Preferred Stock Warrants permitted, and each of the 30-Month Common Stock Warrants permit the holder to conduct a "cashless exercise" at any time the holder of the warrant is an "affiliate" as defined in the applicable Securities Purchase Agreement of the Company.

The warrant exercise price and/or number of shares issuable upon exercise of the applicable warrant were subject to adjustment for stock dividends, stock splits or similar capital reorganizations, as set forth in the warrants. The 30-Month Common Stock Warrants that were amended as described above, no longer provide for adjustment to the exercise price and/or number of shares issuable upon exercise of the applicable warrant for stock dividends.

Subject to the terms and conditions of the 30-Month Common Stock Warrant, the Company has the right to call for cancellation the 30-Month Common Stock Warrant if the volume weighted average price for our common stock on the NASDAQ Capital Market (or other primary trading market or exchange on which our common stock is then traded) equals or exceeds \$2.80 for either (i) 10 consecutive trading days or (ii) 15 out of 25 consecutive trading days.

The warrants granted in connection with the Series A Units were valued based on a Black-Scholes pricing model at the date of the grant. The 15-Month Series A Preferred Stock Warrants and 30-Month Common Stock Warrants were granted with an exercise price of \$12.50 per share of Series A Convertible Preferred Stock and \$2.00 per share of common stock, respectively. The 15-Month Series A Preferred Stock Warrants and 30-Month Common Stock Warrants vested immediately. The relative fair value of the warrants was calculated to be \$882,253 and was recorded to stockholders' equity in the first quarter of 2009. The assumptions for the Black-Scholes pricing model are represented in the table below with the 15-month Series A Preferred Stock Warrants being reflected on a per share common stock equivalent basis.

| Assumptions | Preferred | Common |
|---------------------------|-----------|--------|
| Expected life (in months) | 15.0 | 30.0 |
| Expected volatility | 142.0% | 109.0% |
| Risk-free interest rate | 0.875% | 1.375% |
| Exercise price | \$1.25 | \$2.00 |
| Stock price | \$0.90 | \$0.90 |
| Fair value per warrant | \$0.45 | \$0.41 |

On March 30, 2010, the Company called for cancellation any 15-Month Series A Preferred Stock Warrants that remained unexercised as of April 28, 2010. In connection with this warrant call, 15-Month Series A Preferred Stock Warrants to purchase 98,372 shares of Series A Convertible Preferred Stock were exercised at \$12.50 per share, for gross proceeds to the Company of \$1,229,650, before deducting expenses associated with the warrant call notice. 15-Month Series A Preferred Stock Warrants to purchase an additional 10,150 shares of Preferred Stock were exercised on a cashless basis, resulting in the net issuance of 2,883 shares of Series A Convertible Preferred Stock. Pursuant to the terms of the 15-Month Series A Preferred Stock Warrants, upon exercise of such warrants, the holders became entitled to receive an aggregate of 57,390 shares of common stock in payment of dividends on the Series A Convertible Preferred Stock paid on June 30, 2009 and December 31, 2009.

Series B Convertible Preferred Stock

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On November 18, 2009, we sold an aggregate of 62,039 units (the "Series B Units") for a purchase price of \$18.80 per unit (the "Series B Purchase Price"), resulting in gross proceeds to us of \$1,166,333. This was the first tranche of a \$2.5 million private placement. The second tranche closed on March 18, 2010 for the sale of 26,672 Series B Units with gross proceeds of \$501,434 (collectively the two tranches are referred to as the "Series B Private Placements"). Each Series B Unit consisted of (i) one share of Series B Convertible Preferred Stock convertible into 10 shares of our common stock and (ii) a warrant to purchase one share of Series B Convertible Preferred Stock at an exercise price equal to \$23.80 per share for warrants issued in November 2009 and at an exercise price of \$28.80 for warrants issued in March 2010, in each case with a term expiring on August 11, 2011 (the "Series B Warrant").

In connection with the Series B Private Placements, we paid a finder's fee of \$100,478, plus warrants to purchase 5,344 shares of Series B Convertible Preferred Stock at \$28.80 per share, expiring August 11, 2012.

On or about August 10, 2011, holders of the Series B Warrants to purchase 887,110 shares of Common Stock entered into an amendment to the Series B Warrants which extended the expiration date of the Series B Warrants to August 11, 2012 and provided that they would be issuable for the equivalent number of shares of Common Stock at a proportionate exercise price. On or about September 30, 2011, Series B Warrants to purchase 887,110 shares of Common Stock were further amended to reduce the exercise price from \$2.38 to \$1.43, for Series B Warrants issued in November 2009, and from \$2.88 to \$1.75, for Series B Warrants issued in March 2010 and to extend the term of the Series B Warrants until August 12, 2016 and, with respect to affiliates, until August 12, 2015. All of the Series B Warrants are no longer exercisable for shares of Series B Convertible Preferred Stock.

The proceeds from the sale of each Series B Unit were allocated between the Series B Convertible Preferred Stock and the Series B Warrant based on the residual method. The estimated fair value of the Series B Warrants was determined using the Black-Scholes formula, resulting in an allocation of the gross proceeds of \$592,685 to the total warrants issued for both tranches. The allocation of the gross proceeds to the Series B Convertible Preferred Stock was \$1,075,083 for both tranches. In accordance with the provisions of ASC 470-20, an additional adjustment between Additional Paid in Capital and Accumulated Deficit of \$294,838 was recorded to reflect an implicit non-cash dividend related to the allocation of proceeds between the Series B Convertible Preferred Stock and Series B Warrants issued in both tranches. The \$294,838 represents the value of the adjustment to additional paid in capital related to the beneficial conversion feature of the Series B Convertible Preferred Stock. The value adjustment was calculated by subtracting the fair market value of the underlying common stock issuable upon conversion of the Series B Convertible Preferred Stock on the date of the respective closing from the fair market value of the Series B Convertible Preferred Stock as determined when the Company performed a fair market value allocation of the proceeds to the Series B Convertible Preferred Stock and Series B Warrants.

On or about September 30, 2011, all of the outstanding shares of Series B Convertible Preferred Stock were voluntarily converted into shares of Common Stock.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Each share of Series B Convertible Preferred Stock received a cumulative dividend at the rate of 5% per annum of the Series B Purchase Price, payable semi-annually on June 30 and December 31, commencing on December 31, 2009 (with the first payment being pro-rated based on the number of days occurring between the date of issuance and December 31, 2009). The Company was permitted to pay dividends in cash or in shares of common stock at our option, subject to certain conditions. The shares of Series B Convertible Preferred Stock were also entitled to a liquidation preference, such that in the event of any voluntary or involuntary liquidation, dissolution or winding up of our Company, the holders of Series B Convertible Preferred Stock would have been paid out of the assets of the Company available for distribution to our stockholders before any payment was paid to the holders of common stock, an amount per share equal to the Series B Purchase Price, plus accrued and unpaid dividends. The Series B Convertible Preferred Stock would have been treated on an equivalent basis with the holders of the Series A Convertible Preferred Stock and Series C Convertible Preferred Stock with respect to payments made in connection with a liquidation. The Board approved the method of payment in the form of common stock for the dividends payable with respect to December 31, 2009 and the June 30, 2010 (to the holders of Series B Convertible Preferred Stock issued in November 2009). The Board approved the method of payment in the form of cash for the dividends payable with respect to June 30, 2010 (to the holders of Series B Convertible Preferred Stock issued in March 2010), December 31, 2010 and for all dividends accrued through December 31, 2011.

Each share of Series B Convertible Preferred Stock was convertible into 10 shares of common stock at any time at the option of the holder, subject to adjustment for stock splits, stock dividends, recapitalizations and similar transactions (the "Series B Conversion Ratio"). Each share of Series B Convertible Preferred Stock would have been automatically converted into shares of common stock at the Series B Conversion Ratio then in effect: (i) if, after 12 months from the closing of the applicable tranche of the Series B Private Placement, the common stock traded on the NASDAQ Capital Market (or other primary trading market or exchange on which the common stock was then traded) at a price equal \$5.64 for 20 out of 30 consecutive trading days with average daily trading volume of at least 10,000 shares or (ii) upon a registered public offering by the Company at a per share price equal to \$5.64, with aggregate gross proceeds to the Company of not less than \$10 million. Unless waived under certain circumstances by the holder of the Series B Convertible Preferred Stock, such holder's Series B Convertible Preferred Stock could not have been converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

The holders of Series B Convertible Preferred Stock were not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except that the holders of Series B Convertible Preferred Stock would have been entitled to vote separately as a class on any matters that would amend, alter or repeal any provision of our Restated Articles of Organization, as amended, in a manner that adversely affects the powers, preferences or rights of the Series B Convertible Preferred Stock and such holders would have also been entitled to vote on any matters required by law.

At any time after February 12, 2014, upon 30 days written notice, we would have had the right to redeem the outstanding shares of Series B Convertible Preferred Stock at a price equal to the Series B Purchase Price, plus all accrued and unpaid dividends thereon. The redemption price would have been payable in two annual installments. The Series B Convertible Preferred Stock, the Series A Convertible Preferred Stock and Series C Convertible Preferred

Stock would have been treated on an equivalent basis with respect to payments made in connection with redemption.

Series B Warrants

The Series B Warrants issued in November 2009 originally had an exercise price equal to \$23.80 and the Series B Warrants issued in March 2010 originally had an exercise price equal to \$28.80, in each case with a term expiring on August 11, 2011. The Series B Warrants currently have an exercise price of \$1.43 for Series B Warrants issued in November 2009, and \$1.75 for Series B Warrants issued in March 2010, in each case with a term expiring on August 12, 2016 and, with respect to affiliates, August 12, 2015. The Series B Warrants are currently exercisable for shares of Common Stock. The Series B Warrants permit the holder to conduct a “cashless exercise” at any time the holder of the Series B Warrant is an “affiliate” (as defined in the Securities Purchase Agreement) of the Company.

The Series B Warrant exercise price and/or number of shares issuable upon exercise of the Series B Warrant will be subject to adjustment for stock splits or similar capital reorganizations, as set forth in the Series B Warrants, as amended.

Subject to the terms and conditions of the Series B Warrants, the Company has the right to call for cancellation of the Series B Warrants if the volume weighted average price of our common stock on the NASDAQ Capital Market (or other primary trading market or exchange on which our common stock is then traded) equals or exceeds \$4.70 for either (i) 10 consecutive trading days or (ii) 15 out of 25 consecutive trading days.

In connection with the Series B Private Placements, we issued warrants to our placement agent to purchase 5,344 shares of Series B Convertible Preferred Stock at \$28.80 per share, expiring August 11, 2012. The Series B Warrants and placement agent warrants were valued based on a Black-Scholes pricing model at the date of the grants. The Series B Warrants and placement agent warrants vested immediately. The relative fair value of the Series B Warrants was calculated to be \$173,060 and was recorded to stockholders' equity. The assumptions for the Black-Scholes pricing model are represented in the table below for the warrants issued in both tranches reflected on a per share common stock equivalent basis. The assumptions for the placement agent show the range of values for both tranches.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| Assumptions | Preferred Placement Agent | |
|---------------------------|---------------------------|--------|
| Expected life (in months) | 21.0 | 33.0 |
| Expected volatility | 142.0% | 119.0% |
| Risk-free interest rate | 1.000% | 1.380% |
| Exercise price | \$2.38 | \$2.88 |
| Fair value per warrant | \$0.95 | \$0.80 |

Series C Convertible Preferred Stock

On April 8, 2011 and April 12, 2011, we completed the first tranche of a private placement, pursuant to which we sold an aggregate of 55,048 units for a purchase price of \$15.00 per unit, resulting in gross proceeds to us of \$825,720 (the “Series C Private Placement”). This was the first tranche of the Series C Private Placement. In connection with the second tranche, the purchase price was reduced to \$12.50 per unit and we issued an additional 11,011 units to the purchasers who participated in the first tranche, without any additional gross proceeds to us. The second tranche closed on June 20, 2011 for the sale of 22,039 Series C Units (as defined below) for a purchase price of \$12.50 per unit with gross proceeds of \$275,485. Each unit (“Series C Unit”) consists of (i) one share of Series C Convertible Preferred Stock, \$0.01 par value per share (the “Series C Convertible Preferred Stock”) convertible into 10 shares of our Common Stock, (subject to adjustment for stock splits, stock dividends, recapitalization, etc.) and (ii) a three-year warrant to purchase 10 shares of our Common Stock at a per share exercise price equal to the sum of (i) the Common Stock equivalent of the Series C Purchase Price (ii) plus \$0.88 (the “Series C Warrant”). The Series C Warrants are exercisable until the close of business on the third anniversary of the applicable closing date.

We engaged an investment banker (the “Investment Banker”) to assist with the Series C Private Placement. The Company paid the Investment Banker a cash retainer fee of \$50,000 and issued a warrant to the Investment Banker to purchase 100,000 shares of Common Stock at an exercise price of \$3.00 per share. In connection with the Series C Private Placement, we paid the Investment Banker a fee of (i) approximately \$66,000 cash, (ii) an expense allowance of approximately \$16,500, (iii) a warrant to purchase 61,638 shares of Common Stock exercisable at a purchase price of \$1.50, and (iv) a warrant to purchase 61,638 shares of Common Stock exercisable at a purchase price of \$2.38.

The proceeds from the sale of each Series C Unit was allocated between the Series C Convertible Preferred Stock and the Series C Warrants based on the residual method. The estimated fair value of the Series C Warrants was determined using a binomial formula, resulting in an allocation of the gross proceeds of \$583,250 to the total warrants issued. The allocation of the gross proceeds to the Series C Convertible Preferred Stock was \$517,958. In accordance with the provisions of ASC 470-20, an additional adjustment between Additional Paid in Capital and Accumulated Deficit of \$476,434 was recorded to reflect an implicit non-cash dividend related to the allocation of proceeds between the stock and warrants issued. The \$476,434 represents the value of the adjustment to additional paid in capital related to the beneficial conversion feature of the Series C Convertible Preferred Stock. The value adjustment was calculated by

subtracting the fair market value of the underlying common stock on April 7 and June 20 issuable upon conversion of the Series C Convertible Preferred Stock from the fair market value of the Series C Convertible Preferred Stock as determined when the Company performed a fair market value allocation of the proceeds to the Series C Convertible Preferred Stock and warrants. We used a binomial formula since the warrants have down-round protection and are recorded as a liability. See “Warrant Derivative Liability” section within this footnote.

Each share of Series C Convertible Preferred Stock will receive a cumulative dividend at the rate of 5% per annum of the respective tranche purchase price, payable semi-annually on June 30 and December 31, commencing on June 30, 2011 (with the first payment being pro-rated based on the number of days occurring between the date of issuance and June 30, 2011). Dividends may be paid in cash or in shares of common stock at our option, subject to certain conditions. The shares of Series C Convertible Preferred Stock also are entitled to a liquidation preference, such that in the event of any voluntary or involuntary liquidation, dissolution or winding up of our Company, the holders of Series C Convertible Preferred Stock will be paid out of the assets of the Company available for distribution to our stockholders before any payment shall be paid to the holders of common stock, an amount per share equal to the Series C Purchase Price, plus accrued and unpaid dividends. Prior to the conversion of all of the outstanding shares of Series A Convertible Preferred Stock and Series B Convertible Preferred Stock, the Series C Convertible Preferred Stock was treated on an equivalent basis with the Series A Convertible Preferred Stock and Series C Preferred Stock with respect to payments made in connection with a liquidation. The Company elected to pay the dividend payable on June 30, 2011 in cash.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Each share of Series C Convertible Preferred Stock is convertible into 10 shares of common stock at any time at the option of the holder, subject to adjustment for stock splits, stock dividends, recapitalizations and similar transactions (the "Series C Conversion Ratio"). Each share of Series C Convertible Preferred Stock will automatically be converted into shares of common stock at the Series C Conversion Ratio then in effect: (i) if, after 12 months from the closing of the applicable tranche of the Series C Private Placement, the common stock trades on the NASDAQ Capital Market (or other primary trading market or exchange on which the common stock is then traded) at a price equal to three-tenths of the Series C Unit purchase price for 20 out of 30 consecutive trading days with average daily trading volume of at least 10,000 shares or (ii) upon a registered public offering by the Company at a per share price equal to at least three-tenths of the Series C Unit purchase price, with aggregate gross proceeds to the Company of not less than \$10 million. Unless waived under certain circumstances by the holder of the Series C Convertible Preferred Stock, such holder's Series C Convertible Preferred Stock may not be converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

The holders of Series C Convertible Preferred Stock are not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except that the holders of Series C Convertible Preferred Stock may vote separately as a class on any matters that would amend, alter or repeal any provision of our Restated Articles of Organization, as amended, in a manner that adversely affects the powers, preferences or rights of the Series C Convertible Preferred Stock and such holders may also vote on any matters required by law.

If we consummate an equity financing (other than the exercise of employee stock options under the Company's stock option plans, the Series C Private Placement or the exercise of any Series C Warrants, or the exercise or conversion of any currently outstanding Common Stock equivalents) within twelve months after the initial Closing and the gross proceeds to the Company from the sale of the Units are less than \$4 million, then each holder of Series C Units may exchange all, but not less than all, of his, her or its Series C Units for the equity securities issued in such next financing and shall become subject to the terms and conditions of such next financing; provided that the exchange of the purchaser's Series C Units for next financing securities is permitted under the rules and regulations of the NASDAQ Trading Market then in effect. The number of next financing securities into which a purchaser's Series C Units may be exchanged shall be determined by dividing (a) the aggregate per unit purchase price at which the Series C Units being exchanged were issued, by (b) the price per next financing security at which such securities were issued in the next financing. The requisite holders of the Series C Units waived such right with respect to the Company's recently completed equity financing. At any time after February 12, 2014, upon 30 days written notice, we have the right to redeem the outstanding shares of Series C Convertible Preferred Stock at a price equal to the Series C Unit purchase price, plus all accrued and unpaid dividends thereon. The redemption price may be paid in two annual installments. All holders of Series C Convertible Preferred Stock will be treated on an equivalent basis with respect to payments made in connection with redemption.

Series C Warrants

The Series C Warrants have an exercise price equal to \$2.13 with a term expiring on the third anniversary of the deal closing. The Series C Warrants permit the holder to conduct a “cashless exercise” at any time the holder of the Series C Warrant is an “affiliate” (as defined in the Securities Purchase Agreement) of the Company.

The Series C Warrant exercise price and/or number of shares issuable upon exercise of the Series C Warrant will be subject to adjustment for stock dividends, stock splits or similar capital reorganizations, as set forth in the Series C Warrants.

Subject to the terms and conditions of the Series C Warrants, the Company has the right to call for cancellation the Series C Warrants if the volume weighted average price of our common stock on the NASDAQ Capital Market (or other primary trading market or exchange on which our common stock is then traded) equals or exceeds two times the per common share exercise price for either (i) 10 consecutive trading days or (ii) 15 out of 25 consecutive trading days.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Series D Convertible Preferred Stock

On November 11, 2011, we completed a registered direct offering, pursuant to which we sold an aggregate of 843 units for a purchase price of \$1,000.00 per unit, resulting in gross proceeds to us of \$843,000 (the "Series D Placement"). Each unit ("Series D Unit") consists of (i) one share of Series D Convertible Preferred Stock, \$0.01 par value per share (the "Series D Convertible Preferred Stock") convertible into 1,538.46 shares of our Common Stock, (subject to adjustment for stock splits, stock dividends, recapitalization, etc.) and (ii) one five-year warrant to purchase approximately 614 shares of our Common Stock at a per share exercise price of \$0.81, subject to adjustment as provided in the Warrants ("Series D Warrant"). The Series D Warrants will be exercisable beginning on May 11, 2012 and until the close of business on the fifth anniversary of the initial exercise date.

We engaged an investment banker to assist with the Series D Placement. In connection with the Series D Placement, we paid the investment banker a fee of approximately \$67,000 cash.

The proceeds from the sale of each Series D Unit was allocated between the Series D Convertible Preferred Stock and the Series D Warrants based on the residual method. The estimated fair value of the Series D Warrants was determined using a binomial formula, resulting in an allocation of the gross proceeds of \$283,725 to the total warrants issued. The allocation of the gross proceeds to the Series D Convertible Preferred Stock was \$559,275. In accordance with the provisions of ASC 470-20, an additional adjustment between Additional Paid in Capital and Accumulated Deficit of \$530,140 was recorded to reflect an implicit non-cash dividend related to the allocation of proceeds between the stock and warrants issued. The \$530,140 represents the value of the adjustment to additional paid in capital related to the beneficial conversion feature of the Series D Convertible Preferred Stock. The value adjustment was calculated by subtracting the fair market value of the underlying common stock on November 10, 2011 issuable upon conversion of the Series D Convertible Preferred Stock from the fair market value of the Series D Convertible Preferred Stock as determined when the Company performed a fair market value allocation of the proceeds to the Series D Convertible Preferred Stock and warrants. The warrants are recorded as a liability. See "Warrant Derivative Liability" below.

The Series D Convertible Preferred Stock will rank senior to the Company's Common Stock and Series C Convertible Preferred Stock with respect to payments made upon liquidation, winding up or dissolution. Upon any liquidation, dissolution or winding up of the Company, after payment of the Company's debts and liabilities, and before any payment is made to the holders of any junior securities, the holders of Series D Convertible Preferred Stock will first be entitled to be paid \$1,000 per share subject to adjustment for accrued but unpaid dividends.

We may not pay any dividends on shares of common stock unless we also pay dividends on the Series D Convertible Preferred Stock in the same form and amount, on an as-if-converted basis, as dividends actually paid on shares of our common stock. Except for such dividends, no other dividends may be paid on the Series D Convertible Preferred Stock.

Each share of Series D Convertible Preferred Stock is convertible into 1,538.46 shares of common stock (based upon an initial conversion price of \$0.65 per share) at any time at the option of the holder, subject to adjustment for stock splits, stock dividends, combinations, and similar recapitalization transactions (the "Series D Conversion Ratio"). Subject to certain exceptions, if the Company issues any shares of common stock or common stock equivalents at a per share price that is lower than the conversion price of the Series D Convertible Preferred Stock, the conversion price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued. Each share of Series D Convertible Preferred Stock will automatically be converted into shares of common stock at the Series D Conversion Ratio then in effect if, after six months from the closing of the Series D Placement, the common stock trades on the NASDAQ Capital Market (or other primary trading market or exchange on which the common stock is then traded) at a price equal to at least 300% of the then effective Series D Convertible Preferred Stock conversion price for 20 out of 30 consecutive trading days with each trading day having a volume of at least \$50,000. Unless waived under certain circumstances by the holder of the Series D Convertible Preferred Stock, such holder's Series D Convertible Preferred Stock may not be converted if upon such conversion the holder's beneficial ownership would exceed certain thresholds.

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

In addition, in the event we consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license 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 D Convertible Preferred Stock will be entitled to receive upon conversion of the Series D Convertible Preferred Stock the same kind and amount of securities, cash or property which the holders of the Series D Convertible Preferred Stock would have received had they converted the Series D Convertible Preferred Stock immediately prior to such fundamental transaction.

The holders of Series D Convertible Preferred Stock are not entitled to vote on any matters presented to the stockholders of the Company for their action or consideration at any meeting of stockholders of the Company (or by written consent of stockholders in lieu of meeting), except that the holders of Series D Convertible Preferred Stock may vote separately as a class on any matters that would (i) amend, our Restated Articles of Organization, as amended, in a manner that adversely affects the rights of the Series D Convertible Preferred Stock, (ii) alter or change adversely the powers, preferences or rights of the Series D Convertible Preferred Stock or alter or amend the certificate of designation, (iii) authorize or create any class of shares ranking as to dividends, redemption or distribution of assets upon liquidation senior to, or otherwise pari passu with, the Series D Convertible Preferred Stock, or (iv) increase the number of authorized shares of Series D Convertible Preferred Stock.

If, within 12 months of the initial issuance of the Series D Convertible Preferred Stock, we issue any common stock, common stock equivalents, indebtedness or any combination thereof (a "Subsequent Financing"), the holders of Series D Convertible Preferred Stock will have the right to participate on a pro-rata basis in up to 50% of such Subsequent Financing.

Series D Warrants

The Series D Warrants have an exercise price equal to \$0.81 per share of Common Stock. The Series D Warrants will be exercisable beginning on the six month anniversary of the date of issuance and expire five years from the initial exercise date. The Series D Warrants permit the holder to conduct a "cashless exercise" at any time a registration statement registering, or the prospectus contained therein is not available for, the issuance of the shares of Common Stock issuable upon exercise of the Series D Warrant, and under certain circumstances at the expiration of the Series D Warrants. The exercise price and/or number of shares of Common Stock issuable upon exercise of the Series D Warrants will be subject to adjustment for certain stock dividends, stock splits or similar capital reorganizations, as set forth in the Warrants. The exercise price is also subject to adjustment in the event that we issue any shares of common stock or common stock equivalents at a per share price that is lower than the exercise price for the Series D Warrants then in effect. Upon any such issuance, subject to certain exceptions, the exercise price will be reduced to the per share price at which such shares of common stock or common stock equivalents are issued. Unless waived under certain circumstance by the holder of a Warrant, such holder may not exercise the Warrant if upon such exercise the holder's beneficial ownership of the Company's Common Stock would exceed certain thresholds. In the event we

consummate a merger or consolidation with or into another person or other reorganization event in which our shares of common stock are converted or exchanged for securities, cash or other property, or we sell, lease, license 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 D Warrants will be entitled to receive upon exercise of the Series D Warrants the same kind and amount of securities, cash or property which the holders would have received had they exercised the Series D Warrants immediately prior to such fundamental transaction.

Common Stock

Shareholders Purchase Rights Plan

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

On March 3, 2003, our Board of Directors adopted a shareholder purchase rights plan (“the Rights Plan”) and declared a distribution of one Right for each outstanding share of our common stock to shareholders of record at the close of business on March 21, 2003 (the “Rights”). Initially, the Rights will trade automatically with the common stock and separate Right Certificates will not be issued. The Rights Plan is designed to deter coercive or unfair takeover tactics and to ensure that all of our shareholders receive fair and equal treatment in the event of an unsolicited attempt to acquire the Company. The Rights Plan was not adopted in response to any effort to acquire the Company and the Board is not aware of any such effort. The Rights will expire on February 27, 2013 unless earlier redeemed or exchanged. Each Right entitles the registered holder, subject to the terms of a Rights Agreement, to purchase from the Company one one-thousandth of a share of the Company’s Series A Junior Participating Preferred Stock at a purchase price of \$45.00 per one one-thousandth of a share, subject to adjustment. In general, the Rights will not be exercisable until a subsequent distribution date which will only occur if a person or group acquires beneficial ownership of 15% or more of our common stock or announces a tender or exchange offer that would result in such person or group owning 15% or more of the common stock. With respect to any person or group who currently beneficially owns 15% or more of our common stock, the Rights will not become exercisable unless and until such person or group acquires beneficial ownership of additional shares of common stock.

Subject to certain limited exceptions, if a person or group acquires beneficial ownership of 15% or more of our outstanding common stock or if a current 15% beneficial owner acquires additional shares of common stock, each holder of a Right (other than the 15% holder whose Rights become void once such holder reaches the 15% threshold) will thereafter have a right to purchase, upon payment of the purchase price of the Right, that number of shares of our common stock which at the time of such transaction will have a market value equal to two times the purchase price of the Right. In the event that, at any time after a person or group acquires 15% or more of our common stock, we are acquired in a merger or other business combination transaction or 50% or more of its consolidated assets or earning power are sold, each holder of a Right will thereafter have the right to purchase, upon payment of the purchase price of the Right, that number of shares of common stock of the acquiring company which at the time of such transaction will have a market value of two times the purchase price of the Right.

Our Board of Directors may exchange the Rights (other than Rights owned by such person or group which have become void), in whole or in part, at an exchange ratio of one share of common stock per Right (subject to adjustment). At any time prior to the time any person or group acquires 15% or more of our common stock, the Board of Directors may redeem the Rights in whole, but not in part, at a price of \$0.001 per Right.

Stock Options and Warrants

Our stockholders approved our amended 2005 Equity Incentive Plan (the “Plan”) pursuant to which an aggregate of 1,800,000 shares of our common stock were reserved for issuance upon exercise of stock options or other equity awards made under the Plan. Under the Plan, we may award stock options, shares of common stock, and other equity interests in the Company to employees, officers, directors, consultants, and advisors, and to any other persons the Board of Directors deems appropriate. As of December 31, 2011, options to acquire 1,508,500 shares were

outstanding under the Plan with 394,500 shares available for future grant under the Plan.

As of December 31, 2011, options to acquire 163,000 shares are outstanding under the 1999 Non-qualified Stock Option Plan. No additional options may be granted under the 1999 Non-qualified Stock Option Plan.

As of December 31, 2011, 1,569,800 of the 30-Month Common Stock Warrants were outstanding. On March 31, 2010, we issued warrants to an investor relations firm to purchase 50,000 shares of our common stock at an exercise price equal to \$3.00 per share, with a term expiring on August 11, 2012, in exchange for consulting services provided to us by such firm. On October 15, 2010, we issued warrants to another investor relations firm to purchase 21,000 shares of our common stock at an exercise price equal to \$2.38 per share, with a term expiring on October 14, 2013, in exchange for consulting services provided to us by such firm. On December 21, 2010, we issued warrants to an investment banker to purchase 100,000 shares of our common stock at an exercise price equal to \$3.00 per share, with a term expiring on December 21, 2015, as payment of a retainer for investment banking services provided to us by such firm.

The following tables summarize information concerning options and warrants outstanding and exercisable:

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | Stock Options | | Warrants | | Total Shares | Exercisable |
|---------------------------------|---------------|--|-------------|--|-----------------|-------------|
| | Shares | Weighted Average price per share | Shares | Weighted Average price per share | | |
| Balance outstanding, 12/31/2009 | 1,564,500 | \$2.52 | 3,806,640 | \$1.77 | 5,371,140 | 4,905,152 |
| Granted | 60,000 | 1.43 | 404,510 | \$2.88 | 464,510 | |
| Exercised | (18,897) | 1.07 | (1,529,800) | 1.25 | (1,548,697) | |
| Expired | - | - | - | - | - | |
| Forfeited | - | - | - | - | - | |
| Balance outstanding, 12/31/2010 | 1,605,603 | \$2.49 | 2,681,350 | \$2.24 | 4,286,953 | 4,114,792 |
| Granted | 180,000 | 1.00 | 2,094,151 | 1.44 | 2,274,151 | |
| Exercised | (41,103) | 1.07 | - | - | (41,103) | |
| Expired | (161,000) | 2.78 | - | - | (161,000) | |
| Forfeited | (75,000) | 2.57 | - | - | (75,000) | |
| Balance outstanding, 12/31/2011 | 1,508,500 | \$2.33 | 4,775,501 | \$1.35 | 6,284,001 | 6,112,335 |

| Range of Exercise Prices | Options Outstanding | | | Options Exercisable | | |
|--------------------------------|----------------------|---|-------------------|----------------------|---|-------------------|
| | Number of Options | Weighted Average Remaining Contractual Life | Exercise Price | Number of Options | Weighted Average Remaining Contractual Life | Exercise Price |
| \$0.55-\$2.70 | 743,000 | 7.3 | \$1.12 | 571,334 | 6.6 | \$1.14 |
| 2.71 -3.08 | 299,500 | 3.1 | 2.93 | 299,500 | 3.1 | 2.93 |
| 3.09 -3.95 | 302,000 | 4.4 | 3.67 | 302,000 | 4.4 | 3.67 |
| 3.96 -5.93 | 164,000 | 5.0 | 4.27 | 164,000 | 5.0 | 4.27 |
| \$0.55-\$5.93 | 1,508,500 | 5.6 | \$2.33 | 1,336,834 | 5.1 | \$2.50 |

Convertible Debt

During 2011, we received loans in the aggregate amount of \$412,000 from five individuals. The loans were made pursuant to Promissory Notes (the "Notes") with a term of six months, which may be extended with mutual consent of the parties. The interest rate under the Notes is 20% per annum. The Notes may be repaid, at the election of the respective lender (i) in cash, (ii) by conversion into that number of securities issued in the next financing completed by the Company having an aggregate purchase price equal to the then outstanding principal amount of the Note, together with any accrued and unpaid interest due at the time of conversion or (iii) conversion into shares of unregistered Common Stock of the Company at a conversion price of \$1.00 per share.

Each of the lenders received warrants to purchase Common Stock as follows:

In connection with a loan received on August 3, 2011, we issued warrants to the lender to purchase 26,315 shares of the Company's Common Stock, at an exercise price of \$0.76 per share, and warrants to purchase 211,765 shares of the Company's Common Stock, at an exercise price of \$0.85 per share, both sets of warrants expire on August 3, 2014.

In connection with a loan received on September 7, 2011 from Richard T. Schumacher, the Company's Chief Executive Officer, we issued warrants to Mr. Schumacher to purchase 12,048 shares of the Company's Common Stock, at an exercise price of \$0.83 per share, and warrants to purchase 105,882 shares of the Company's Common Stock, at an exercise price of \$0.85 per share, both sets of Warrants expire on September 7, 2014.

In connection with loans received on September 29, 2011, we also issued warrants to the lenders to purchase an aggregate 131,766 shares of the Common Stock, at an exercise price of \$0.85 per share, expiring on September 29, 2014.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

ASC 470-20 states that the proceeds from the issuance of debt with detachable stock warrants should be allocated between the debt and warrants on the basis of their relative fair market values. The relative fair value of the warrants was calculated to be \$155,035 and was recorded to debt discount against the total debt balance of \$412,000. The debt discount will be amortized to interest expense over the six-month term of these loans. We amortized \$109,000 of the debt discount to interest expense in 2011. The assumptions for the Black-Scholes pricing model are represented in the table below for the warrants issued with these loans reflected on a per share common stock equivalent basis.

| Assumptions | August 3, 2011 | August 3, 2011 | September 7, 2011 | September 7, 2011 | September 29, 2011 |
|---------------------------|----------------|----------------|-------------------|-------------------|--------------------|
| Expected life (in months) | 36.0 | 36.0 | 36.0 | 36.0 | 36.0 |
| Expected volatility | 97.5% | 97.5% | 97.5% | 97.5% | 97.5% |
| Risk-free interest rate | 2.000% | 2.000% | 2.000% | 2.000% | 2.000% |
| Exercise price | \$0.76 | \$0.85 | \$0.83 | \$0.85 | \$0.85 |
| Fair value per warrant | \$0.47 | \$0.52 | \$0.51 | \$0.52 | \$0.52 |

Amendment No. 1 to 30-Month Common Stock Warrants and Series B Warrants

The Company has calculated the fair value of the 30-Month Common Stock Warrants and Series B Preferred Stock Purchase Warrant amended on or about August 11, 2011, as described above within this footnote using the Black-Scholes model with the below assumptions.

| Assumptions | Series A | Series B Nov 09 tranche | Series B Mar 10 tranche |
|---------------------------|----------|-------------------------|-------------------------|
| Expected life (in months) | 12 | 12 | 12 |
| Expected volatility | 85.59% | 85.59% | 85.59% |
| Risk-free interest rate | 0.12% | 0.12% | 0.12% |
| Exercise price | \$2.00 | \$2.38 | \$2.88 |
| Fair value per warrant | \$0.01 | \$0.001 | \$0.004 |

The Company has determined that, in each case, the fair value of the amended warrants increased as compared to the fair value of the original warrants immediately prior to amendment as a result of the applicable modifications including a market discount to factor liquidity of our common stock. We calculated the protective put option value of 43% as the discount to be applied to the fair value of the amended warrants.

A total of 1,569,800 original 30-Month Common Stock Warrants with a maturity date of August 11, 2011 were amended to provide for a maturity date of August 12, 2012; and a total of 887,110 original Series B Warrants with a maturity date of August 11, 2011 were amended to provide for a maturity date of August 12, 2012.

As a result, the aggregate fair value of the 1,569,800 original 30-Month Common Stock Warrants with a maturity date of August 11, 2011, amended to provide for a maturity date of August 12, 2012, increased incrementally by \$18,285; and the aggregate fair value of the 887,110 original Series B Warrants with a maturity date of August 11, 2011, amended to provide for a maturity date of August 12, 2012, increased incrementally by \$5,874.

We recorded an incremental value of \$24,159 for these modifications.

Amendment No. 2 to 30-Month Common Stock Warrants and Series B Warrants

The Company has calculated the fair value of the 30-Month Common Stock Warrants and Series B Preferred Stock Purchase Warrant amended on or about September 30, 2011, as described above within this footnote, using the Black-Scholes model with the below assumptions.

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| Assumptions | Series A | Series A (Affiliates) | Series B Nov 09 tranche | Series B Mar 10 tranche |
|---------------------------|----------|-----------------------|-------------------------|-------------------------|
| Expected life (in months) | 48 | 36 | 48 | 48 |
| Expected volatility | 111.19% | 120.47% | 111.19% | 111.19% |
| Risk-free interest rate | 1.00% | 1.00% | 1.00% | 1.00% |
| Exercise price | \$0.90 | \$0.90 | \$1.43 | \$1.75 |
| Fair value per warrant | \$0.33 | \$0.31 | \$0.29 | \$0.28 |

The Company has determined that, in the case of the Series B Warrant Amendment, the fair value of the amended warrants increased as compared to the fair value of the original warrants immediately prior to amendment as a result of the applicable modifications including a market discount to factor liquidity of our common stock. We calculated the protective put option value of 43% as the discount to be applied to the fair value of the amended warrants.

A total of 1,513,180 original 30-Month Common Stock Warrants with a maturity date of August 12, 2012 were amended to provide for a maturity date of August 12, 2016 (August 12, 2015 for Affiliates) and a reduced price of \$0.90; and a total of 887,110 original Series B Warrants with a maturity date of August 12, 2012 were amended to provide for a maturity date of August 12, 2016 (August 12, 2015 for Affiliates) and a reduced exercise price of \$1.43 for Series B Warrants issued in November 2009, and \$1.75 for Series B Warrants issued in March 2010.

As a result, the aggregate fair value of the 1,513,180 original 30-Month Common Stock Warrants with a maturity date of August 12, 2012, amended to provide for a maturity date of August 12, 2016 (August 12, 2015 for Affiliates) and a reduced price of \$0.90, increased incrementally by \$442,399; and the aggregate fair value of the 887,110 original Series B Warrants with a maturity date of August 12, 2012, amended to provide for a maturity date of August 12, 2016 (August 12, 2015 for Affiliates) and a reduced exercise price of \$1.43 for Series B Warrants issued in November 2009, and \$1.75 for Series B Warrants issued in March 2010, increased incrementally by \$238,286.

We recorded an incremental value of \$680,685 for these modifications. These warrants were originally issued as part of an equity unit in connection with a private placement completed by the Company. Accordingly, the warrants were recorded in equity for the private placement. Any modification for these warrants should be accounted for as an adjustment to Paid-in Capital.

Adjustment of Amounts Previously Reported on Warrant Valuations

At December 31, 2011, we reviewed our accounting for the valuation of the modifications in the third quarter of 2011 made to the warrants issued in connection with the Series A and B Convertible Preferred Stock. We determined that the valuation methodology used should be adjusted. As a result of the change in methodology, the revised valuations differ from those previously reported in the unaudited financial statements included in our Quarterly report on Form 10-Q for the period ended September 30, 2011. There is no material effect on the audited financial statements for the year ended December 31, 2011.

The effect of this adjustment is an increase in a deemed dividend in determining Net loss to Common Shareholders for the period ending September 30, 2011. There is no material effect on reported Stockholders' Equity, Net Loss, or Cash Flows. The effect on amounts as previously reported is as follows:

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

| | September 30, 2011 | | |
|--|------------------------|--------------|----------|
| | As Previously Reported | As Adjusted | % Change |
| Balance Sheets (Stockholders' Equity) | | | |
| Warrants to acquire preferred stock and common stock | 1,823,852 | 2,203,101 | 21% |
| Additional paid-in capital | 12,802,217 | 12,802,217 | 0% |
| Accumulated deficit | (14,545,260) | (14,924,509) | 3% |
| Stockholders' equity | 145,388 | 145,388 | 0% |

| | For the Three Months Ended September 30, 2011 | | |
|--|--|-------------|----------|
| | As Previously Reported | As Adjusted | % Change |
| Statements of Operations | | | |
| Net loss | (\$561,723) | (\$561,723) | 0% |
| Net loss applicable to common shareholders | (953,846) | (1,333,095) | 40% |
| Net loss per share attributable to common shareholders | (0.15) | (0.21) | 42% |

| | For the Nine Months Ended September 30, 2011 | | |
|--|---|---------------|----------|
| | As Previously Reported | As Adjusted | % Change |
| Statements of Operations | | | |
| Net loss | (\$2,153,269) | (\$2,153,269) | 0% |
| Net loss applicable to common shareholders | (3,092,843) | (3,472,092) | 12% |
| Net loss per share attributable to common shareholders | (0.50) | (0.56) | 11% |

We have analyzed the impact of these adjustments and concluded that it is not material with respect to any financial reporting period after taking into consideration the requirements of the SEC Staff Bulletin No. 99. Further, these adjustments do not have an impact on amounts previously reported, operating trends or publicly-reported results such as would have a material effect on investor expectations.

Warrant Derivative Liability

The Series C Warrants issued in connection with the Series C Convertible Preferred Stock private placement and the Series D Warrants issued in connection with the registered direct offering of Series D Convertible Preferred are measured at fair value and liability-classified because the Series C Warrants are entitled to certain rights in subsequent financings and the Series D Warrants contain "down-round protection" and therefore, do not meet the scope exception for treatment as a derivative under ASC 815, *Derivatives and Hedging*, ("ASC 815"). Since "down-round protection" is not an input into the calculation of the fair value of the warrants, the warrants cannot be considered indexed to the Company's own stock which is a requirement for the scope exception as outlined under ASC 815. The estimated fair value of the warrants was determined using the binomial model, resulting in an allocation of the gross proceeds of

\$583,250 to the total warrants issued in the Series C private placement and \$283,725 to the warrants issued in the Series D registered direct offering. The fair value will be affected by changes in inputs to that model including our stock price, expected stock price volatility, the contractual term, and the risk-free interest rate. We will continue to classify the fair value of the warrants as a liability until the warrants are exercised, expire or are amended in a way that would no longer require these warrants to be classified as a liability, whichever comes first. The down-round protection for the Series C Warrants expires 12 months subsequent to the issuance of the Series C Units, and the down-round protection for the Series D Warrants survives for the life of the Series D Warrants which ends in May 2017.

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PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

The assumptions for the binomial pricing model are represented in the table below for the warrants issued in both tranches of the Series C private placement reflected on a per share common stock equivalent basis.

| Assumptions | Warrants revalued at December 31, 2011 | | | |
|---------------------------|--|---------------|---------------|---------------|
| | April 8, 2011 | June 20, 2011 | April 8, 2011 | June 20, 2011 |
| Expected life (in months) | 36.0 | 36.0 | 28.0 | 30.0 |
| Expected volatility | 118.5% | 118.5% | 88.2% | 89.7% |
| Risk-free interest rate | 0.625% | 0.625% | 0.25% | 0.25% |
| Exercise price | \$2.13 | \$2.13 | \$2.13 | \$2.13 |
| Fair value per warrant | \$0.70 | \$0.62 | \$0.12 | \$0.14 |

The assumptions for the warrants issued to the investment banker show the range of values for both tranches. The investment banker received two sets of warrants in each tranche with half of the warrants assigned a different exercise price.

| Assumptions | Investment Banker Warrants | | | |
|---------------------------|----------------------------|--------|---------------|--------|
| | April 8, 2011 | | June 20, 2011 | |
| Expected life (in months) | 60.0 | 60.0 | 60.0 | 60.0 |
| Expected volatility | 99.1% | 99.1% | 99.9% | 99.9% |
| Risk-free interest rate | 1.500% | 1.500% | 1.500% | 1.500% |
| Exercise price | \$1.50 | \$2.38 | \$1.50 | \$2.38 |
| Fair value per warrant | \$0.83 | \$0.75 | \$0.74 | \$0.67 |

The assumptions for the binomial pricing model are represented in the table below for the warrants issued in the Series D private placement reflected on a per share common stock equivalent basis.

| Assumptions | November 10, 2011 Warrants revalued at December 31, 2011 | |
|-------------------------|--|--------|
| | Expected life (in months) | 60.0 |
| Expected volatility | 104.5% | 106.2% |
| Risk-free interest rate | 0.875% | 0.875% |
| Exercise price | \$0.81 | \$0.81 |
| Fair value per warrant | \$0.54 | \$0.44 |

As of December 31, 2011, the value of the Series C and D Warrants has decreased to \$436,553.

(9) Subsequent Events

We performed a review of events subsequent to the balance sheet date through the date the financial statements were issued and determined, except as disclosed herein, that there were no other such events requiring recognition or disclosure in the financial statements.

On January 31, 2012, we issued 100,000 shares of Common Stock to an investor relations firm for payment of services to be rendered over twelve months.

On February 7, 2012, we entered into a Securities Purchase Agreement with seven accredited investors, pursuant to which the Company sold an aggregate of 971,867 shares of common stock, \$0.01 par value ("Shares"), resulting in gross proceeds to the Company of \$800,000. The price per unit was \$0.8025 for units consisting of 789,350 shares and 394,677 warrants, and was \$0.9125 for units consisting of the remaining 182,517 shares and 91,260 warrants. Of the \$800,000 invested in the private placement, \$412,453 was received in cash and \$387,547 was from the conversion of outstanding principal and interest on some of the convertible promissory notes issued by the Company in 2011.

PRESSURE BIOSCIENCES, INC. AND SUBSIDIARY NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Each unit consists of one share of restricted common stock and a warrant to purchase one-half share of common stock. The warrants are exercisable for a period of five years, commencing on August 7, 2012, at an exercise price of \$0.74 per share for the purchasers of the 789,350 shares, and \$0.85 per share for the purchasers of the 182,517 shares. In connection with the Securities Purchase Agreement, the Company paid its investment banker a fee of \$35,000 for providing advisory services.

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Report of Independent Registered Public Accounting Firm

To the Board of Directors of

Pressure BioSciences, Inc. and Subsidiary:

We have audited the consolidated balance sheets of Pressure BioSciences, Inc. and Subsidiary (the “Company”) as of December 31, 2011 and 2010, and the related consolidated statements of operations, changes in stockholders’ equity (deficit), and cash flows for the years then ended. These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. Our audits included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company’s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Pressure BioSciences, Inc. and Subsidiary as of December 31, 2011 and 2010, and the results of their operations and their cash flows for the year then ended in conformity with accounting principles generally accepted in the United States of America.

The accompanying financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the financial statements, the Company has had recurring net losses and continues to experience negative cash flows from operations. These conditions raise substantial doubt about its ability to continue as a going concern. Management’s plans regarding those matters also are described in Note 1. The financial statements do not include any adjustments that might result from the outcome of this uncertainty.

/s/ MARCUM LLP

Boston, Massachusetts

March 19, 2012

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_____ Shares of 5% Series E Convertible Preferred Stock
(and _____ Shares of Common Stock underlying the Series E Convertible Preferred Stock)
_____ Warrants
(and _____ Shares of Common Stock underlying the Warrants)

Prospectus

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PART II**INFORMATION NOT REQUIRED IN PROSPECTUS****Item 13. Other Expenses of Issuance and Distribution**

The following table sets forth the expenses (estimated except for the registration fee) expected to be incurred in connection with this offering.

| | | |
|------------------------------------|-----------|---|
| SEC Registration Fee | \$917 | |
| Legal Fees and Expenses | 200,000 | * |
| Accounting Fees and Expenses | 50,000 | * |
| Printing Expenses | 20,000 | * |
| Transfer Agent's Fees and Expenses | 10,000 | * |
| Miscellaneous | 19,083 | * |
| Total | \$300,000 | * |

* Estimated pursuant to Rule 511 of Regulation S-K.

Item 14. Indemnification of Directors and Officers

Section 8.52 of Chapter 156D of the Massachusetts General Laws provides that a corporation shall indemnify a director who was wholly successful, on the merits or otherwise, in the defense of any proceeding to which he or she was a party because he or she was a director of the corporation against reasonable expenses incurred by him in connection with the proceeding. Section 8.51 of Chapter 156D of the Massachusetts General Laws provides that a corporation may indemnify a director against liability if: (1)(i) he or she conducted himself or herself in good faith; and (ii) he or she reasonably believed that his or her conduct was in the best interests of the corporation or that his or her conduct was at least not opposed to the best interests of the corporation; and (iii) in the case of any criminal proceeding, he or she had no reasonable cause to believe his or her conduct was unlawful; or (2) he or she engaged in conduct for which he or she shall not be liable under a provision of the corporation's articles of organization authorized by Section 2.02(b)(4) of Chapter 156D of the Massachusetts General Laws.

Section 8.56 of Chapter 156D of the Massachusetts General Laws provides that a corporation may indemnify and advance expenses to an officer of the corporation who is a party to a proceeding because he or she is an officer of the

corporation: (1) to the same extent as a director; and (2) if he or she is an officer but not a director, to such further extent as may be provided by the articles of organization, the bylaws, a resolution of the board of directors, or contract except for liability arising out of acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law.

Section 8.56 of Chapter 156D of the Massachusetts General Laws also provides that an officer of a corporation who is not a director is entitled to mandatory indemnification under Section 8.52, and that the officer may apply to a court for indemnification or an advance for expenses, in each case to the same extent to which a director may be entitled to indemnification or advance under those provisions.

Section 8.57 of Chapter 156D of the Massachusetts General Laws also affords a Massachusetts corporation the power to obtain insurance on behalf of its directors and officers against liabilities incurred by them in these capacities.

Section 2.02(b)(4) of Chapter 156D of the Massachusetts General Laws provides that the articles of organization of a corporation may include a provision eliminating or limiting the personal liability of a director to the corporation for monetary damages for breach of fiduciary duty as a director notwithstanding any provision of law imposing such liability, provided, however, that such provision shall not eliminate or limit the liability of a director (a) for any breach of the director's duty of loyalty to the corporation or its shareholders, (b) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (c) for improper distributions to shareholders, or (d) for any transaction from which the director derived an improper personal benefit. We have included such a provision in our restated articles of organization, as amended.

Our restated articles of organization, as amended, provide that we may, either in our By-Laws or by contract, provide for the indemnification of our directors, officers, employees and agents, by whomever elected or appointed, to the fullest extent permitted by applicable law, as it may be amended from time to time.

Our amended and restated by-laws include provisions to permit the indemnification of officers and directors for damages arising out of the performance of their duties unless such damages arise out of the officer's or director's failure to exercise his or her duties and to discharge the duties of his or her office in good faith and in the reasonable belief that his action was in, or not opposed to, our best interest, and with respect to any criminal action or proceeding, had no reasonable cause to believe that his conduct was unlawful.

Directors' and Officers' Liability Insurance

We maintain directors' and officers' liability insurance policies, which insure against liabilities that our directors or officers may incur in such capacities. These insurance policies may be sufficiently broad to permit indemnification of our directors and officers for liabilities, including reimbursement of expenses incurred, arising under the Securities Act or otherwise.

Item 15. Recent Sales of Unregistered Securities

On February 12, 2009, we completed a private placement, pursuant to which we sold an aggregate of 156,980 units (the "Series A Units") for a purchase price of \$11.50 per unit, resulting in gross proceeds to us of \$1,805,270 (the "Series A Private Placement"). The Series A Units were issued and sold to a total of 35 accredited investors pursuant to a Securities Purchase Agreement entered into as of February 12, 2009 (the "Securities Purchase Agreement"). Each Series A Unit consisted of (i) one share of a newly created series of preferred stock, designated "Series A Convertible Preferred Stock," par value \$0.01 per share (the "Series A Convertible Preferred Stock") convertible into 10 shares of our common stock, (ii) a warrant to purchase, at the purchaser's election to be made within 7 days of the closing, either 10 shares of our common stock, at an exercise price equal to \$1.25 per share, with a term expiring 15 months after the date of closing ("15 Month Common Stock Warrant"), or one share of Series A Convertible Preferred Stock at an exercise price equal to \$12.50 per share, with a term expiring 15 months after the date of closing ("15 Month Preferred Stock Warrant") (all purchasers elected to receive the 15 Month Preferred Stock Warrant); and (iii) a warrant to purchase 10 shares of common stock at an exercise price equal to \$2.00 per share, with a term expiring 30 months after the date of closing (the "30 Month Common Stock Warrants").

On November 18, 2009, we sold an aggregate of 62,039 units (the "Series B Units") of Series B Convertible Preferred Stock, par value \$0.01 per share (the "Series B Convertible Preferred Stock") and warrants for a purchase price of \$18.80 per Series B Unit (the "Series B Purchase Price"), resulting in gross proceeds to us of \$1,166,333. This is the first tranche of a private placement (the "Series B Private Placement"). We closed on the second tranche of the Series B Private Placement on March 18, 2010 with the sale of an additional 26,672 Series B Units with gross proceeds of \$501,434. Each Series B Unit consisted of (i) one share of a newly created Series B Convertible Preferred Stock convertible into 10 shares of our common stock and (ii) a warrant to purchase one share of Series B Convertible Preferred Stock at an exercise price equal to \$23.80 per share for the warrants issued in November 2009 and at an

exercise price of \$28.80 for the warrants issued in March 2010, in each case with a term expiring on August 11, 2011 (“Series B Warrant”).

In connection with the Series B Private Placement, we paid a finder’s fee of \$100,478, plus warrants to purchase 5,344 shares of Series B Convertible Preferred Stock at \$28.80 per share, expiring August 11, 2012.

On March 31, 2010, we exercised our right to call the 15-Month Preferred Stock Warrants and, as a result, 15-Month Preferred Stock Warrants to purchase 98,372 shares of Series A Convertible Preferred Stock were exercised at \$12.50 per share, for gross proceeds to us of \$1,229,650, before deducting associated expenses. 15-Month Preferred Stock Warrants to purchase an additional 10,150 shares of Series A Convertible Preferred Stock were exercised on a cashless basis, resulting in the net issuance of 2,883 shares of Series A Convertible Preferred Stock. There are no 15-Month Preferred Stock Warrants currently outstanding.

On April 8 and April 11, 2011, we sold an aggregate 55,048 units (the “Series C Units”) of Series C Convertible Preferred Stock, par value \$0.01 per share (the “Series C Convertible Preferred Stock”) and warrants for a purchase price of \$15.00 per Series C Unit, resulting in gross proceeds to us of \$825,720. This was the first tranche of a private placement (the “Series C Private Placement”). We closed on the second tranche of the Series C Private Placement on June 21, 2011 with the sale of an additional 22,038 Series C Units for a purchase price of \$12.50 per Series C Unit, resulting in gross proceeds of \$275,475. Each Series C Unit consists of (i) one share of a newly created Series C Convertible Preferred Stock convertible into 10 shares of our common stock and (ii) a warrant to purchase ten shares of our common stock until the third anniversary of the date of issuance. In connection with the closing of the second tranche, we reduced the per unit purchase price for the Series C Units from \$15.00 to \$12.50 and as a result of this reduction, we issued an additional 11,011 Series C Units to the purchasers who participated in the first tranche.

In connection with the Series C Private Placement, we paid an investment banker a retainer fee of \$50,000, plus a warrant to purchase 1,000,000 shares of common stock at \$3.00 per share. In addition, in connection with the closing of the first tranche, we paid the investment banker a fee of (i) approximately \$66,000 cash, (ii) an expense allowance of approximately \$16,500, (iii) a warrant to purchase 44,038 shares of common stock exercisable at a purchase price of \$1.50, and (iv) a warrant to purchase 44,038 shares of common stock exercisable at a purchase price of \$2.38. In connection with the closing of the second tranche, we paid the investment banker a fee of (i) approximately \$22,000 in cash, (ii) an expense allowance of approximately \$5,500, (iii) a warrant to purchase 1,760 shares of common stock exercisable at a purchase price of \$1.50 and (iv) a warrant to purchase 1,760 shares of common stock at a purchase price of \$2.38.

The sale of the units in the Series A Private Placement, the Series B Private Placement and the Series C Private Placement, and the sale of warrants to the finder and the investment banker, were issued and sold without registration under the Securities Act, in reliance upon the exemption from registration set forth in Rule 506 of Regulation D (“Regulation D”) promulgated under the Securities Act. We based such reliance upon representations made by each purchaser of Series A Units, Series B Units, and Series C Units, and the finder and the investment banker, including, but not limited to, representations as to the purchaser’s status as an “accredited investor” (as defined in Rule 501(a) under Regulation D) and the purchaser’s investment intent. The Series A Units, the Series B Units and the Series C Units were not offered or sold by any form of general solicitation or general advertising (as such terms are used in Rule 502 under Regulation D). The Series A Units and the shares of Series A Convertible Preferred Stock, 15 Month Preferred Stock Warrants and 30 Month Common Stock Warrants comprising the Series A Units, and the Series B Units and the shares of Series B Convertible Preferred Stock and the Series B Warrants comprising the Series B Units and the Series C Units and the shares of Series C Convertible Preferred Stock and the Series C Warrants comprising the Series C Units may not be re-offered or sold in the United States absent an effective registration statement or an exemption from the registration requirements under applicable federal and state securities laws.

On August 3, 2011, we received a loan in the amount of \$200,000 from existing investor, Clayton A. Struve. The loan was made pursuant to a Promissory Note (the “Struve Note”) with a maturity date of November 3, 2011, which may be extended with mutual consent of the parties. The interest rate under the Struve Note is 20% per year. In connection with the loan, we also issued to Mr. Struve a warrant (the “Warrant”) to purchase 26,315 shares of our common stock at an exercise price of \$0.76 per share, expiring on August 3, 2014. The Struve Note and Warrant were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On September 7, 2011, we received a loan in the amount of \$100,000 from the Company's Chief Executive Officer, Richard T. Schumacher. The loan was made pursuant to a Promissory Note (the "Schumacher Note") with a maturity date of November 5, 2011, which may be extended with mutual consent of the parties. The interest rate under the Schumacher Note is 20% per year. In connection with the loan, we also issued to Mr. Schumacher a warrant (the "Schumacher Warrant") to purchase 12,048 shares of our common stock at an exercise price of \$0.83 per share, expiring on September 7, 2014. The Schumacher Note and Schumacher Warrant were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On September 29, 2011, the Board of Directors amended the existing loans from Clayton A. Struve and Richard T. Schumacher. The amendment also extended that maturity date of Mr. Struve's loan from November 3, 2011 to February 3, 2012 and the maturity date of Mr. Schumacher's loan from November 5, 2011 to March 7, 2012.

On September 2, 2011, we issued an aggregate of 124,996 shares of our common stock to our independent directors in payment for all, or a portion of, accrued board fees. The number of shares issued was based on \$0.84 per share, which was the greater of the consolidated closing bid or the closing price of our common stock, on September 1, 2011. The shares were issued without registration under the Securities Act, in reliance upon the exemption from registration set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On September 29, 2011, we received loans in the aggregate amount of \$112,000 from three investors, Kenneth J. Buckley Jr., Robert M. Nieder, and Michael Santilli (each a “Lender,” and collectively, the “Lenders”). The loans were made pursuant to Convertible Notes (the “Convertible Notes”) with a maturity date of March 29, 2012, which may be extended with mutual consent of the parties. The interest rate under the Convertible Notes is 20% per year. In connection with the loans, the Company also issued Warrants (the “Lender Warrants”) to the Lenders to purchase an aggregate 131,766 shares of our common stock, at an exercise price of \$0.85 per share, expiring on September 29, 2014. The Convertible Notes and Lender Warrants were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On September 29, 2011, we also issued (i) to Mr. Schumacher, a Warrant to purchase 105,882 shares of our common stock, at an exercise price of \$0.85 per share, expiring on September 7, 2014 and (ii) to Mr. Struve, a Warrant to purchase 238,080 shares of our common stock at an exercise price of \$0.85 per share, expiring on August 3, 2014 (collectively, the “Additional Warrants”). The exercise price of the Additional Warrants issued to Mr. Schumacher and Mr. Struve represents the greater of the closing price or consolidated closing bid price of our common stock, as reported by NASDAQ, on the day the Additional Warrants were issued. The Additional Warrants were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On October 28, 2011, we issued 32,941 shares of our common stock to holders of Series A Convertible Preferred Stock in payment of dividends accrued through September 30, 2011. The stock dividends were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

In October 2011, we issued warrants to purchase 47,955 shares of our Common Stock in exchange for the conversion of Series A Convertible Preferred Stock held by certain individuals who did not also hold warrants. These warrants have an exercise price of \$0.90 and a maturity date of August 12, 2016. The warrants were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On November 1, 2011, we issued 15,000 shares of our common stock to an investor relations firm for payment of services rendered over the past three months. The shares were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public

offering.

On January 31, 2012, we issued 100,000 shares of our common stock to an investor relations firm for payment of services to be rendered over twelve months. The shares were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

On February 7, 2012, we completed a private placement (the "February 2012 Private Placement") of units consisting of a total of 971,867 shares of restricted common stock and 485,937 warrants to purchase restricted common stock, resulting in net aggregate proceeds of approximately \$765,000, after deducting \$35,000 in offering costs. Seven accredited investors, including our President and Chief Executive Officer, our Chairman of the Board of Directors, and two investors from our November 2011 registered direct offering, participated in the private placement. The price per unit was \$0.8025 for units consisting of 789,350 shares and 394,677 warrants, and was \$0.9125 for units consisting of the remaining 182,517 shares and 91,260 warrants. Of the \$800,000 invested in the private placement, \$412,453 was received in cash and \$387,547 was from the conversion of outstanding principal and interest on convertible promissory notes we issued in 2011. The securities were issued in the February 2012 Private Placement without registration under the Securities Act, in reliance upon the exemption from registration set forth in Rule 506 of Regulation D ("Regulation D") promulgated under the Securities Act. We based our reliance, in part, upon representations made by each purchaser of shares, including, but not limited to, representations as to the purchaser's status as an "accredited investor" (as defined in Rule 501(a) under Regulation D) and the purchaser's investment intent. The securities were not offered or sold by any form of general solicitation or general advertising; as such terms are used in Rule 502 under Regulation D. The securities cannot be reoffered or resold in the United States absent an effective registration statement or an exemption from the registration requirements under applicable federal and state securities laws.

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On March 2, 2012, we issued 22,500 shares of our common stock to an investor relations firm for payment of services rendered over three months. The shares were issued without registration under the Securities Act, in reliance upon the exemption set forth in Section 4(2) of the Securities Act, for transactions not involving a public offering.

Item 16. Exhibits and Financial Statement Schedules

(a) See Exhibit Index.

(b) Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

**Exhibit
Index**

| <u>Exhibit No.</u> | | <u>Reference</u> |
|------------------------|--|--|
| 3.1 | Restated Articles of Organization of the Company | A-3.1** |
| 3.2 | Articles of Amendment to Restated Articles of Organization of the Company | B-3.1** |
| 3.3 | Articles of Amendment to Restated Articles of Organization of the Company, as amended | O-3.1** |
| 3.4 | | L-3.1** |
| | Articles of Amendment to Restated Articles of Organization of the Company, as amended | |
| 3.5 | | P-3.1** |
| | Articles of Amendment to Restated Articles of Organization of the Company, as amended | |
| 3.6 | Articles of Amendment to Restated Articles of Organization of the Company, as amended | U-3.1** |
| | Articles of Amendment to Restated Articles of Organization of the Company, as amended | |
| 3.7 | | † |
| | Amended and Restated By-Laws of the Company | |
| 3.8 | | A-3.2** |
| 3.9 | Amendment to Amended and Restated By-Laws of the Company | C-3.3** |
| 4.1 | Specimen Certificate for Shares of the Company's Common Stock | D-4.1** |
| 4.2 | Description of Capital Stock (contained in the Amended and Restated Articles of Organization, as amended, of the Company filed as Exhibits 3.1, 3.2, 3.3, 3.4, 3.5, 3.6 and 3.7) | A-3.1 & 3.2, B-31, O-31, L-31, P-31 and U.31** |
| 4.3 | | E-4** |

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| | | |
|------|---|----------|
| | Rights Agreement dated as of February 27, 2003 between the Company and Computershare Trust Company, Inc. | |
| 4.4 | Amendment No. 1 to Rights Agreement dated April 16, 2004 between the Company and Computershare Trust Company, Inc. | F-4** |
| 4.5 | Amendment No. 2 to Rights Agreement dated November 8, 2011 between the Company and Computershare Trust N.A. | U-4.2** |
| 4.6 | Securities Purchase Agreement dated November 21, 2007 between the Company and the purchasers named therein | G-4.9** |
| 4.7 | Registration Rights Agreement dated November 21, 2007 between the Company and the purchasers named therein | G-4.10** |
| 4.8 | Securities Purchase Agreement dated February 12, 2009 between the Company and the purchasers named therein | L-4.1** |
| 4.9 | Form of 15-Month Preferred Stock Warrant | L-4.3** |
| 4.10 | Form of 30-Month Common Stock Purchase Warrant | L-4.4** |
| 4.11 | Amendment No. 1 to 30-Month Common Stock Purchase Warrant | Q-4.2** |
| 4.12 | Amendment No. 2 to 30-Month Common Stock Purchase Warrant | S-4.1** |
| 4.13 | Registration Rights Agreement dated February 12, 2009 between the Company and the purchasers named therein | L-4.5** |
| 4.14 | Securities Purchase Agreement dated November 18, 2009 between the company and the purchasers named therein | O-4.1** |
| 4.15 | Registration Rights Agreement dated November 18, 2009 between the Company and the purchasers named therein | O-4.3** |
| 4.16 | Series B Preferred Stock Warrant | O-4.2** |

| Exhibit No. | | Reference |
|----------------|---|-----------|
| 4.17 | | Q-4.1** |
| 4.18 | | S-4.2** |
| 4.19 | Amendment No. 1 to Series B Convertible Preferred Stock Purchase Warrant | P-4.1** |
| | Amendment No. 2 to Series B Convertible Preferred Stock Purchase Warrant | |
| 4.20 | Securities Purchase Agreement dated April 8, 2011 between the Company and the Purchasers Named Therein | P-4.3** |
| 4.21 | Registration Rights Agreement dated April 8, 2011 between the Company and the Purchasers Named Therein | R-4.1** |
| | Amendment No. 1 to Securities Purchase Agreement dated June 21, 2011, amending Securities Purchase Agreement dated April 8, 2011 between the Company and the Purchasers Named Therein | |
| 4.22 | Form of Common Stock Purchase Warrant | P-4.2** |
| 4.23 | Form of Warrant Issued to Lenders | T-4.1** |
| 4.24 | Form of Promissory Note Issued to Lenders | T-4.2** |
| 4.25 | Form of Common Stock Purchase Warrant | U-4.1** |
| 4.26 | Form of Warrant | V-4.1** |
| 4.27 | Form of Class A Warrant | † |
| 4.28 | Form of Class B Warrant | † |
| 4.29 | Form of Series E Stock Certificate | † |
| 4.30 | Amendment No 3 to Rights Agreement between the Company and Computershare Trust N.A. | † |
| | Legal Opinion of Pepper Hamilton LLP | |
| 5.1 | 1999 Non-Qualified Stock Option Plan* | † |
| 10.1 | | H** |
| 10.2 | 1999 Employee Stock Purchase Plan* | H** |
| 10.3 | 2005 Equity Incentive Plan.* | I-99.1** |
| 10.4 | Amendment No. 1 to 2005 Equity Incentive Plan* | M-10.1** |
| 10.5 | Description of Compensation for Certain Directors* | N-10.7** |

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| | | |
|-------|---|----------------|
| 10.6 | Severance Agreement between the registrant and Richard T. Schumacher* | N-10.6** |
| 10.7 | Form of Severance Agreement including list of officers to whom provided* | N-10.7** |
| 10.8 | Consent Agreement, dated May 29, 2007, by and among the registrant, PBI Source Scientific, Inc., Source Scientific, LLC, BIT Analytical Instruments, Inc., Richard W. Henson and Bruce A. Sargeant. | J-10.1** |
| 10.9 | Asset Purchase Agreement dated April 16, 2004 between the Company, BBI Biotech Research Laboratories, Inc. and SeraCare Life Sciences, Inc. | F-1** |
| 10.10 | Technology Transfer and Patent Assignment Agreement dated October 7, 1996, between Bioseq, Inc. and BioMolecular Assays, Inc. | N-10.11** |
| 10.11 | Amendment to Technology Transfer and Patent Assignment Agreement dated October 8, 1998 between Bioseq, Inc. and BioMolecular Assays, Inc. | N-10.12** |
| 10.12 | Nonexclusive License Agreement dated September 30, 1998 between Bioseq, Inc. and BioMolecular Assays, Inc. | N-10.13** |
| 10.13 | Agreement for Research Services dated February 1, 2006 by and between the registrant and the University of New Hampshire | K-10.1** |
| 10.14 | Placement Agency Agreement between the Placement agent and the Company, dated November 8, 2011 | U-10.1** |
| 10.15 | Form of Securities Purchase Agreement | U-10.2** |
| 10.16 | Form of Escrow Agreement, as amended | U-10.3** |
| 10.17 | Form of Securities Purchase Agreement | V-3.1** |
| 10.18 | Placement Agency Agreement, by and between Pressure BioSciences, Inc. and Ladenburg Thalmann & Co. Inc. | † |
| 10.19 | Form of Series E Securities Purchase Agreement | † |
| 23.1 | Consent of Independent Registered Public Accounting Firm (Marcum LLP) | Filed herewith |
| 23.2 | Consent of Pepper Hamilton LLP (included in Exhibit 5.1) | † |
| 24.1 | Power of Attorney (included on the signature page of this registration statement) | Filed herewith |
| 101 | Interactive Data File | Filed herewith |

*Management contract or compensatory plan or arrangement.

**Previously filed as follows.

†To be filed by amendment.

- A We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Registration Statement on Form S-1 (Registration No. 333-10759) filed with the Commission on August 23, 1996.
- B We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2004.
- C We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Annual Report on Form 10-K for the fiscal year ended December 31, 2002.
- D We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Annual Report on Form 10-KSB for the fiscal year ended December 31, 2004.
- E We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission March 12, 2003.
- F We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission April 16, 2004.
- G We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Registration Statement on Form S-3 (Registration No. 333-148227) filed with the Commission on December 20, 2007.
- H We previously filed this exhibit as an appendix to the registrant's proxy statement filed June 14, 1999.
- I We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Registration Statement on Form S-8 (Reg. No. 333-128594) filed with the Commission on September 26, 2005.
- J We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on June 1, 2007.
- K We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on February 7, 2006.
- L We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on February 18, 2009.
- M We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on September 29, 2008.
- N We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Annual Report on Form 10-K filed with the Commission on March 27, 2008.
- O We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on November 19, 2009.
- P We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on April 12, 2011.
- Q We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on August 11, 2011.
- R We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on June 21, 2011.
- S We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on October 6, 2011.
- T We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Quarterly Report on Form 10-Q for the fiscal quarter ended September 30, 2011.
- U We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on November 10, 2011.
- V

We previously filed this exhibit with the referenced exhibit number as an exhibit to the registrant's Current Report on Form 8-K filed with the Commission on February 9, 2012.

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Item 17. Undertakings

The undersigned registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:

i. To include any prospectus required by section 10(a)(3) of the Securities Act of 1933;

ii. To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement.

iii. To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) Each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration

statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such first use, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities: The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

i. Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

ii. Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

iii. The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and

iv. Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

(6) For purposes of determining any liability under the Securities Act of 1933, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(7) For the purpose of determining any liability under the Securities Act of 1933, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

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SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of South Easton, State of Massachusetts, on March 19, 2012.

Pressure Biosciences, Inc.

March 19, 2012 By: /s/ Richard T. Schumacher
 Date Richard T. Schumacher
 President and Chief Executive Officer

SIGNATURES AND POWERS OF ATTORNEY

Each person whose signature appears below hereby constitutes and appoints Richard T. Schumacher as such person's true and lawful attorneys-in-fact and agent, with the full power of substitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments to this Registration Statement (including post-effective amendments), and to sign any registration statement for the same offering covered by this Registration Statement that is to be effective upon filing pursuant to Rule 462(b) promulgated under the Securities Act, and all post-effective amendments thereto, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agent, or their, his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

| Name | Capacity | Date |
|---|---|----------------|
| <u>/s/ Richard T. Schumacher</u> Richard T. Schumacher | President and Chief Executive Officer (Principal Executive Officer and Principal Financial Officer) | March 19, 2012 |
| <u>/s/ Joseph L. Damasio, Jr.</u> Joseph L. Damasio, Jr. | Vice President of Finance and Administration (Principal Accounting Officer) | March 19, 2012 |
| <u>/s/ R. Wayne Fritzsche</u> | Director and Chairman of the Board | |

| | | |
|---|----------|-------------------|
| R. Wayne Fritzsche | | March 19, 2012 |
| <u>/s/ J. Donald Payne</u> J. Donald Payne | Director | March 19, 2012 |
| <u>/s/ Calvin A. Saravis,</u> <u>Ph.D.</u> Calvin A. Saravis, Ph.D. | Director | March 19, 2012 |
| <u>/s/ Alan D. Rosenson</u> Alan D. Rosenson | Director | March 19, 2012 |
| <u>/s/ Alan I. Goldberg</u> Alan I. Goldberg | Director | March 19, 2012 |
| <u>/s/ Gregory G. Freitag</u> Gregory G. Freitag | Director | March 19, 2012 |
| <u>/s/ Jeffrey N. Peterson</u> Jeffrey N. Peterson | Director | March 19, 2012 |

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Exhibit Index

| <u>Exhibit No.</u> | <u>Description</u> |
|--------------------|--|
| 3.7* | Articles of Amendment to Restated Articles of Organization of the Company, as amended |
| 4.27* | Form of Class A Warrant |
| 4.28* | Form of Class B Warrant |
| 4.29* | Form of Series E Stock Certificate |
| 4.30* | Amendment No. 3 to Rights Agreement between the Company and Computershare Trust N.A. |
| 5.1* | Legal Opinion of Pepper Hamilton LLP |
| 10.18* | Form of Series E Securities Purchase Agreement |
| 10.19* | Placement Agency Agreement, by and between Pressure BioSciences, Inc. and Ladenburg, Thalmann & Co. Inc. |
| 23.1 | Consent of Independent Registered Public Accounting Firm (Marcum LLP) |

23.2* Consent of Pepper Hamilton LLP (included
in Exhibit 5.1)

24.1 Power of Attorney (included on the signature
page of this registration statement)

101 Interactive Data File

* To be filed by amendment.

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