



**Quarterly Update: June 16, 2014**

**Company Description**

Pressure BioSciences, Inc. (“Pressure BioSciences” or “the Company”) develops and commercializes proprietary laboratory instruments and consumable products. Its product portfolio is based on its patented pressure cycling technology (PCT) platform, which is able to apply and release high levels of hydrostatic pressure in a safe and controlled manner. While this technology has applications across many industries, Pressure BioSciences is initially using PCT to develop products that improve sample preparation—the process of preparing a sample for analysis. In life science research, sample preparation is integral to tens of thousands of laboratories worldwide. Pressure BioSciences’ line of Barocycler® products enables scientists to harness the power of PCT in the lab. Biological samples (e.g., cells and tissues from humans, animals, plants) placed in a Barocycler are exposed to programmable cycles of low-to-intense pressure—up to 100,000 pounds per square inch (psi). This act of “cycling” pressure can accelerate and control physical and chemical processes, including the breakup of cellular structures and release of biomarkers from a sample for testing and analysis. Pressure BioSciences’ portfolio also includes Shredder instruments (for rapidly shredding or grinding samples), sample preparation kits and reagents, and related consumable products (e.g., tubes to hold the samples during the PCT process).

**Key Points**

- For the first quarter ended March 31, 2014, Pressure BioSciences reported revenue growth over the previous quarter and the year-ago quarter. The Company reported total revenues of over \$404,000 for Q1 2014, which was driven by products and services sales rather than grant revenue.
- From the first quarter 2013 to the first quarter 2014, Pressure BioSciences reported an 82% increase in its products and services revenue (which includes a 101% increase in sales of its consumables products), but only an 8% increase in operating expenses.
- In March 2014, the Company reached a major milestone with the release of an ultra-high-pressure Barocycler product, the HUB880. This instrument is capable of safe operation up to 100,000 psi, which Pressure BioSciences does not believe is possible with any other bench-top pressure (cycling or constant) products at present. At 100,000 psi, the HUB880 reaches pressures sufficient to kill most pathogenic and food-borne bacteria, and could enable safe investigation of a number of new biological, chemical, material, and industrial sciences applications.
- In addition, the Company is releasing a new PCT platform at the annual meeting of the American Society for Mass Spectrometry in mid-June 2014, which is anticipated to drive further sales and distribution partnerships, as well as a new consumable product for processing small tissue samples.
- At March 31, 2014, Pressure BioSciences held approximately \$428,537 in cash and cash equivalents, following the raise of approximately \$1.8 million during January and February 2014.



**Pressure BioSciences, Inc.**  
 14 Norfolk Avenue  
 South Easton, MA 02375  
 Phone: (508) 230-1828  
 Fax: (508) 230-1829  
[www.pressurebiosciences.com](http://www.pressurebiosciences.com)

Ticker (Exchange)	PBIO (OTC)
Recent Price (06/16/2014)	\$0.40
52-week Range	\$0.16 - \$0.78
Shares Outstanding	~13.6 million
Market Capitalization	~\$5.5 million
Average 3-month Volume	54,609
Insider Ownership +>5%*	13.77%
Institutional Ownership*	4.61%
EPS (Qtr. ended 03/31/14)	(\$0.25)
Employees	12

**PBIO One-Year Stock Chart**



\* Source: S&P Capital IQ, 6/16/2014

## Recent Financial Results

### First Quarter 2014 Financial Results

Pressure BioSciences reported financial results for the first quarter 2014 on May 15, 2014.

The Company reported total revenue for the first quarter 2014 of \$404,147 versus \$370,737 for the year-ago term. Year-over-year revenue growth was approximately 9%, which was due to significant increases in sales of products and services. During the first three months of the year (the period ended March 31, 2014), the Company reported that its products and services revenue had grown by over 82%, and its consumables revenue was up 101% from the same quarter of 2013. These increases were offset by a decrease in grant revenue due to the completion of work under two federal government grants during 2013. Altogether, for the first quarter 2014, products and services revenue was \$404,147 (versus \$221,569 in the year-ago quarter), including consumables revenue of \$54,612 (versus \$27,224 a year ago). Grant revenue during the quarter was \$0 (versus \$149,168 a year ago).

Pressure BioSciences reported operating cost results as highlighted below.

- *Cost of Products, Services and Grants* increased to \$177,606 in the first quarter 2014 versus \$104,544 for the same quarter of 2013. Adjusting for the impact of the high-margin grant revenue in 2013, the Company's gross margin stayed roughly the same at 56% in the current quarter and 58% (adjusted) in the first quarter 2013.
- *Research and development* expenditures decreased to \$231,088 in the first quarter 2014 from \$246,458 in the year-ago period.
- *Selling and marketing* expenses decreased to \$171,340 in the first quarter 2014 from \$193,900 previously due to reduced headcount, partially offset by higher tradeshow and travel expenses.
- *General and administrative costs* increased to \$606,479 in the first quarter 2014 versus \$550,859 in the year-ago period, primarily due to increased investor relations expenses.

As a result of the above expenses, Pressure BioSciences' operating loss for the first quarter 2014 was \$782,366 versus \$725,024 in the first quarter 2013, an increase of 8%.

The Company reported a net loss for the quarter of \$3,084,708, or (\$0.25) per share, versus a net loss of \$1,394,090, or (\$0.11) per share, in the same period a year ago. This increase was largely attributable to a change in the fair value of derivative instruments in the Company's first quarter 2014, and a deemed dividend on its convertible preferred stock.

At March 31, 2014, Pressure BioSciences held approximately \$428,537 in cash and cash equivalents, up from \$167,910 as of March 31, 2013.

#### *Private Placement*

In December 2013, Pressure BioSciences raised \$1 million under a private placement of its Series K convertible preferred stock. A second tranche closed in January 2014, in which the Company raised over \$1.2 million, followed by a third tranche of \$630,360 in February 2014. Altogether, Pressure BioSciences raised over \$2.8 million in this offering, which was roughly \$2 million in cash and approximately \$800,000 from the conversion of outstanding indebtedness and Board of Director fees.

Subsequently, the Company's Board of Directors has voted to extend the private placement, with the current closing scheduled for June 30, 2014, for a total subscription amount of \$4.5 million.

### **Past Financial Results (Fourth Quarter 2013)**

On April 1, 2014, Pressure BioSciences announced financial results for the three-month period and fiscal year ended December 31, 2013.

Results included the achievement of quarterly and yearly revenue increases, compared to the same periods of 2012, while also achieving a decrease in operating expenses. With these results, the Company reported an increase in total revenue year-over-year for all four quarters of 2013.

Total revenue for the three months ended December 31, 2013, was \$354,052, a 64% increase versus \$216,032 for the corresponding period in 2012. Revenue from the sale of products and services was \$300,628, a 146% increase versus the same period in 2012, while grant revenue was \$53,424 versus \$93,747 for the same period in the prior year.

Operating loss for the fourth quarter of 2013 decreased to \$0.9 million from over \$1.1 million for the same period in 2012, a reduction of 20%. Contributing to this decrease was a 30% quarter-over-quarter decrease in general and administrative expenses of \$268,105. Loss per common share (basic and diluted) was \$0.16 for the 2013 fourth quarter versus a loss per share of \$0.10 for the same period in 2012, due primarily to the change in the fair value of the derivative instruments in the last quarter of 2013.

Total revenue for the 2013 fiscal year ended December 31, 2013, was \$1.5 million, a 21% increase over revenue of \$1.2 million for the fiscal year 2012. For fiscal year 2013, revenue from the sale of products and services was over \$1.0 million (a 29% increase over 2012) and grant revenue was \$456,610 compared to \$428,909 for fiscal year 2012. Operating loss for fiscal year 2013 decreased to \$3.3 million from \$3.5 million for 2012, a reduction of 4%. Loss per common share (basic and diluted) was \$0.44 for 2013 compared to a loss per share of \$0.43 in 2012.

## Company Background

Pressure BioSciences, Inc. (“Pressure BioSciences” or “the Company”) is focused on the research, development, and commercialization of proprietary laboratory instruments and consumable products based on its patented pressure cycling technology (PCT) platform. PCT is an enabling technology that is able to create, apply, and release high levels of hydrostatic pressure—currently up to 100,000 pounds per square inch (psi)—quickly and in a safe and controlled manner. As a frame of reference, in the deepest part of the Mariana Trench, which is approximately 35,800 feet under the ocean’s surface and the deepest point on Earth, the pressure is roughly 17,920 psi or nearly nine tons per square inch—roughly the weight of an elephant balanced on a postage stamp. Not only has Pressure BioSciences developed a means to harness high pressure in a compact instrument that fits comfortably on a laboratory workbench, but the Company has also incorporated and patented its unique ability to rapidly cycle pressure on and off.

Pressure is force applied to a surface area. It is a fundamental variable in thermodynamics, and can be used to manipulate matter between amorphous and various crystalline solids, liquid, gas, and plasma physical states, without requiring changes in temperature. Easy access to pressure cycling capabilities can provide a powerful and important tool for many areas of scientific research and materials processing.

PCT is expected to significantly benefit research and routine processing applications across many industries, including the life sciences, diagnostics, pharmaceutical, biotechnology, forensics, food, anti-bioterror, agriculture, automotive, and oil and gas industries, among many others. Extensive demonstrations and data collected internally and by third-party researchers have confirmed the potential of PCT across many of these areas. While Pressure BioSciences could ultimately develop products specially designed for each market, management has evaluated its core competencies and intellectual property strengths and thus selected sample preparation—a critically important process that dramatically affects outcomes in life sciences research and patient diagnostics—as its initial target market. The Company has 24 issued and 6 pending patents worldwide protecting the application of PCT in sample preparation and other areas.

### **First Application for Pressure Cycling Technology (PCT): the Sample Preparation Market**

Pressure BioSciences is initially using PCT to develop products that improve “sample preparation,” or the process of preparing a biological sample (such as cells and tissues from human, animal, plant, and microbial sources) for analysis. Sample preparation is a crucial laboratory step for most areas of life sciences research and commercial diagnostics applications. Sample preparation is required prior to virtually all scientific analyses, and can be pivotal for protecting such scientific analyses from the ancient conundrum of “garbage in yields garbage out.” Sample preparation processes vary but, within the life sciences, often include breaking up the cellular structures of a sample (“cell lysis”) as well as separating or extracting out various cell components and biomolecules or biomarkers, including proteins, lipids, small molecules, and nucleic acids (DNA/RNA). Accurate analysis of these extracted biomolecules is crucial to the development of new diagnostics and therapeutics.

There are a number of tools and techniques currently used in sample preparation, including bead beaters, sonicators, homogenizers, mortar and pestle grinders, French Press, freezer mills, enzymatic digestion, and chemical dissolution. While sample preparation is intended to facilitate and improve accurate scientific analysis, conventional methods for performing sample preparation are often complex, time consuming, and error-prone. The University of Florida has identified human error as a major liability in sample preparation. Additionally, it is estimated that laboratory professionals spend as much as 80% of their time preparing samples for analysis (Source: *Lab Manager Magazine*, July 13, 2011). Important cell components can be lost, degraded, damaged, or otherwise affected during the process of breaking up and separating the components of the cell. While scientists can use cutting-edge devices to analyze what remains in the prepared sample, cell components lost or damaged during the sample preparation process will not be found in the final analysis of the sample, hindering the scientists’ ability to obtain relevant and useful results. For this reason, sample preparation is widely considered to be the main bottleneck in life science research.

### *PCT Is Designed to Substantially Improve Sample Preparation*

Pressure BioSciences believes that its PCT methods offer several important advantages over current sample preparation products and processes. First, researchers at the U.S. Food and Drug Administration (FDA), the Harvard School of Public Health, the Armed Forces Institute of Pathology, the Johns Hopkins School of Medicine, and other institutions have shown that using the PCT platform in their sample preparation workflows resulted in significant advantages, including major reductions in the total time for analysis and improved reliability and reproducibility of testing and quality of results. Next, when used as part of the sample preparation process, PCT was shown to improve the quality and quantity of DNA, RNA, proteins, lipids, and small molecules recovered from a sample versus many available preparation techniques. Third, and perhaps most important of all, PCT has proven to dramatically increase the range of unique versions (often never previously seen) of biomolecules that were liberated and presented for analysis.

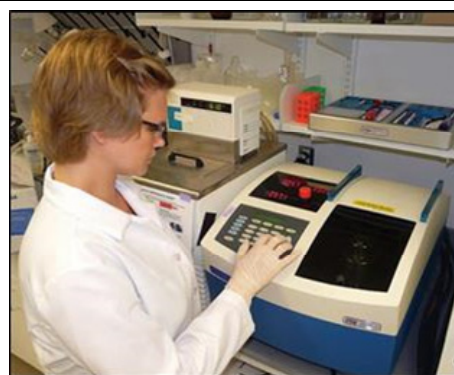
PCT helps to make sample preparation reproducible and enables standardization. Conventional bead beaters use small beads to aggressively disrupt the cells and their components in a sample, and mortar and pestle tools require extensive and laborious grinding of samples into smaller pieces. In contrast, PCT uses cycles of hydrostatic pressure to gently, rapidly, and reproducibly liberate and preserve the widest range of DNA, RNA, small molecules, and proteins from almost any biological fluid, cells, or tissue sample. Unlike the application of temperature as a process variable, the application of pressure is homogeneously experienced instantly and equally throughout the sample being treated. Repeated cycles of PCT help to ensure the effective liberation of released biomolecules from within the structural matrix of the sample, in a fashion somewhat analogous to the repeated squeezing of a wet sponge.

It is important to note that PCT is not designed to replace mainstream laboratory analysis instruments used to analyze biological samples; rather, it is designed to enhance the sample preparation process for use in tandem with downstream analyzers to recover greater quantities, higher quality, and previously unavailable biomolecules from the sample.

### **Pressure BioSciences' Product Portfolio**

The Company's first commercial application of PCT for sample preparation is the Barocycler® family of bench-top laboratory instruments. Biological samples placed in the pressure chamber of a Barocycler are exposed to programmable cycles of low-to-intense pressure. This act of "cycling" pressure quickly breaks up the cellular structures of a sample for downstream testing and analysis. An example of a Barocycler is shown in Figure 1. The Company's first two Barocycler models—NEP2320 and NEP3229—produce up to 35,000 psi and vary in sample capacity, size, and weight. The 65-pound NEP2320 model lists for around \$30,000 and provides a sample chamber suitable for processing from 1 to 12 samples, while the larger NEP3229 model weighs roughly 350 pounds and lists for approximately \$45,000 but has the capacity to simultaneously process up to three times the number of samples as the smaller NEP2320.

Figure 1  
BAROCYCLER®



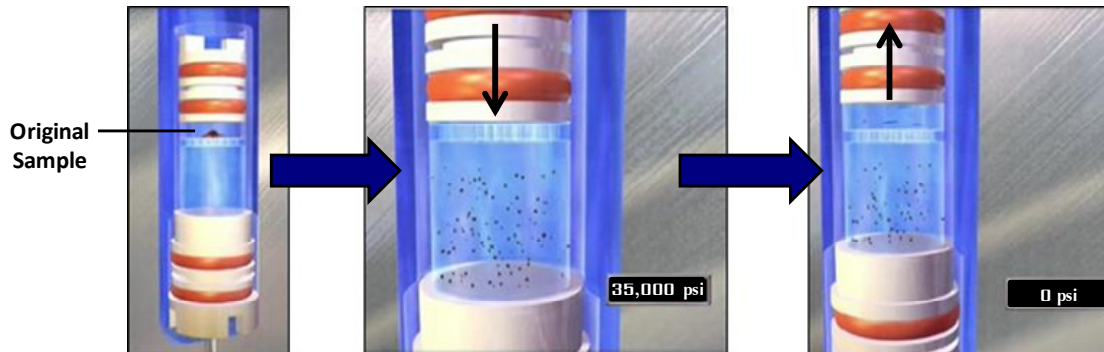
Source: Pressure BioSciences, Inc.

To prepare a biological sample using a Barocycler, the user first places the sample in a consumable processing sample tube that is specially designed to withstand high levels of pressure, and fills the remainder of the tube with solutions called "processing buffers." The user then inserts the sample tube into the chamber of the Barocycler and specifies the desired maximum level of pressure and number of cycles to subject the sample to (or can program more finely-grained pressure cycle profiles, if desired), before starting the machine.

Figure 2 (page 6) shows a rendering of the PCT process, with a maximum set pressure of 35,000 psi (NEP3229). As shown in the center of Figure 2, the increase in pressure forces the sample to pass through a disc with small holes (called a "lysis disc"), breaking the sample into smaller pieces that disperse throughout the processing buffers. As the pressure cycles back to ambient psi (about 14.5 psi), fragments of the sample are pulled back through the lysis disc. This process repeats for the number of cycles designated by the user.

Figure 2

HOW PRESSURE CYCLING TECHNOLOGY WORKS



Source: Pressure BioSciences, Inc.

*Next-Generation PCT System Offers Increased Versatility and Higher Margins*

Pressure BioSciences' next-generation PCT platform is the HUB family of Barocyclers. HUB models are designed to serve as a hub for a laboratory's high-pressure needs, with users purchasing accessories as needed to expand the functionality of their HUB unit. Unlike the Barocycler models, which have a set chamber size that can fit a specified number of samples in each test run, HUB models offer flexibility that enables the laboratory's pressure cycling capabilities to grow and adapt with the laboratory's needs. Additionally, the HUB concept allows Pressure BioSciences to focus on the development of accessories that target additional and new markets.

In the coming years, the Company expects the HUB platform to become the central workhorse in its PCT-based instrument line. Initial commercialization prior to 2014 of HUB units entailed installation in approximately 10 collaborator facilities. The first model under this product line is the HUB440, which weighs 55 pounds and provides up to 58,000 psi, and lists for roughly \$30,000. In March 2014, the Company released the second instrument in this product line, the Barocycler HUB880, which lists for roughly \$65,000, and is described below.

Newest Product Launch: the Barocycler HUB880 (March 2014)

The HUB system is named after Dr. Wayne L. Hubbell, a distinguished professor of chemistry and biochemistry and the Jules Stein professor of ophthalmology at UCLA. Dr. Hubbell approached the Company in 2010 with a request for a device that would allow him to look at proteins in an EPR instrument under pressure, in order to study the structure of proteins as they change under pressure. This ability helps improve researchers' understanding of the structure and function of proteins, potentially improving the discovery process and providing new insights into such important areas as biomarker discovery and rational drug design. Dr. Hubbell helped sponsor the development of this technology and has worked closely with Pressure BioSciences throughout the development of its HUB instruments.

Under the guidance and funding of Dr. Hubbell, Pressure BioSciences has recently introduced a HUB880 model that can reach 100,000 psi. To the Company's knowledge, the HUB880 system is the first device to provide 100,000 psi pressure cycling in a convenient, table-top laboratory format. As a result, it could be applicable to an array of scientists whose work requires high-level control of cells and biomolecules, and who have no other method at present of achieving ultra-high pressure levels via a commercially available bench-top instrument.

The Barocycler HUB880 (shown in Figure 3 [page 7]) has an operating range of 1,000 psi to 100,000 psi, which for reference, is approximately 7,000 times greater than normal atmospheric pressure. The HUB880 can reach pressures sufficient to kill most pathogenic and food-borne bacteria, and could enable safe investigation of a number of innovative but yet-to-be-tried biological, chemical, material, and industrial sciences applications.

Figure 3  
BAROCYCLER HUB880



Fields-of-Use (Selected Examples)	Features and Benefits (Selected Examples)
Food Science	Ideal for high-pressure research
Microbiology	A USB-powered computer interface
Agriculture	Expandable with optional hardware and software
Structural Biology	Compact and light
Material and Chemical Sciences	Can interface with other instrumentation
Industrial	Safe and easy-to-use

Source: Pressure BioSciences, Inc.

#### Consumables and Other Products for Sample Preparation

In addition to the Barocycler instruments, the Company markets a line of Shredder instruments for rapidly shredding or grinding bulky or particularly tough samples down to manageable sizes for further processing. The Shredder line is detailed on pages 29-31 of the Core Story of the base Executive Informational Overview® (EIO). The EIO was published on November 4, 2013, and is available from [www.crystalra.com](http://www.crystalra.com).

With a keen eye on the perennial “razor and razor blades” business model, Pressure BioSciences also sells many single-use, consumable products, including PULSE Tubes and MicroTubes to hold each sample being processed, as well as a variety of prepackaged sample preparation kits and reagents that provide additional specialized capabilities tailored to particular sample processing challenges. All of the consumables are designed to be used in conjunction with the Barocycler and Shredder products. The Company anticipates that these consumable products could eventually grow to become the leading revenue-generating item and profit center in its PCT products mix. These consumable products are described on pages 31-33 of the Core Story of the EIO.

#### Enabling Platform Technology with Broad Applications

Pressure BioSciences is initially developing PCT to improve sample preparation. The sample preparation market is among the fastest-growing segments of the life sciences industry. It was estimated at \$5.4 billion in 2013, with potential to more than double to \$11.5 billion in 2018 (Source: BCC Research, *Sample Preparation in Genomics, Proteomics, and Epigenomics: Global Markets*, September 2013). The Company estimates that 500,000 scientists in 80,000 laboratories globally perform sample preparation procedures. The use of PCT to prepare samples could contribute to the development of better therapeutics, diagnostics, and vaccines, as well as enable more accurate research into diseases and disorders, including leading causes of death like heart disease and cancer, and major chronic diseases like obesity, diabetes, and Alzheimer’s disease.

Within the expansive sample preparation market, the Company is developing PCT for two key areas: (1) biomarker discovery, a key part of vaccine, diagnostic, and therapeutic R&D (detailed on pages 36-41 of the EIO); and (2) forensics, which may improve processing of DNA evidence and lead to higher arrest/conviction rates (pages 41-48 of the EIO). The ability for PCT to extract unique biomolecules that have potential to be important biomarkers has been studied by respected institutions and scientists, such as the FDA and the Harvard School of Public Health. Pressure BioSciences has partnered with several leading forensic institutions, including the Henry C. Lee Institute of Forensic Science, Florida International University's International Forensic Research Institute (IFRI), and the University of North Texas Health Science Center's Institute of Applied Genetics, to accelerate the development of its technology for this market.

Some additional potential markets for PCT include pathogen inactivation, anti-bioterror applications, protein purification, control of chemical reactions (particularly enzymatic reactions), immunodiagnosics, food safety, vaccine development, and DNA sequencing, including next-generation and whole genome sequencing.

### Key Market Leaders Have Recognized the Benefits of PCT

PCT systems have been used by approximately 150 customer sites and collaborators across a range of industries. Pressure BioSciences' strategic collaboration program allows researchers and their laboratory teams to lease a Barocycler under favorable financial terms for up to three months in exchange for collecting and sharing data on their diverse variety of applications for the PCT system. These lease relationships, together with the outright sales of the instruments, have led to over 100 publications in peer-reviewed journals as well as presentations at major industry events. The Company anticipates that this investment in strategic sales and collaborations will increase visibility, the number of PCT applications, and marketplace adoption of its PCT technology and products, as commercialization is accelerated.

As shown in Figure 4, Pressure BioSciences' customers have included the FDA, the National Institutes of Health (NIH), U.S. Centers for Disease Control and Prevention (CDC), Federal Bureau of Investigation (FBI), and U.S. Department of Agriculture (USDA). Academic customers have included Harvard Medical School, Stanford University, and the University of California at Los Angeles (UCLA). As well, the Company has diagnostic, biotechnology, and pharmaceutical customers, including Amgen, Inc. (AMGN-NASDAQ), Biogen Idec Inc. (BIIB-NASDAQ), Bristol-Myers Squibb Co. (BMY-NYSE), Eli Lilly & Co. (LLY-NYSE), and Merck & Co., Inc. (MRK-NYSE). Many of these entities have performed and published important demonstrations and studies that were crucially enabled by PCT systems.

Figure 4

#### A SELECTION OF KEY CUSTOMERS

• Amgen, Inc.	• U.S. Centers for Disease Control and Prevention	• University of California, Los Angeles
• Biogen Idec Inc.	• U.S. Army Medical Research Institute of Infectious Diseases	• University of California, San Diego
• Eli Lilly & Co.	• Dana-Farber Cancer Institute	• University of California, Davis
• Novartis AG	• Sanford-Burnham Medical Research Institute	• Lawrence Livermore National Laboratory
• Monsanto Company	• Thermo Fisher Scientific Inc.	• Stanford University
• Bristol-Myers Squibb Co.	• Target Discovery, Inc.	• University of North Texas
• Merck & Co., Inc.	• U.S. Department of Agriculture	• Mississippi State University
• Centocor Biotech, Inc. (now Janssen Biotech, Inc.)	• Battelle Memorial Institute	• Montana State University
• Takeda Pharmaceutical Company Ltd.	• Harvard Medical School	• Lawrence Berkeley National Laboratory
• Momenta Pharmaceuticals Inc.	• Harvard School of Public Health	• University of Kentucky
• U.S. Army	• Rockefeller University	• Florida International University
• U.S. Federal Bureau of Investigation	• University of New Hampshire	• University of Massachusetts Boston
• U.S. Food and Drug Administration	• Barnett Institute (Northeastern University)	
• U.S. National Institutes of Health		
• Armed Forces Institute of Pathology		

Source: Pressure BioSciences, Inc.



## Continued Innovation Using PCT: Product Pipeline

Pressure BioSciences strives to continually innovate and improve upon its existing technologies. An estimated \$40 million has been invested in developing the PCT platform, including approximately \$2 million in grant funding through the U.S. government's Small Business Innovation Research (SBIR) program as well as an \$850,000 contract from the U.S. Department of Defense (DOD) to develop a PCT-based system that provides for the simultaneous inactivation and processing of pathogenic organisms (specifically viruses and bacteria). To Pressure BioSciences' knowledge, PCT is the only technology shown to completely kill anthrax while still leaving the sample in a testable state.

Additional products in development include a high-throughput PCT system (for a second quarter 2014 market launch) and specialized systems for protein extraction and digestion, as summarized below and detailed on pages 49-53 of the EIO. The Company also plans to release a novel, PCT-based consumable product for processing small tissue samples in the second quarter 2014.

- *The Barozyme HT48.* This instrument is designed to be a high-throughput PCT system capable of processing up to 48 (eventually up to 384) samples simultaneously in the industry-standard format for integration with existing lab automation platforms. In contrast, the existing Barocycler products provide capacity for one or up to a maximum run of 48 samples in a manual-handling format. In mid-2013, the Company announced that it achieved proof-of-principle for this initiative, which it identified as a major technical breakthrough and significant growth opportunity for its technology. While the current processing capabilities of its existing products have limited sales to small laboratories and individual scientists, an automation-ready, high-throughput system fulfills the needs of larger research and clinical diagnostics laboratories and companies. Pressure BioSciences believes that this instrument has the potential to fuel growth and increase revenues for existing and new PCT-based applications and products, as well as to facilitate new strategic partnerships. The Company expects beta units to be built and tested, and market-ready units to be available for demonstration, in late second quarter 2014, and for sale as early as the end of the third quarter 2014.
- *The Barocycler FFPE Protein Extraction Instrument System.* Researchers use various techniques to preserve cancer and other tissues for subsequent pathology evaluation. The most commonly used method is formalin-fixation followed by paraffin-embedding ("FFPE"). FFPE tissues are the most widely available specimens for retrospective clinical studies of disease mechanisms. It is estimated that hundreds of millions of FFPE specimens have been archived globally (Source: Frost and Sullivan, June 21, 2012). Pressure BioSciences is developing a modified Barocycler system to improve the extraction of proteins from FFPE samples using a combination of pressure cycling, high temperatures, and certain reagents.
- *XstreamPCT™ HPLC Digestion Module.* Pressure BioSciences is developing a PCT-based sample preparation method for high-performance liquid chromatography (HPLC) platforms. The Company's goal is to develop instruments that can be directly integrated with HPLC and mass spectrometry for the complete processing of proteins, from sample preparation to final result. The first product under this platform, the XstreamPCT™ is designed for automated, in-line, on-demand PCT-enhanced protein digestion.

## Corporate Information

Pressure BioSciences is a spin-off of Boston Biomedica Inc., which was founded in 1978. Richard T. Schumacher founded Boston Biomedica during his tenure as a researcher at the Center for Blood Research (CBR), a laboratory affiliated with Harvard Medical School. He left CBR in 1985 and built Boston Biomedica into a global quality control company for infectious disease testing. In 1996, the company went public on NASDAQ and grew to over 300 employees and thousands of customer laboratories across 60 countries. In September 2004, this entity completed the sale of its core business units and began to focus exclusively on development of the PCT platform. Following this change in strategy, the Company's legal name was changed to Pressure BioSciences, Inc., which is now traded on the OTCQB tier of the OTC Marketplace under the ticker symbol "PBI0." The Company leases corporate offices in South Easton, Massachusetts. In addition to serving as Pressure BioSciences' corporate headquarters, these facilities support the manufacture and assembly of the Barocycler HUB440, the Shredder SG3, and MicroTubes. Pressure BioSciences also leases laboratory and office space at the University of Massachusetts in Boston, where it performs R&D activities. At present, the Company employs nine full-time and three part-time individuals.

## Key Points to Consider

- Pressure BioSciences, Inc. is focused on the development and commercialization of proprietary laboratory instruments and consumable products.
- The Company's product portfolio is based on its patented pressure cycling technology (PCT), which is able to create and release high levels of hydrostatic pressure in a safe and controlled manner. Pressure BioSciences has 24 issued and 6 pending patents globally that protect various aspects and applications of PCT.
- The PCT platform is a highly versatile and adaptable technology that can be used across many different industries, including the life sciences, pharmaceutical, biotechnology, forensics, food, anti-bioterror, agriculture, automotive, and oil and gas industries, among others. While Pressure BioSciences believes that its products have potential in each of these markets, the Company is currently focusing its product development efforts on biological sample preparation for life sciences research.
  - The sample preparation market for life sciences research is forecast to more than double to \$11.5 billion by 2018, driven by new technologies and growing demand.
- Pressure BioSciences' line of bench-top Barocycler® laboratory instruments employ high pressure to prepare samples for downstream analysis and testing. These PCT-based systems have been shown to extract higher quality and/or quantities of proteins, nucleic acids (DNA/RNA), and small molecules from samples versus competitive products, which could have positive implications in biomarker discovery, forensics, and many other areas of life science research.
  - The Company's customers include large pharmaceutical and biotechnology companies (e.g., Bristol-Myers, Amgen, and Merck), U.S. government agencies (FBI, FDA, NIH, USDA), and universities (Harvard, Stanford, and UCLA). Pressure BioSciences reports that it has installed roughly 250 PCT systems at approximately 150 customer sites as of May 2014.
  - Pressure BioSciences' next-generation PCT platform is the HUB family of Barocyclers. The goal of the HUB is to create a modular system that can grow and adapt to a laboratory's needs, with users purchasing accessories as needed to expand the functionality of their HUB unit. The newest HUB product, the HUB880 capable of reaching 100,000 psi in a safe and controlled manner, was launched in March 2014.
- Pressure BioSciences has gained exposure to corporate, government, and university laboratories through its strategic collaboration program, which allows third-party researchers to temporarily install a Barocycler instrument in their laboratory in exchange for a reasonable financial commitment and the collection of independent, third-party data on a certain subject.
  - Data collected through this program has helped validate existing applications for PCT and establish potential in new applications. As well, much of this research has resulted in peer-reviewed publications and presentations at scientific meetings. To date, over 100 papers have been published on PCT.
  - The program also exposes the technology to potential customers as well as specific research scientists who the Company believes could have a positive impact on market acceptance of PCT.
- Pressure BioSciences' portfolio also includes Shredder instruments (for rapidly shredding or grinding samples), sample preparation kits and reagents, and related consumable products (e.g., sample tubes).
- Pressure BioSciences has multiple novel products in its R&D pipeline, including a high-throughput PCT system scheduled for commercial release during the second quarter 2014 which is designed to meet the needs of larger research and clinical diagnostics laboratories and companies.
- At March 31, 2014, Pressure BioSciences held \$428,537 in cash and cash equivalents.

## Risks and Disclosures

This Quarterly Update has been prepared by Pressure BioSciences, Inc. (“Pressure BioSciences” or “the Company”) with the assistance of Crystal Research Associates, LLC (“CRA”) based upon information provided by the Company. CRA has not independently verified such information. Some of the information in this Update relates to future events or future business and financial performance. Such statements constitute forward-looking information within the meaning of the Private Securities Litigation Act of 1995. Such statements can only be predictions and the actual events or results may differ from those discussed due to the risks described in Pressure BioSciences’ statements on Forms 10-K, 10-Q, and 8-K, as well as other forms filed from time to time.

The content of this report with respect to Pressure BioSciences has been compiled primarily from information available to the public released by the Company through news releases, Annual Reports, and U.S. Securities and Exchange Commission (SEC) filings. Pressure BioSciences is solely responsible for the accuracy of this information. Information as to other companies has been prepared from publicly available information and has not been independently verified by Pressure BioSciences or CRA. Certain summaries of activities and outcomes have been condensed to aid the reader in gaining a general understanding. CRA assumes no responsibility to update the information contained in this report. In addition, CRA has been compensated by the Company in cash of thirty-nine thousand, five hundred U.S. dollars and one hundred thousand warrants for its services in creating the base Executive Informational Overview® (EIO) and for Updates. For more complete information about the risks involved in an investment in the Company, please see Pressure BioSciences’ most recently filed Annual Report on Form 10-K for the year ended December 31, 2013.

Investors should carefully consider risks and information about Pressure BioSciences’ business. Investors should not interpret the order in which considerations are presented in the Company’s filings as an indication of their relative importance. The risks and uncertainties overviewed in Pressure BioSciences’ Form 10-K and in Crystal Research Associates’ base EIO are not the only risks that the Company faces. Additional risks and uncertainties not presently known to Pressure BioSciences or that it currently believes to be immaterial may also adversely affect its business. If any of such risks and uncertainties develops into an actual event, Pressure BioSciences’ business, financial condition, and results of operations could be materially adversely affected, and the trading price of the Company’s shares could decline.

This report is published solely for information purposes and is not to be construed as an offer to sell or the solicitation of an offer to buy any security in any state. Past performance does not guarantee future performance. Additional information about Pressure BioSciences and its public filings, as well as copies of this report, can be obtained by calling (508) 230-1828.



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**QUARTERLY UPDATE: June 16, 2014**

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Crystal Research Associates is led by Wall Street veterans, Jeffrey Kraws and Karen Goldfarb. Together, Kraws and Goldfarb have built a unique business model, capitalizing on decades of experience as an award-winning sell-side analyst team to produce institutional-quality industry and market research in a manner that is easily understood by investors and consumers. Our firm's approach has been proven successful over the years as our products are published and available on Bloomberg, Thomson Reuters/First Call, Capital IQ, FactSet, Yahoo! Finance, and scores of other popular forums.

**Corporate Headquarters:**

880 Third Avenue, 6th Floor  
New York, NY 10022  
Office: (212) 851-6685  
Fax: (609) 395-9339

**Satellite Office Location:**

2500 Quantum Lakes Drive, Ste. 203  
Boynton Beach, FL 33426  
Office: (561) 853-2234  
Fax: (561) 853-2246