

# Pressure BioSciences Accelerates Development of Novel Ultra Shear Technology Platform to Pursue Commercialization into Major New Markets

Company's Commitment Includes Significant Buildout of Manufacturing Space, Accelerated Instrument & ApplicationsDevelopment, Staff Additions, New IP Development, and Expanded Partnership Negotiations

**SOUTH EASTON, MA / ACCESSWIRE / October 3, 2018** / Pressure BioSciences, Inc. (OTCQB: PBIO) ("PBI" or the "Company"), a leader in the development and sale of broadly enabling, pressure-based instruments, consumables, and platform technology solutions to the worldwide life sciences industry, today announced it will commit significant additional financial and operational support to accelerate the development of its Ultra Shear Technology ("UST") platform, effective immediately.

UST utilizes ultra-high pressure to create intense, momentary liquid shearing forces at controlled temperatures that result in a novel and continuous flow process for affordable and scalable homogenization of liquids, creams and gels. The UST platform creates nano-scale emulsion mixtures of otherwise immiscible fluids (like oils in water) that result in room-temperature stable homogenized products called nanoemulsions (suspensions of microscopic oil droplets in water). Nanoemulsions have been shown to exhibit improved sensory experience, protect food's visual and nutritional qualities, and require lower amounts of added chemicals for preservation. For many oil-based nutritional and therapeutic products, nanoemulsions can offer superior water solubility and increased bio-availability for improved absorption via oral or topical administration. Furthermore, many medical (e.g., pharmaceuticals), industrial (e.g., inks) and retail (e.g., cosmetics) products should benefit from their preparation and delivery as high-quality nanoemulsions.

Dr. Edmund Ting, Sr. Vice President of Engineering for PBI, explained: "Nanoemulsions have been shown to exhibit improved absorption, higher bioavailability, and greater stability, while often requiring lower levels of stabilizing chemicals (emulsifiers) than macroemulsion products. Because of these significant advantages, nanoemulsions are currently the focus of numerous research efforts worldwide. Cost-effective scale-up of nanoemulsion processing at a commercial level has been historically challenging, but we believe that PBI's innovative process design patents provide the key to commercial success for nanoemulsion products."

Dr. Nate Lawrence, Vice President of Marketing and Sales at PBI, said: "We believe there are significant opportunities for room-temperature stable, economically-scalable nanoemulsion products worldwide, such as large scale premium dairy products and other high-volume food products like salad dressings. These opportunities become particularly

exciting in high value products like lubricants, cosmetics and nutraceuticals. We believe that PBI's vast experience and expertise in harnessing the power of high pressure for the biotechnology and pharmaceutical areas, coupled with our new and growing Ultra Shear Technology patent estate, has positioned us to be uniquely qualified to lead in this important new area."

Mr. Richard T. Schumacher, President and CEO of PBI, commented: "We have committed approximately 2,000 sq. ft. of recently acquired space to our Ultra Shear Technology platform development and nanoemulsions commercialization program. We view this as an extraordinary opportunity that offers a range of major new market segments for PBI. We have instructed our Engineering and R&D personnel to finalize the development of our first-generation UST instrument and to make the generation of proof-of-principle nanoemulsion data for multiple product areas their top priority. We have also reallocated significant time and resources from several staff members to the UST platform development program."

Mr. Schumacher concluded: "Finally, we are rapidly accelerating discussions with multiple U.S., Canadian, and other companies, academic organizations, and government agencies that have expressed a strong desire to collaborate with PBI and acquire access to our proprietary UST process. We are on course to establish collaborative development projects with multiple companies and research groups addressing different product and market opportunities. These programs should lead to revenue-generating products in the near future. We believe there are many industries that can benefit from UST-produced nanoemulsions and that this can be an area of rapid and sizeable growth for PBI moving forward."

## About Pressure BioSciences, Inc.

Pressure BioSciences, Inc. (OTCQB: PBIO) is a leader in the development and sale of innovative, broadly enabling, pressure-based solutions for the worldwide life sciences industry. Our products are based on the unique properties of both constant (i.e., static) and alternating (i.e., pressure cycling technology, or "PCT") hydrostatic pressure. PCT is a patented enabling technology platform that uses alternating cycles of hydrostatic pressure between ambient and ultra-high levels to safely and reproducibly control bio-molecular interactions (e.g., cell lysis, biomolecule extraction). Our primary focus is in the development of high pressure-based products for biomarker and target discovery, drug design and development, biotherapeutics characterization and quality control, food science, soil & plant biology, forensics, and counter-bioterror applications. Additionally, PBIO is actively expanding the use of our pressure-based technologies in the following areas: (1) the use of our recently acquired PreEMT technology from BaroFold, Inc. to allow entry into the biologics manufacturing and contract research services sector, and (2) the use of our recently-patented, scalable, high-efficiency, pressure-based Ultra Shear Technology ("UST") platform to (i) create stable nanoemulsions of otherwise immiscible fluids (e.g., oils and water) and to (ii) prepare higher quality, homogenized, extended shelf-life or room temperature stable low-acid liquid foods that cannot be effectively preserved using existing non-thermal technologies.

### **Forward Looking Statements**

This press release contains forward-looking statements. These statements relate to future events or our future financial performance and involve known and unknown risks,

uncertainties and other factors that may cause our or our industry's actual results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed, implied or inferred by these forwardlooking statements. In some cases, you can identify forward-looking statements by terminology such as "may," "will," "should," "could," "would," "expects," "plans," "intends," "anticipates," "believes," estimates," "predicts," "projects," "potential" or "continue" or the negative of such terms and other comparable terminology. These statements are only predictions based on our current expectations and projections about future events. You should not place undue reliance on these statements. In evaluating these statements, you should specifically consider various factors. Actual events or results may differ materially. These and other factors may cause our actual results to differ materially from any forwardlooking statement. These risks, uncertainties, and other factors include, but are not limited to, the risks and uncertainties discussed under the heading "Risk Factors" in the Company's Annual Report on Form 10-K for the year ended December 31, 2017, and other reports filed by the Company from time to time with the SEC. The Company undertakes no obligation to update any of the information included in this release, except as otherwise required by law.

For more information about PBI and this press release, please click on the following website link:

# http://www.pressurebiosciences.com

Please visit us on Facebook, LinkedIn, and Twitter.

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