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# **Pressure BioSciences and The Ohio State University Announce Food Industry Consortium to Advance Commercialization of PBI's Ultra Shear Technology**

## **Academia-Industry Partnership to Support Improvements in UST Applications and Allow Global Food Companies Access to UST for Preparation of Safer, More Nutritious Liquid Foods and Beverages**

SOUTH EASTON, Mass., Feb. 24, 2021 /PRNewswire/ --Pressure BioSciences, Inc. (OTCQB: P BIO) ("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 biotechnology, biotherapeutics, nutraceuticals, cosmetics, agriculture, and food & beverage industries, today announced it has entered into a wide-ranging agreement with the College of Food, Agricultural, and Environmental Sciences ("CFAES") at The Ohio State University ("Ohio State"). Under the Agreement, bench-top and floor model test systems of PBI's patented Ultra Shear Technology™ ("UST™") platform for the high shear processing of liquids under controlled temperature and pressure conditions will be set up in the acclaimed Ohio State food pilot plant. To help introduce the potential of the UST platform for strategic innovation to global food companies, PBI and Ohio State have announced the formation of a food industry consortium (the "Consortium"), whose members will have access to the UST test systems in the pilot plant, as well as licensing rights to the UST platform. The Consortium is the result of research initially sponsored by the USDA NIFA for which Ohio State and PBI gratefully acknowledge their support.

The primary goals of the Consortium are to develop and improve new commercial applications of UST; help develop the scientific support needed to address possible regulatory issues; and to experience first-hand UST product development and pre-commercialization efforts. The Consortium will be open to food companies worldwide. Consortium members will help direct the scientific efforts of Ohio State and PBI across a universe of prospective liquid food & beverage projects. Topics of interest will include spore inactivation and other pathogen and spoilage factor control; enhanced taste, smell, and other sensory qualities; and the formation of highly stable products suitable for ambient temperature storage and distribution.

Research studies suggest that under ultra shear conditions, unique microbiological, textural, sensory, and other benefits are possible. These benefits can lead to safer, higher quality, and more nutritious consumer-friendly "clean-label" (free of unwanted chemical additives) liquid foods and beverages. Consortium members receive a first right to non-exclusively license all new applications for commercial utilization in their own products. PBI has the right to license all new IP to non-members of the consortium worldwide.

Dr. Edmund Y. Ting, Senior VP of Engineering at PBI, and a pioneer in the development of high pressure-based, non-thermal methods to make food and beverages safer, commented: "Over the past two decades, high pressure processing ("HPP") has emerged as a highly successful, clean-label approach for food safety and improved product shelf-life. The HPP market was estimated to have reached \$15.5 billion in 2019 and is expected to record substantial growth in 2020–2025 ([HPP Market Size](#)). Products such as juice, guacamole, and deli meats are routinely processed today using HPP. However, HPP does have limitations and drawbacks, particularly the inability to produce high quality, high stability homogeneous liquid products via the combination of fluid shear, brief shear induced heating, and continuous output compatible with modern aseptic packaging."

Dr. Ting continued: "Our UST platform uniquely combines the benefits of HPP with extreme liquid shearing forces and controlled temperature to accomplish results such as inactivation of food-borne bacteria and modifications leading to improved stability, texture, taste, and nutrition. The ability to modify structure through physical stress will create many new opportunities in the commercialization of liquid foods and beverages, as well as in nutraceuticals and pharmaceuticals."

Professor V.M. ("Bala") Balasubramaniam, Professor of Food Engineering at Ohio State, said: "We expect the Consortium supported studies conducted by the Ohio State and PBI teams will demonstrate that the UST platform can be used to achieve significant improvements in the processing of healthier, safer, less costly, and more pleasing beverages, sauces, condiments, and other liquid foods. We also expect such studies will support the ability of UST processing to significantly extend the stability of liquid foods and beverages at room temperature. In addition to a more satisfied consumer, these efficiencies will deliver important cost savings to suppliers in more efficient product distribution costs without cold chain requirements. In addition, such research efforts will help the student education and future workforce training on various advanced food technologies including ultra-shear technology."

Known internationally for his research on high-pressure and other types of nonthermal processing, or safely processing food using significantly less heat, Dr. Bala leads a multidisciplinary team of microbiologists, chemists, and nutritionists, investigating innovative food technologies and partnering with industry to implement them commercially. He holds joint appointments in the CFAES departments of [Food Science and Technology](#), and in [Food, Agricultural and Biological Engineering](#). Other distinguished members of the CFAES research team include Ahmed Yousef, Professor of Food Microbiology; Rafael Jimenez-Flores, the J.T. "Stubby" Parker Endowed Chair in Dairy Foods; and Christopher Simons, Associate Professor of Sensory Science.

Mr. Richard T. Schumacher, President and CEO of PBI, explained: "This new Consortium will welcome a global group of preeminent leading food & beverage companies as members. Each will contribute annually towards the Consortium's operations, with funds supporting research and development at both PBI and Ohio State, while participating as an advisory council to nominate, prioritize and direct UST applications development amongst the myriad opportunities that invite our attention. As new and commercially relevant UST applications are demonstrated and members utilize their first rights to license them for their own use, Ohio State and PBI will both benefit from resulting royalty streams. PBI will also benefit from instrument leases and consumables sales. In addition, PBI will drive the

exploitation of these new application innovations amongst non-Consortium companies worldwide."

### **About Pressure BioSciences, Inc.**

Pressure BioSciences, Inc. (OTCQB: P BIO) is a leader in the development and sale of innovative, broadly enabling, pressure-based solutions for the worldwide life sciences and other industries. 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 control bio-molecular interactions safely and reproducibly (e.g., cell lysis, biomolecule extraction). Our primary focus is in the development of PCT-based products for biomarker and target discovery, drug design and development, biotherapeutics characterization and quality control, soil & plant biology, forensics, and counter-bioterror applications. Additionally, major new market opportunities have emerged in the use of our pressure-based technologies in the following areas: (1) the use of our recently acquired, patented technology from BaroFold, Inc. (the "BaroFold" technology) to allow entry into the bio-pharma contract 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 forward-looking 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 forward-looking 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, 2019, 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:

For more information about PBI and this press release, please click on the following website link: <http://www.pressurebiosciences.com>

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