



# **PBI** Pressure BioSciences, Inc.

(OTCQB: PBIO)

*Discovery Starts with Sample  
Preparation™*

Richard T. Schumacher  
President, CEO, and Founder

***Investor Presentation  
January 2018***



# FORWARD LOOKING STATEMENTS

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This presentation may contain forward looking statements that reflect management's current views and opinions as to the status of the Company's products, technology and other future events and operations. These statements are neither a promise nor guarantee, but involve risks and uncertainties that could cause actual results to differ materially from those anticipated or indicated. Investors are cautioned that any forward looking statements should be considered in light of such risks and uncertainties including, without limitation, those detailed in the Company's filings with the Securities and Exchange Commission.



- Research Products and Services
  - 100% of Revenue to Date
  - Pressure Cycling Technology (PCT)-based instruments and consumables
  - 300 PCT Systems installed, 175+ customers, 100+ publications, \$2M in 2016 revenue
  - Recent release of award winning, next-generation instrument (Barocycler 2320EXT)
  - Worldwide co-marketing agreement with global analytical instrument leader SCIEX
  - Expanded sales force (one to four); now trained and in the field...will affect 2018 revenue
- Biopharmaceutical Manufacturing Processes
  - Born from December 13, 2017 announced acquisition of all assets of Barofold, Inc.
  - PreEMT technology employs high pressure for disaggregation & controlled refolding of recombinant proteins into their native structures for desired pharmacological activity
- Ultra Shear Technology (“UST”)
  - Two issued & multiple pending patents - combines high hydrostatic pressure & intense shear forces
  - Production of high quality, stable nanoemulsions with minimal or no need for surfactants: pharmaceuticals, nutraceuticals, cosmetics, food, oils and lubricants, etc.

## Management

- **Mr. Richard T. Schumacher, President & CEO**  
Boston Biomedica (CEO, Founder); Panacos Pharma (President, Co-founder);  
Trinity Biotech (Founding Group); CBR Labs (Gen'l Mgr) - Harvard Medical School
- **Mr. Joseph L. Damasio, Jr., CPA, VP of Finance and CFO**  
CP Bourg, IQE KC, Kopin, PBI, KPMG Consulting, PWC; Boston College (MBA, MFS)
- **Dr. Edmund Y. Ting, Senior VP of Engineering**  
Avure Technologies (CTO); Flow Int'l (VP R&D); Grumman Aerospace; MIT (Ph.D.)
- **Dr. Alexander V. Lazarev, VP of R&D**  
Proteome Systems; Genomic Solutions; ESA; University of Kazan (Ph.D.)
- **Dr. Nathan P. Lawrence, VP of Sales & Marketing, Heads of Manufacturing**  
Boston Biomedica; BD; Gene-Trak Systems; Yale University (Ph.D.)

## Board

- |                               |                                 |
|-------------------------------|---------------------------------|
| • <b>Jeffrey Peterson, MS</b> | <b>Board Chairman</b>           |
| • Kevin Pollack, Esq., MBA    | Audit Committee Chairman        |
| • Vito Mangiardi, MBA         | Compensation Committee Chairman |
| • Mickey Urdea, Ph.D.         | SAB Chairman                    |
| • Richard T. Schumacher       | CEO, Treasurer, Clerk           |

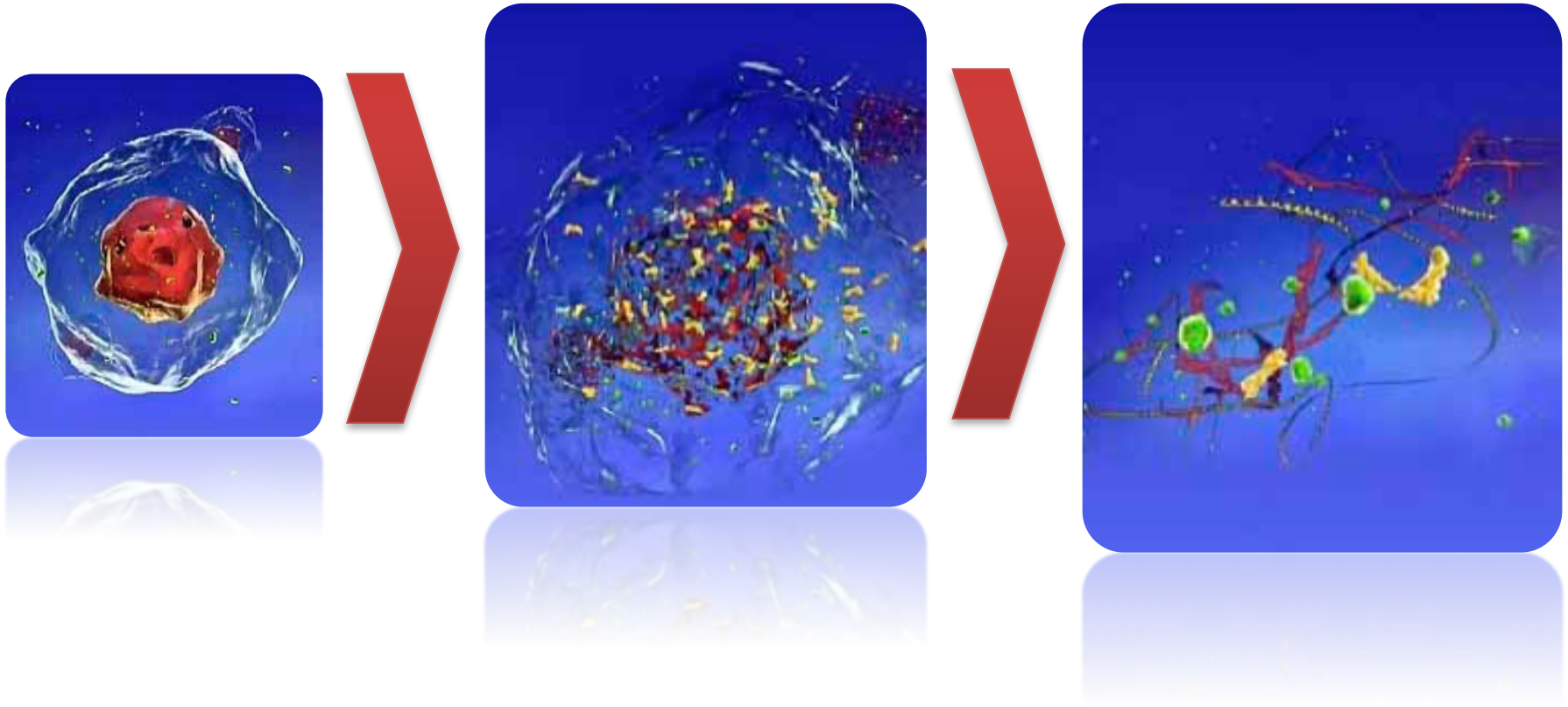
# RESEARCH PRODUCTS & SERVICES

Business Segment

*PBI*



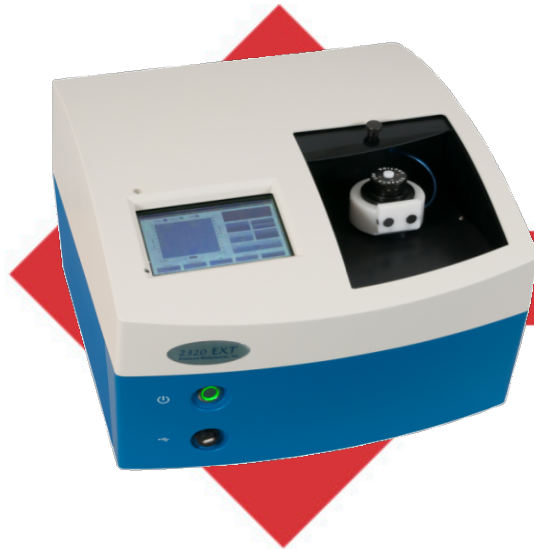
**QUALITY OF ANALYSES IN RESEARCH STUDIES (DISCOVERY TO CLINIC)  
DEPENDS SIGNIFICANTLY ON THE QUALITY OF SAMPLE PREPARATION**





- Analysis of Proteins, Lipids, DNA, RNA, and Small Molecules (“biomolecules”) from Biological Samples is the Backbone of the Research & Biopharma Industry (Discovery to Clinic)
- Quality of Results Depends Significantly on Quality of Sample Preparation
- Current Sample Preparation Methods are Highly Inadequate: Bottleneck
- PCT: Proven Sample Prep Platform with ~ 300 PCT Systems Installed in about 175 Different Sites Worldwide
- 100+ Publications Highlight the Advantages of the PCT Platform in Research & Biopharma Sample Preparation (from Discovery to Characterization to QC to Clinic)
- Biological Sample Preparation (Proteomics, Genomics, Lipidomics, Metabolomics) is a Multi-Billion Dollar Market Comprised of an Estimated 500,000 Scientists in 80,000 Research Labs Worldwide

# BAROCYCLER 2320EXT: EXTREME INSTRUMENT FOR BIOLOGICAL SAMPLE PREPARATION (DISCOVERY TO CLINIC)



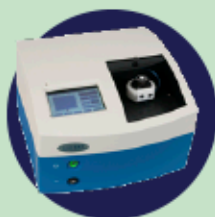
## SPECIFICATIONS

- ***cGxP-compliant data logging and audit trails***
- 16 samples per batch
- Full support for MicroPestle platform
- Pressure: up to 45,000 psi (3.1 kilobar)
- Temperature: 4° C to 95° C (external chiller)  
or Ambient to 95° C (built-in electrical heater)
- Unlimited pressure programming
- Real-time graphs of pressure and temperature
- Enhanced security and user management
- Safe low voltage (24V DC) operation



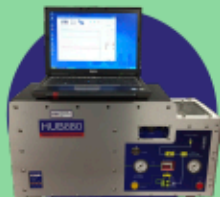


## BAROCYCLER™ 2320EXT



Up to 45,000 psi. Award-winning, next-generation, multi-functional sample preparation instrument

## HUB440 - HUB880



Up to 58,000 & 100,000 psi. All-purpose pressure generators

## BAROZYME HT48



Up to 20,000 psi. High throughput analyses

## XSTREAMPCT™



Up to 58,000 psi. On-line sample processors

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2016-2017

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2H2017 - 2018

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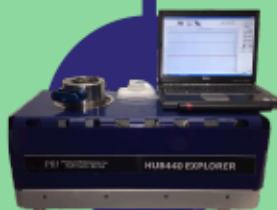
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2019-2020

Up to 25,000 psi. Novel Pressure Pump



RF 1700



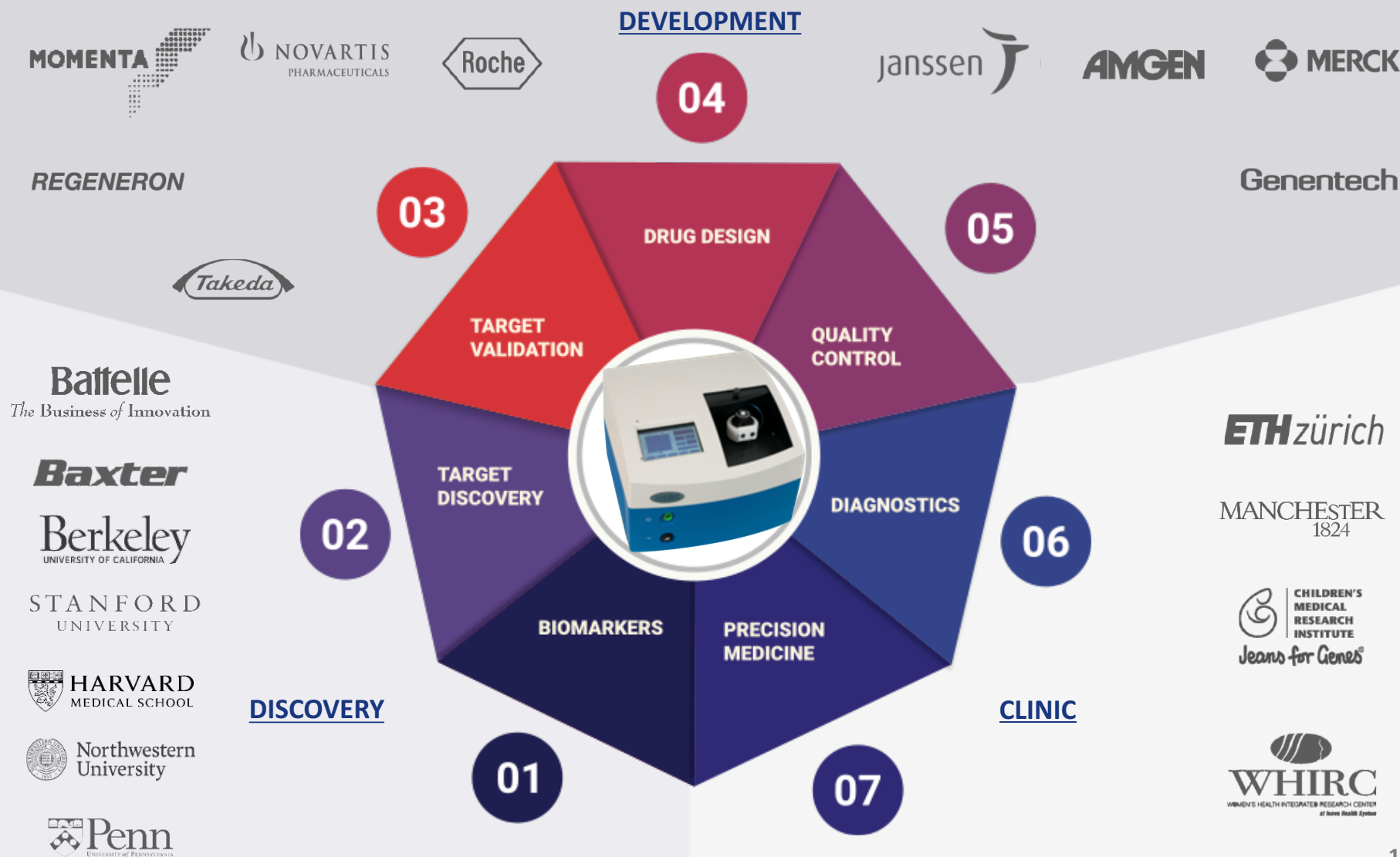
EXPLORER  
DISCOVERY PLATFORM

Lab-Scale UST Homogenizers



ULTRA-SHEAR  
TECHNOLOGY (UST)

# APPLICATIONS OF PBI PRODUCTS & SERVICES SPAN ACROSS ALL BIOPHARMA MARKET SEGMENTS FROM DISCOVERY TO CLINIC



# BIOPHARMACEUTICAL MANUFACTURING PROCESSES

BaroFold  
Business Segment

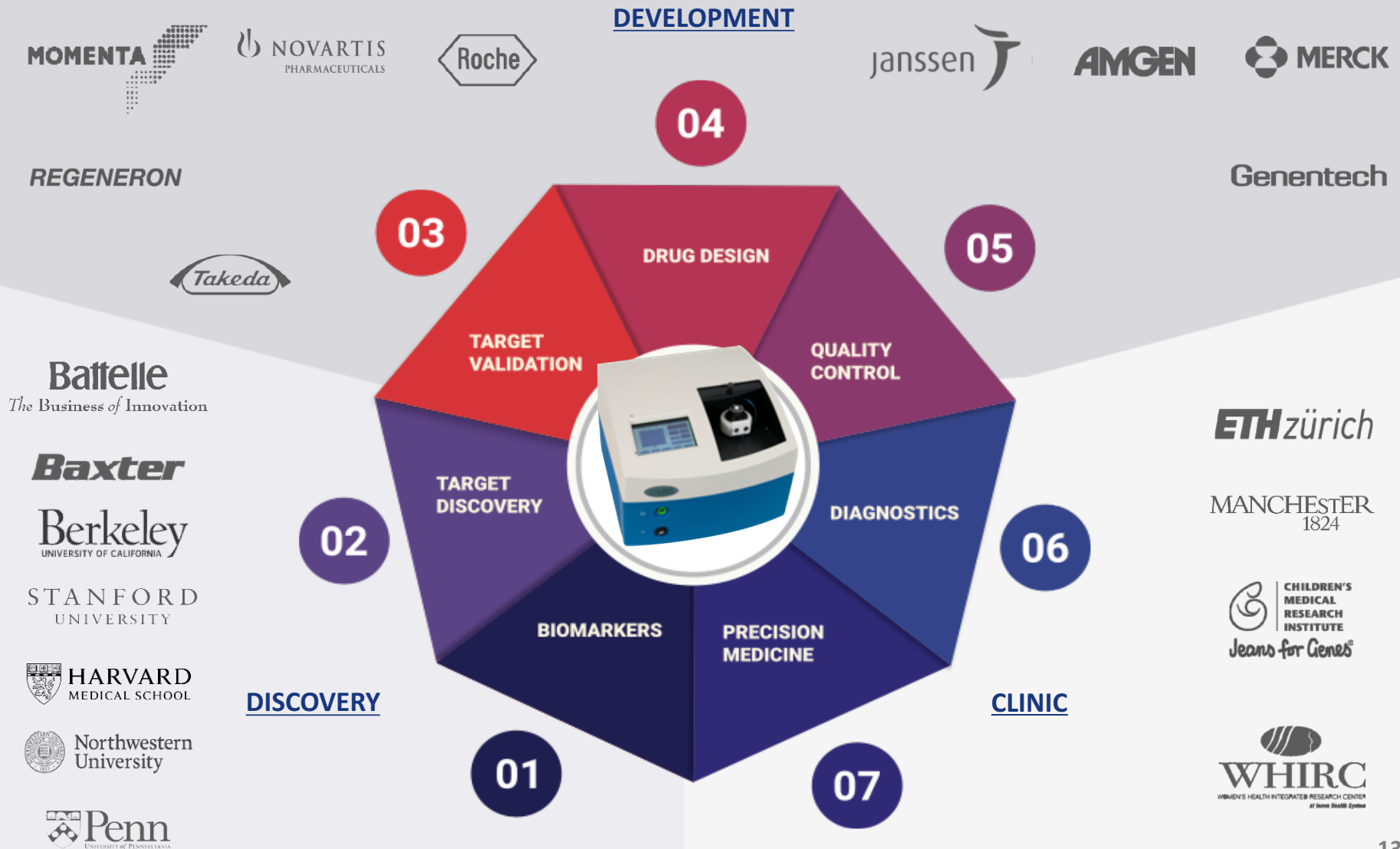
*PBI*



## **Pressure BioSciences Acquires All Assets of Barofold, Inc.**

- 8 Issued High Pressure Patents, including PreEMT Platform
- Extends Some Current Coverage to 2030; Adds New Coverage
- Protein Disaggregation and Controlled Refolding: Potential to Make Significant Contributions in Biological Research and Manufacturing
- Large Molecule Proteins Can Aggregate and Missfold in Manufacturing
- PreEMT Technology: Patented Process for the Disaggregation and Controlled Refolding of Proteins - Could be Critical for Certain Proteins in the Biopharmaceutical Manufacturing Process
- PreEMT/Other Barofold Technologies Work Well on PBI Instruments (R&D)
- BaroFold Investors Requested Majority of Purchase Price in PBIO Stock
- Potential to Generate Millions of Dollars in Annual Royalty Revenue from Biopharmaceutical Company Licenses

# APPLICATIONS OF BAROFOLD PATENTS FOR PROTEIN DISAGGREGATION AND CONTROLLED REFOLDING SPAN ACROSS BIOPHARMA COMPANIES WW



# ULTRA SHEAR TECHNOLOGY ("UST")

Business Segment

*PBI*





- Certain foods are currently subjected to non-thermal, High Pressure Processing (HPP) to eliminate the need for chemical additives and quality degrading harsh treatment.
- HPP is an FDA/USDA accepted non-thermal method to make food safer, last longer, and retain flavor better while keeping a “Clean Label”.
- It is a recent technology that has experienced rapid growth. In 2015, the HPP food market was estimated at approximately \$10B (Toops, 2016).



While HPP can inactivate vegetative forms of pathogens and spoilage organisms in high acid foods, it does not inactivate bacterial spores, has variable effect on enzymes, and does not work well with emulsions/viscous materials.

*The combination of ultra-high pressure and heat is required for the effective control, at room temperature, of enzymes and spores*

- **Emulsion:** Mixture of Two or More Liquids that do not Usually Mix  
Homogenized Milk, Mayonnaise, Vinaigrettes, Vaccines
- **Emulsifiers:** Required for Solubilizing & Stabilizing Emulsions (Surfactants/Detergents)
- **Emulsion Applications:** Food, Pharmaceuticals, Nutraceuticals, Cosmetics, Hairstyling,  
Cannabis Oil Extracts (CBD, THC, etc.)
- **Emulsion Types:** Macroemulsions, Microemulsions, Nanoemulsions
- **Challenge:** Increase/Improve the Utilization, Stability, Bioavailability, Absorption, Appearance &  
Decrease/Eliminate Need for Chemical Additives (e.g., Surfactants)...**Clean Label**

Science Points to Higher Bioavailability, Improved Absorption, Greater Stability,  
Reduced Need for Surfactants (10% of Macro/Micro), More Rapid Uptake,  
Reduction In Food-Borne Pathogens (greater safety),  
Better Preservation of Flavor/Texture/Color, and More  
with Nanoemulsions

### Company Expects Revenue Growth to be Driven by:

- Additions to Sales & Marketing Team (one to four field sales managers in 2018)
- SCIEX Co-Marketing Agreement
- Continued Expansion into Mass Spectrometry Labs Worldwide (est: 16,000)
- New Users & Additional Applications of PCT Platform in Biopharma Market
- Novel Micro-Pestle Consumable
- Recently Released Next Generation Barocycler 2320EXTREME
- Four Additional PCT-based Instruments to be Released over Next 18 Months
- New Ultra-Shear Processing Patent (low cost, scalable production of nanoemulsions)
- BaroFold Acquisition: Expands Research Services Segment & Gives Birth to Biopharmaceutical Manufacturing Process Segment
- PBI Products Fill Existing Needs in Multiple Segments of the \$291B (2021 est.) Biopharmaceutical Market