



Biotechnology Research and Education Program

The University of Maryland's Biotechnology Research and Education Program (BREP) is dedicated to research, education and the development of biotechnology products and processes for Maryland companies.

Bioprocess Scale-Up Facility (BSF)

The BSF has biological product scale-up and production capabilities for fermentation, cell culture, separation, purification and analysis. Facility staff have addressed challenging problems with biopolymers, turbulence and multiphase fluid dynamics, biosensors, process analysis and control, and both metabolic and biochemical engineering.

- A unique facility in Maryland not restricted by current good manufacturing practices (cGMP) requirements.
- Production processes directly transferable to partners operating under cGMPs.

BIOREACTORS

- New Brunswick Scientific (NBS) 250L
- NBS MF114 100L
- NBS BioFlow 4500 22L
- NBS BioFlow 3000 10L and 2.5L; two each
- NBS BioFlow 5000 mobile pilot, cell culture 60L
- NBS Celligen Plus cell culture 5L

CELL HARVESTING, PRODUCT RECOVERY AND PURIFICATION

- Sharples continuous flow centrifuges
- Hollow Fiber and Tangential Flow Filtration Systems
- Microfluidizer Processor M-110EH (cell disruption)
- Freeze dryer/Labconco
- AKTA Explorer and Pilot Chromatography Systems
- Dionex HPLC System

BREP CORE SERVICES

- Bioprocess Scale-Up Facility (BSF)
- Research & Education
- Workforce Training
- Productivity Enhancement

“From the private sector side, to me, this couldn't be a better example of how public/private partnerships can make things go.”

— HENRY “PETE” LINSERT
FORMER CHAIRMAN
MARTEK BIOSCIENCES



BREP customized a 3-day training seminar incorporating lectures and hands-on laboratories to help teach MedImmune staff bio-processing techniques.

“We greatly appreciate their flexibility of scheduling and outstanding teaching staff, and have relied on their consistent level of quality over the years we have worked with them.”

— LORRAINE HOFFMAN, TRAINING COORDINATOR FOR
THE MANUFACTURING DEPARTMENT, MEDIMMUNE INC.™



Bioprocessing Projects

Recent BREP projects cover major biotechnology application areas including: biofuels, natural products for agriculture and crop protection, homeland security, food products, proteins for diagnostic use, and preclinical protein production and purification for biotherapeutics.

Education

The Clark School of Engineering's Fischell Department of Bioengineering offers bachelor's, master's and doctoral degree programs. The Clark School also offers a graduate certificate in bioengineering.

BREP has access to university facilities with capabilities in bioprocessing, DNA sequencing, DNA microarray, GC/MS, microscopy (TEM, SEM) and cGMP production.

Workforce Training

Skilled workforces drive successful biotechnology companies. BREP offers customized programs, which may include hands-on training using a client's production equipment, or equipment in the BSF.

Productivity Enhancement

Highly productive bio-manufacturing companies optimize their processes and minimize non-value-added activities.

BREP's Productivity Enhancement initiative applies "Lean Manufacturing," an operating philosophy focusing on eliminating mistakes and non-value adding activities, to bio-manufacturing.



BREP FOUNDED

- 1984

SOME BREP CLIENTS

- Baxter
- Digene
- Human Genome Sciences
- Martek Biosciences
- MedImmune
- NIH
- Paragon

Staff have conducted more than 1,000 fermentations since 1998



CONTACT INFORMATION

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