

BIOPROCESSING. Bioprocessing research centers and institutes at universities provide critical research and training to the nation's biotechnology industry. These centers foster research and development collaborations with industry by providing the scientific expertise and state-of-the-art equipment and research facilities at a reasonable cost. The industrial clients can determine the optimum conditions for producing valuable biomolecules from their genetically engineered organisms, thus avoiding the costs of expensive equipment. The North Central U.S. has three of the nation's leading bioprocessing centers (see Appendix C for contact individuals). A brief description of each follows.

Biological Processing Technology Institute, University of Minnesota. Located on the St. Paul campus, BPTI's Central Fermentation Research Facility is a 4000 sq. ft. laboratory and pilot plant facility which provides access to state-of-the-art equipment for research and development in fermentation, mass animal and cell culture technology, and large scale separation for biological molecules. There are more than 24 fully instrumented bioreactors ranging in size from 7 to 300 liters. BPTI has an on-line process monitoring, control, and data acquisition with the Rosemount System 3 distributed process control system and a Central Hybridoma Facility for custom hybridoma production (300 L. batches) and large scale antibody purification. There are over 40 collaborating faculty from research facilities and institutes, including: Institute of Human Genetics, Plant Molecular Biology Institute, Center of interfacial Engineering, and the Food Animal Biotechnology Center.

Center for Biocatalysis and Bioprocessing, University of Iowa. More than 30 faculty members - from the University's departments of biochemistry, chemical and biochemical engineering, chemistry, civil and environmental engineering, medicinal and natural products chemistry, and microbiology - have research programs in biocatalysis and bioprocessing. These faculty have a shared commitment to working collaboratively with industry in assessing the technical feasibility of commercially important biotransformations. The Center is located at the Oakdale Research Park in Iowa City. The 13,000 square foot facility has both 3,500 sq. ft. of leasable space for start-up biotechnology companies. Companies can work directly with CBB staff in the 7,000 sq. ft. laboratory and fermentation suite. CBB has 22 instrumented fermentors (ranging from 1 -1000L), pilot scale processing center, and analytical research facilities. Fourteen Core Research Facilities at the University of Iowa campus are also available for corporate use.

Colorado Bioprocessing Center at Colorado State University. Colorado Bioprocessing Center provides research and training at its 3,000 sq. ft. facility. The center is equipped with several microbial, insect and mammalian cell reactors ranging in size from 2 -100 liters.; pilot scale chromatography and downstream processing equipment. CBC is a joint program between the Colorado Advanced Technology Institute and Colorado State University.