

NCTM

**NATIONAL CENTER FOR
THERAPEUTICS MANUFACTURING**

100 Discovery Drive, 4482 TAMU
College Station, Texas 77843-4482
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The National Center for Therapeutics Manufacturing is an interdisciplinary workforce education and research center serving the global vaccine and biopharmaceutical manufacturing industries.

Training and Continuing Education



Instructor-led, online, and hands-on vaccine and biotherapeutics manufacturing training in:

- Cell culture techniques, aseptic processes and microbiology
- Upstream and downstream processing of biological materials including viruses
- Monoclonal antibodies and recombinant proteins
- Industrial bioanalytical methods

Research Support and Technical Services

Equipment use agreements and technical support for scientists/researchers

- State-of-the-art equipment for use on your project
- Includes trained operator time and documentation



**TEXAS A&M ENGINEERING
EXPERIMENT STATION**

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Technical Training Series

- Introduction to Pharmaceutical Manufacturing
- Understanding the Science of the Biopharmaceutical Industry
- cGMP Procedures and Documentation
- Pharmaceutical Facility Operations
- Safety in the Biopharmaceutical Industry
- Quality Unit Operations
- Upstream Manufacturing of Biologics
- Downstream Manufacturing of Biologics

Continuing Education Courses

- Principles of Scale Up: Upstream Biomanufacturing & Cell Culture Techniques
- Bioseparations & Downstream Bioprocessing
- Corrective and Preventative Actions
- Human Error & Resilience in Biomanufacturing Systems
- Pharmaceutical Supply Chains
- Regulatory Compliance in the Pharmaceutical Industry
- Vaccinology 101

Process Development and Upstream Production Lab



This 2,000 square foot cGMP BSL2 suite is subdivided to accommodate multiplatform processes from bacteria (*E. coli*, etc.) to various mammalian cell (CHO, VERO, BHK, etc.) expression systems. Activities in this suite include upstream process development and manufacturing up to pre-clinical and Phase I scale. We have bioreactors from 1L to 100L working volumes, including single use, stainless steel, and wave-type systems that will also accommodate perfusion.

Process Development and Downstream Production Lab

This 2,700 square foot suite enables our downstream purification process development and manufacturing activities. The processes supported in this area include clarification, normal flow filtration, tangential flow filtration and chromatography methods from benchtop to pilot scale production appropriate for pre-clinical trials. Additionally, early stage formulation and lyophilization studies can be conducted in this suite.



Analytical Methods Development and Product Testing Lab



This 2,700 square foot suite houses instrumentation to support various analytical assays used in both quantifying and analyzing biomolecules and potential contaminants.



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