

# Translational Life Science Technology Career Paths

## APPLIED BIOTECHNOLOGY



### A NOTE FROM OUR PROGRAM DIRECTOR:

Elizabeth Friar, Ph.D.



We prepare students to not only work in biotechnology, but to become innovators and thinkers.

The Translational Life Science Technology (TLST) program is unique and only located at the UMBC-Shady Grove campus. The program has been designed with the input of industry leaders to prepare students to be competitive in the dynamic biotechnology field. As a TLST major, you'll receive training in three core areas of interest—cell and molecular biology, data science, and engineering. Coursework includes Biochemistry and Molecular Biology, Bioinformatics, Statistics, Biochemical Engineering, and Advanced Biomanufacturing. You'll also have the opportunity to expand your understanding with unique course offerings, such as Epidemiology, Cancer Biotechnology, and Biotechnology Instrumentation. You can even earn additional experience in Python programming and Machine Learning through an optional Bioinformatics track.

Upon graduation, our TLST students go on to a wide variety of careers in the vibrant and rapidly-growing biotechnology field, including jobs in the private sector, government agencies, and academia. Recent graduates have been hired by AstraZeneca, Kite Pharma, American Gene Technologies, and the National Institutes of Health, among others.

### BIOTECHNOLOGY INDUSTRY PATHS

#### RESEARCH & DEVELOPMENT

Genetic Engineer, Validation Scientist, Formulation Scientist, Assay Developer, Process Development Scientist (*Cell Culture, Upstream, Downstream Processes*), Computer Modeler/Programmer, Bioinformatics Specialist

#### QUALITY SYSTEMS

Quality Assurance, Control Scientist/Engineer, Quality Control Chemist, Quality Documentation Specialist, Quality Assurance Auditor, Process Validation Engineer

#### CLINICAL STUDIES

Clinical Research Associate, Clinical Coordinator, Clinical Data Specialist, Clinical Data Programmer

#### MANUFACTURING & DISTRIBUTION

Process Development Technician, Automation Engineer, Environmental Health & Safety Specialist, Product Production Planner & Scheduler, Manufacturing Research Associate

#### SALES & TECHNICAL SUPPORT

Sales Representative, Marketing Analyst, Marketing Manager, Product Manager

#### OTHER/CROSS-CUTTING ROLES

Systems Analyst / Data Analyst, Biostatistician, Data Manager, Patent Agent, Lobbyist, Technology Transfer

#### UNIVERSITY PATH

Graduate school for M.S., MPS, or Ph.D., Translational Science Research Assistant, Technology Transfer Specialist, Incubator Coordinator

#### HEALTHCARE INDUSTRY PATH

Medical, Dental, Veterinary or Pharmacy school, Medical Research Technician, Medical Lab Technician, Cytotechnologist, Biomedical Equipment Technician, Medical Technologist, Clinical Lab Specialist

#### GOVERNMENT PATH

Research, Policy or Program Analyst, Research, Policy or Program Manager, Basic or Applied Science Research Assistant within a particular health, agriculture or environment area (Intramural Laboratory), Translational Science Research Assistant (Intramural Laboratory), FDA Reviewer, Inspector or Auditor, Congressional Staffer on biotechnology-related issues



UMBC at The Universities at Shady Grove  
B.S. in Translational Life Science Technology (TLST)  
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# Translational Life Science Technology Opportunities



## 50K-99K

STARTING SALARY WITH A BACHELOR'S DEGREE



## 22.8

PROJECTED INDUSTRY GROWTH OVER 10 YEARS

Source: Labor Insight (Burning Glass Technologies)



**Montgomery County, MD** is the anchor of the 4th largest biotech hub in the U.S.

Source: Washington Business Journal



**AstraZeneca**

**Emergent Biosolutions**

**Novavax**

**Charles River Laboratories**

**U.S. Food and Drug Administration**

**National Institutes of Health**



**80%** of the U.S. pharmaceutical industry and **2,700+** life science companies are within a two-hour drive from Maryland.

Source: Maryland Department of Commerce

These are just some of the organizations that are **less than 15 minutes** from The Universities at Shady Grove by car.



### ALUMNI HIGHLIGHT: Rediet Shewakena '21

After graduating with an associate degree in biology from Montgomery College, Rediet Shewakena '21, translational life science technology, heard about the TLST program from a friend while exploring other STEM career options. While at UMBC, Rediet completed two industry internships, first as an accessioner at GeneDx, and then as a research intern at Integrated Pharma Services. At IPS, Rediet performed research on possible anti-biofilm properties for bacteriophage viruses. She was able to present the results of that research at the Women in STEM conference held at The Universities at Shady Grove. Now, Rediet is employed as a Cell Therapy Specialist at Kite Pharma.

To learn more about TLST at UMBC-Shady Grove, visit [umbc.edu/tlst](https://umbc.edu/tlst) to request information.