

UMBC-Shady Grove: Translational Life Science Technology (TLST)

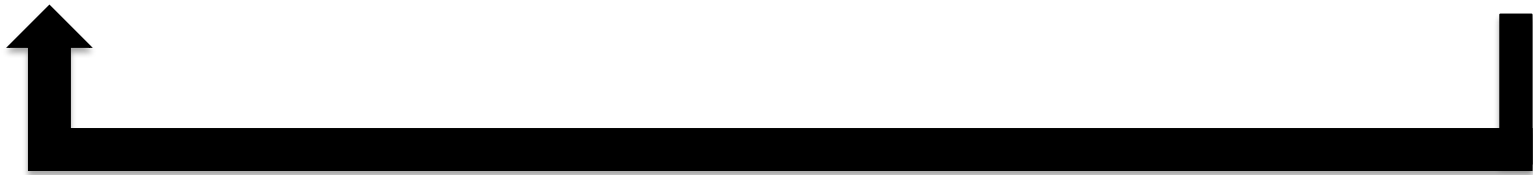
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About Me

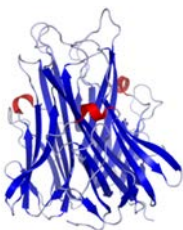


Quick Summary of Translational Life Science Technology B.S. Program

- Provides a new bachelor of science option in Montgomery County for students interested in biology, chemistry, & medicine that want to advance their career beyond the A.S. or A.A.S.
- More applied B.S. so students increase their competitiveness for jobs in the biotech industry
- Required internship to help practical learning and obtaining FT employment
- Application fee waiver & \$1000 scholarship per year in addition to other funds
- Flexibility on prerequisites for admission into TLST program for those within a year of graduating from MC and preparing for transfer (see slide 15)

What is Translational Science?

The field of investigation focused on understanding the scientific and operational principles underlying each step of the translational process (NIH/NCATS)



Translation of TNF α discovery
to Humira self-injection pen



**Scientific
Discovery**

Translational Science
(ie: Development process for Pharmaceuticals,
Ag Products and other Biotech products)

**Biotechnology
Product**

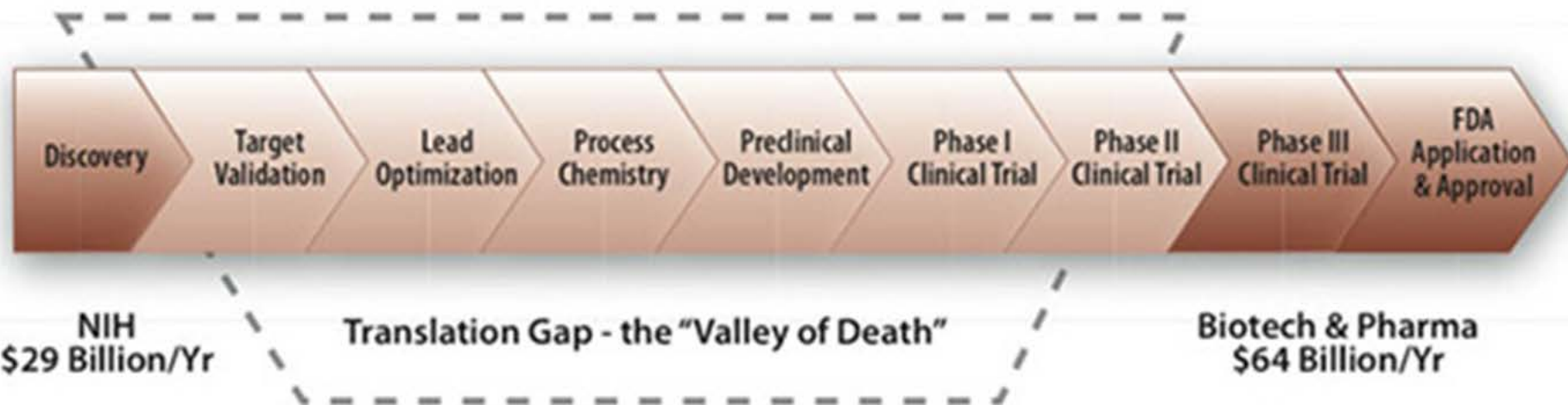
Potential of Biotechnology



Produced with support from: **Genentech**
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Biotechnology: Drug Discovery and Development Process - Simplified

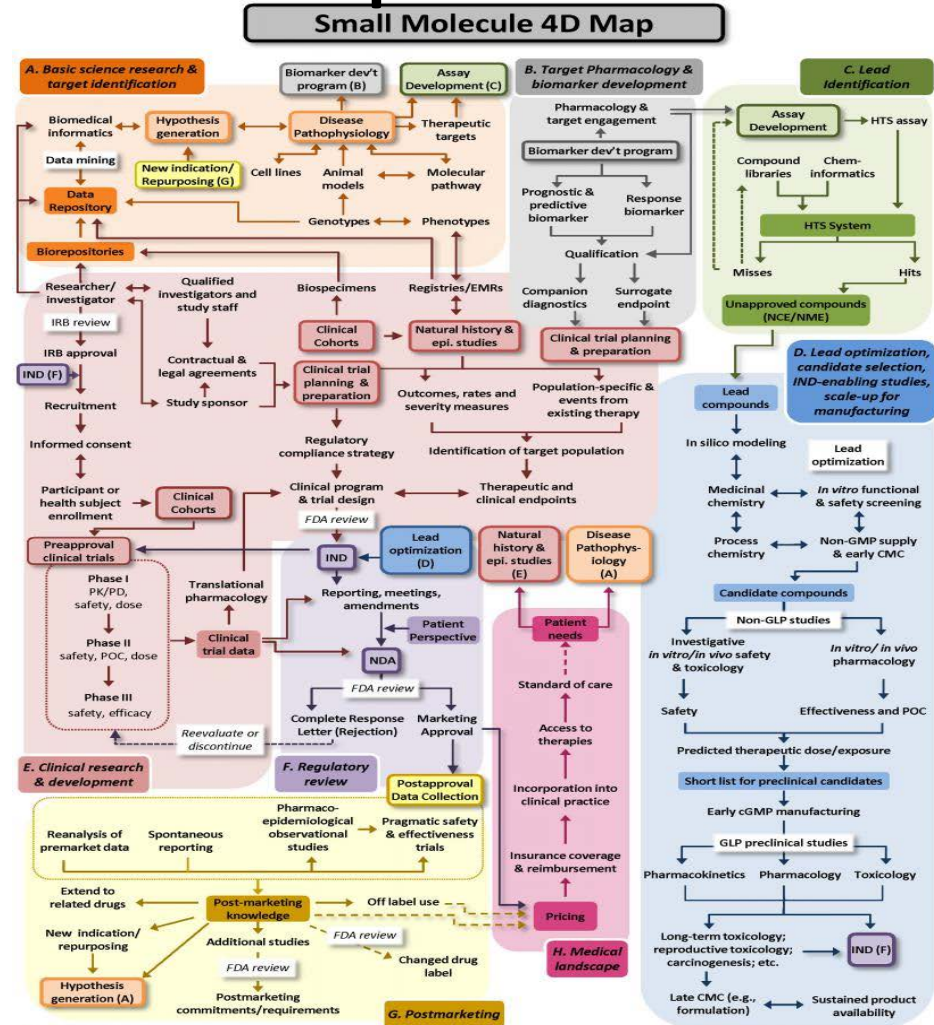


Sources: Michael J. Fox Foundation for Parkinson's Research; *FasterCures*

Drug Discovery and Development

Process – More Accurate

Lots of job & business opportunities!



Wagner JA, Dahlem AM, Hudson LD, Terry SF, Altman RB, Gilliland CT, DeFeo C, and Austin CP. Drug Discovery, Development and Deployment Map (4DM): Small Molecules

300+ BIOTECH COMPANIES

**75% of MD Biotech companies
are in Montgomery County**

33 Labs and Agencies

\$40-80K starting salary

Types of Jobs with TLST Degree

- Biotechnology Industry
 - R&D
 - Quality Systems
 - Manufacturing
 - Sales & Technical Support
 - Other Cross-cutting areas
- Government
- University
- Healthcare Industry

**See TLST Careers handout for more details*

Translational Life Science Technology (TLST) B.S. Program

- Applied degree in response to the workforce needs of the biotechnology industry
- Educate students in a practical way on the biotechnology discovery and development process
- Partially launched Fall 2018
- **Full launch Fall 2019**

Biomedical Sciences and Engineering Education (BSE) Facility – Opening Fall 2019



TLST B.S. Program

**UMBC's first undergraduate STEM program at the
Universities at Shady Grove**

[Baltimore Sun, March 17, 2018, 9:15am](#)

Never heard of UMBC? MIT has. And Cal Tech. And Harvard. And Stanford...

"..... churns out future research scientists, computer scientists, engineers and MD-PhDs at an astonishing rate."

"...The magazine [U.S. News and World Report] also ranks it as one of the top 20 schools for undergraduate teaching and one of the five most innovative national universities."

TLST is ONLY at USG ~ A unique UMBC offering in MC

TLST Classes

- Applied Cell biology
- Biochemical engineering
- Bioprocessing
- Lab Instrumentation
- Biostatistics
- Bioinformatics
- Epidemiology
- **Internship (two semesters)**

Scholarships

- Application fee waiver (\$75) for TLST
- TLST Scholarship of \$1000 per year
- USG Scholarships

Prerequisite courses for TLST

- Principles of Chemistry I & II and Lab (CHEM 131 & 132)
- Organic Chemistry I and Lab (CHEM 203)
- Foundations of Biology: Cells, Energy & Organisms (BIOL 150)
- Foundations of Biology: Ecology and Evolution (BIOL 151)
- Microbiology (BIOL 210)
- Molecular and General Genetics (BIOL 222)
- Introductory Physics (PHYS 203 OR 233)
- English Composition
- Applied Calculus or Calculus I (MATH 170 OR 181)
- General Education

**For students within a year of graduating and transferring from MC, CHEM 132, CHEM 203, BIOL 210, PHYS 203/233, and some General Education can be taken at MC after admission to TLST if needed*

**See suggested transfer pathways for Biological Sciences and Biotechnology for more information*

Questions?

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