



**INNOVATEBIO**

National Biotechnology Education Center

Envisioning the Next Bioscience Workforce:  
A Summit on Industry Trends and Needs  
Washington, DC  
June 26-27, 2023

# Industry-Academic Partnerships Mini-Panel

Tuesday, June 27, 2023

12:00 -12:30 PM



# Industry-Academic Partnerships



Highlighting innovative partnerships between industry & academia that are addressing the industry's critical workforce needs

- **Sengyong Lee, Ph.D.**, Prof. of Biotechnology, Ivy Tech CC
- **Russ Read**, Executive Director, National Center Biotechnology Workforce, Forsyth Tech
- **Margaret Bryans, Ph.D.**, Assoc. Prof. & Coordinator of Biotechnology Montgomery County
- **Deborah Shepard**, Special Projects Career Pathways Coordinator, South Bay Workforce Investment Board (SBWIB)



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# Lilly Scholars Program between Eli Lilly and Ivy Tech Community College

Sengyong Lee, Prof of Biotechnology  
Ivy Tech Community College, Bloomington,  
IN



# Lilly Scholars Program



A \$15 million investment by Eli Lilly and Company over 5 years

- Implementing a seamless workforce development pipeline for the pharma manufacturing careers starting from high schools (dual credit/early college courses), through CTs and AS degree at Ivy Tech.
- Providing scholarship opportunities to about 1,000 high school and college students, who are mostly, first generation and low income students.
- Creating a new instructional capacity and training/career enhancement programs at Lilly's campus (MQLC facility) for their employees.



# What does it mean?



Much needed renewed Partnership between a major pharma and a community college

- A \$2.5 million grant by Lilly Endowment started the Biotech program at Ivy Tech CC (6 regional campuses) in 2003
  - Four campus programs were shut down and suspended
- Strong workforce need for launch of new drugs, growth of many pharma companies, reshoring of operation, etc.
- Instructional capacity and expertise at CC?
  - Ivy Tech Bloomington implemented Biopharmaceutical Manufacturing and Medical Device Quality CTs and AAS degree programs focused on cGMP of API and formulation and fill-finish operation of drug products.





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# Industry-Academic Partnerships: BETA Skills to meet emerging talent needs

Russ H. Read, BSc., MA Co-PI, InnovATEBIO

Executive Director, Nat. Ctr. Biotech Workforce,  
Forsyth Tech, Winston - Salem, NC



# Goal: Advance Biomedical Emerging Technology Applications (BETA) Education

## Objectives

- Develop BETA Skills, capture emerging and converging technologies
- Develop novel industry driven BETA Professional Development
- Develop a robust BETA Community of Practice

# BETA Skills - Outcomes



- **BETA Skills** - published; a vibrant Community of Practice - ongoing for 5 years
- **Professional Development** - CyberBIO security, Nanobiotechnology, GMP, GDP and Regenerative Medicine
- **BETA - BCSI Micro Credentials developed** - GDP, Problem Solving & Audit Interactions
- **Industry Fellows Program** - 8 weeks for 5 Instructors “Fellows” – embedded in BETA type bioscience companies/institutes.



# BETA Skills – Partners - Ecosystems



- **Ivy Tech CC** - Bloomington- ecosystem(Indiana Health Industry Forum)
- **Anoka Ramsey CC** – Coon Rapids- ecosystem(Medical Alley)
- **College of the Canyons CC**- Santa Clara- ecosystem(Southern California Biomedical Council)
- **NCBW/Forsyth Tech CC** - ecosystem(NCBIO, NC Biotechnology Center, WFIRM and BioNetwork Capstone Center)
- **NSF ATE** – Supplements with NIIMBL & BioMADE and InnovATEBIO

**Plan - 2024 - Develop BETA Skills Professional Development for College Administrators through the COP**

# Attributes & Disclaimer



NSF ATE DUE #1800909

Thank you !



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[www.biotechworkforce.org](http://www.biotechworkforce.org)

## Skills for Biomedical Emerging Technology Applications

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# Partnering with GSK to Create a Novel US Biotech Apprenticeship Program

Maggie Bryans Ph.D.  
Assoc. Professor and Program Coordinator  
Montgomery County Community College, Blue Bell, PA



# The GSK Apprenticeship Program



- Local industry partner GSK sought to replicate UK apprenticeship model at it's US Upper Merion, PA, R&D site to strengthen the pipeline of entry-level technicians.
- 2015: GSK approached MCCC to partner in developing the program and the necessary application and approvals from the DOL
  - MCCC provided outlines of related technical instruction in biotechnology
  - Collaborated with GSK (HR and Legal teams) and MontcoWorks WIB to submit necessary documentation to DOL
  - Spring 2016 Apprenticeship approved



# The GSK Apprenticeship Program



- For HS students GPA requirements, course requirements (AP science etc.); must be 18 years of age.
- For college students with fewer than 30 college credits and less than 2 years related work experience
- FTE at GSK, on-the-job training, ~ \$22/hour
- Release time to complete coursework, generally 3 years to complete AS/AAS degree
- Tuition and other education costs covered by GSK
- Full time position upon completion of program

# The GSK Apprenticeship Program (cont.)



## [Apprentices | GSK US](#)

- Biochemist Associate Apprentice
- Biopharm Manufacturing Associate Apprentice
- Compliance Engineering Technician Apprentice
- Chemical Compound Operator Apprentice

Other GSK locations:

BioPharm, Rockville, MD



North Carolina



# The GSK Apprenticeship Program (cont.)



## Challenges:

- Novel approach to education and career path not well understood and received by high school students and parents
- Initially the apprentice position considered an FTE position for a particular GSK unit leading to internal resistance from some hiring managers to accept an apprentice over a regular employee
- Creating awareness of the program
- Most recruiting success has come from early-stage community college students
- It takes collaboration from several departments at the college to put the program in place

# Face of Success



## - QCB Full Time Announcement QC Associate Scientist



## Congratulations Christina Newman!

**Christina has accepted the position of QC Associate Scientist.**

**Christina graduated from Montgomery County Community College with an A.A.S Degree in Biotechnology as well as a Biotechnology and Biomanufacturing Certificate of Completion. She also just completed her apprenticeship onsite at UMBL. In her spare time Christina enjoys not only figure skating but coaching it as well, sky diving, traveling, and spending time with friends and family. Her first day is June 1st and she'll report to Karas Bensetler.**

Christina is currently pursuing a BS in Biological Sciences at Arizona State University



# Industry, Academic, & Workforce Development Organizations Partner for Novel Training Program in Philadelphia

## Aseptic Manufacturing Technician Training Program

22-week paid program:

- Wistar Institute and 12-week Externship at Iovance Biotherapeutics
- Requirements: GED, and test at a 12<sup>th</sup> grade level in reading, literacy, and math.



*Dr. Kristy Shuda McGuire*  
*Dean of Biomedical Studies*  
*The Wistar Institute*



*Cait Garozzo*  
*Executive Director*  
*West Philadelphia Skills Initiative*



**[West Philadelphia Skills Initiative Recruiting for  
Biomedical Technician Training, \\$23/Hour to Start  
\(philadelphiareentrycoalition.org\)](https://philadelphiareentrycoalition.org)**



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# Alternative models to building Industry-Academic Partnerships that meet talent needs today & tomorrow

**Deborah Shepard**, Special Projects Career Pathways  
Coordinator

South Bay Workforce Investment Board-SBWIB/Bio-Flex  
Pre-Apprenticeship and Apprenticeship (LA County, CA and  
Beyond)



# Workforce Boards- Meeting Biotech Talent Pipeline & Development Challenges



- **Our mandate:** help people find jobs & help businesses find & develop workers - at no cost to either
- **Partnership convener:** sector partnerships; one-on-ones
- **Funding support (Where's the 'beef'?)**
  - Community Colleges as LEA partner on State/Federal Grants
  - Private sources- Foundations, CBOs, economic development
  - The 'buzz': Non-traditional Apprenticeship & Pre-Apprenticeship Programs
  - SBWIB-sponsored registered apprenticeship occupations:
    - Bio-Production Technician, Biomedical Equipment Technician, Bio-Medical Quality Assurance Specialist; Bio-Medical Quality Technician

# When they don't come to you!

## Building Industry Partnership Pathways

- **Academic-Workforce Board collaboration**
  - Joint Advisory Boards
  - Consortiums: LARC (19 LA Co CC), Allied Health (13 LA CC)
  - CA Community Colleges-Bioscience Workforce Development Hub team
  - CIRM-'Bridge' community college program
- **Convene:** "Engaging" is not a one-time chat
- **KISS & WIFM** principals apply
- **The 'F' words:** Flexibility and Follow up
- **Celebrate!**



# Q&A / DISCUSSION

# Questions for State Task Forces



1. Is there a similar unmet need in your state?
2. What resonated for you in the mini-panel presentations?
3. How can you bolster/develop new industry-academic collaborations in your state to address?