



Academic/Industry Partnerships: The New York State Model

Robert Geer

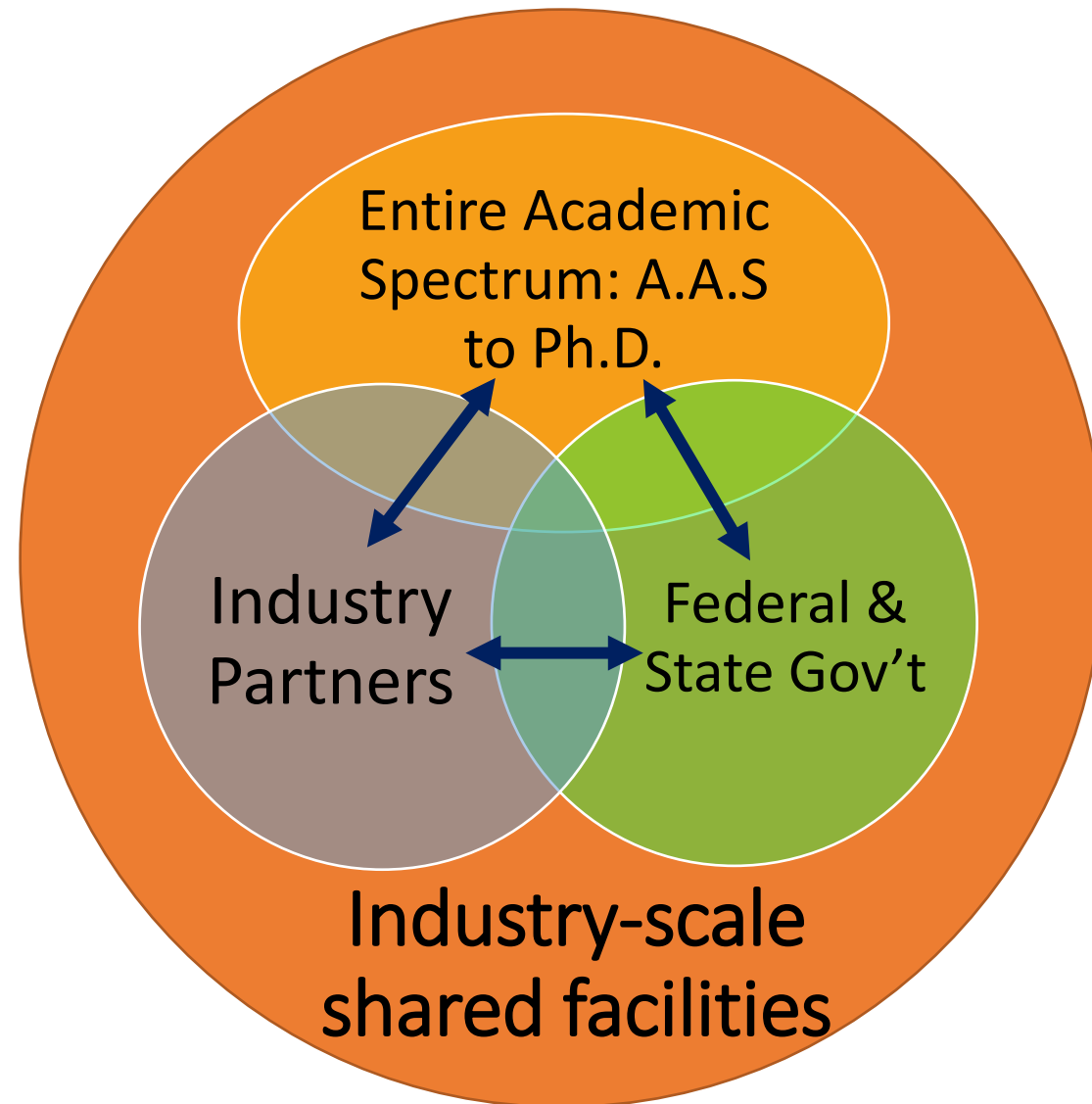
SUNY Polytechnic Institute



Critical Elements for Effective Academic/Industry Partnerships

What makes academic industry partners effective and scalable?

- Cutting-edge manufacturing infrastructure
- Co-location – Industry partners directly engaged with academia
- Partnerships with Federal and State Governments



NYS Approach: Albany Nanotech's 300mm Si Fab

- Full-flow 300mm Si process line
- Cutting-edge Si processing (EUV Lithotgraphy)
- Full-flow Integrated Photonics
- Novel Memory Technologies
- Full-flow IC and Photonics packaging line

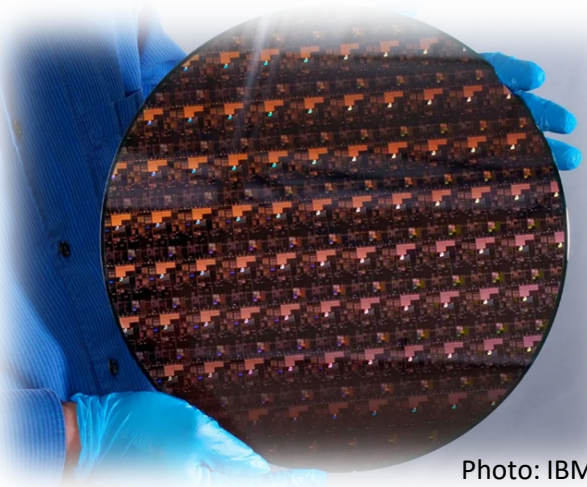


Photo: IBM

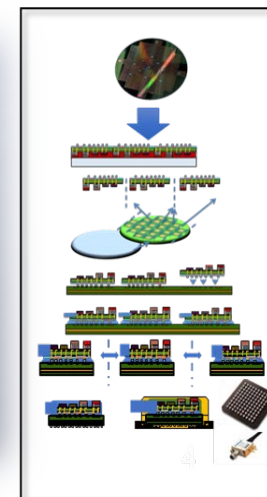
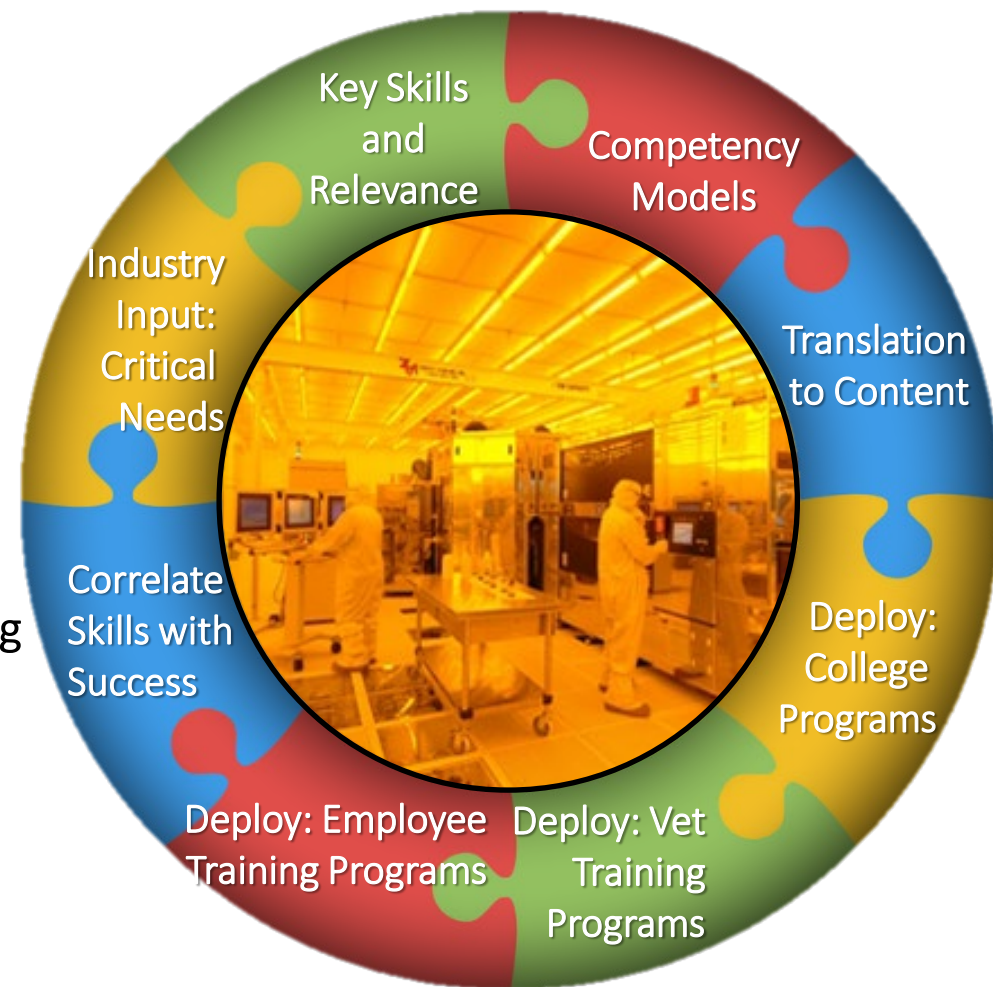


Photo: TAP facility - Rochester

NYCREATES: Supporting a Regional Semiconductor Manufacturing Workforce

- **Educational Content:** Support regional colleges/universities to better prepare students for semiconductor manufacturing (***SUNY Poly, University of Rochester, RIT, MIT, Hudson Valley CC, Mohawk Valley CC, Westchester CC, Monroe CC, Fulton-Montgomery CC, etc...***)
- **Access to IC Design/Fab:** Giving students access to IC design tools and educational multi-project wafer (**MPW**) runs (through **AIM Photonics**)
- **Experiential Learning Nexus:** Internship programs in our Albany Nanotech facility and Rochester TAP facility
- **Incumbent Worker Training:** Supporting incumbent worker training programs for cleanroom techs for regional partners (**GlobalFoundries, Tokyo Electron and Wolfspeed**)
- **Workforce Pipeline Expansion:** Creation of a **DoD SkillBridge** program (VET S.T.E.P.) to transition veterans into semiconductor manufacturing



SUNY Poly 300mm Si Process Operator Internship Program: 2015-2022

- 12-week internship at Albany Nanotech Complex 300mm Si Processing Facility
 - 24 hours/week
 - Integrated with Processing Module Teams
 - Recruit exclusively from regional Community Colleges (HVCC, FMCC, SCCC, ACC)
- Outcomes (for 75 graduating interns)
 - 21 interns hired through Albany Nano 300mm fab
 - 10 interns hired at GlobalFoundries
 - 14 interns hired at M+W/UW Marx (temp)
 - 4 interns hired at SUNY Poly
 - 11 interns continuing education
- Expanded to NIST (Gaithersburg, MD) and AFRL (Rome, NY)

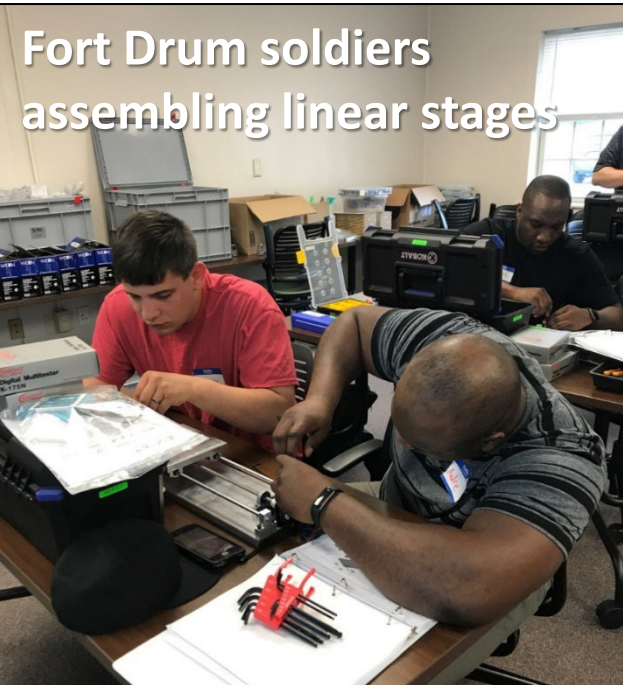




CSP/SkillBridge Program @ Fort Drum

VET S.T.E.P.: Semiconductor Training and Experience Program

Fort Drum soldiers assembling linear stages



Pneumatics training with Fort Drum Soldiers



Mechatronics training with Fort Drum Soldiers



1. Semiconductor Tech Training: Mechanical Alignment/Assembly, Pneumatic System Assembly Test, Mechatronics
2. Semiconductor Company Internship (Indium, Wolfspeed, GlobalFoundries, etc...)

Academic/Industry Partnerships: Expanding the Map

Leverage NYCREATES/Academic partnerships to develop a regional semiconductor workforce

- Education Partners (> 20,000 students)
 - SUNY Polytechnic Institute
 - RIT
 - Univ. of Rochester
 - Mohawk Valley CC
 - Fulton Montgomery CC
 - Hudson Valley CC
 - Monroe CC
 - Westchester CC
- Semiconductor Workforce Development Partners
 - National Science Foundation
 - SEMI/NIIT
 - SUNY Impact Foundation, NYS

