Academic/Industry Partnerships:
The New York State Model

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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

Diagram:
- Entire Academic Spectrum: A.A.S to Ph.D.
- Federal & State Gov’t
- Industry-scale shared facilities
- Industry Partners

*NEATEC* Northeast Advanced Technological Education Center
*SUNY* SUNY Polytechnic Institute
NYS Approach: Albany Nanotech’s 300mm Si Fab

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

Industry partners leveraging shared facilities
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 Professing 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

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