Vision and Mission:

• Build a highly skilled technical workforce for the region and beyond
• Create a Career Pipeline that builds interest in the Semiconductor and Nanotechnology Manufacturing fields

Focus: Technician Education Content Module Development

NEATEC has developed a variety of hands-on technician education modules for use in community college-technician education programs including:

• **Advanced Manufacturing Practice Modules**: Module for advanced workmanship skills, mechanical assembly, pneumatic systems, and basic electrical systems.

• **Basic Vacuum Technology**: System assembly, pump-down, conductance, and leak rate evaluation using commercial vacuum fittings and gauges. Employs NEATEC’s custom VAPPOR system.

• **Advanced Fitting and Vacuum Component Assembly**: System assembly, pump-down and advanced leak detection utilizing a 2nd-generation vacuum trainer incorporating commercial vacuum components and a He-Leak Detection system.

• **Basic Plasma System Assembly and Operation**: Modification of the NEATEC VAPPOR system for RF gas-plasma generation, characterization and troubleshooting.

• **RF Power Measurement Lab**: A full, lab-scale kit for introduction and measurement of RF power systems including an introduction to impedance and impedance matching

• **Basic PLC Programming and Control Circuits**: Introductory course in PLC programming electrical control systems. Includes integration of a basic micro-controller within an electro-pneumatic circuit for hands-on learning and troubleshooting

• **Mechatronics Operation and Troubleshooting**: A full, lab-scale module incorporating a 7-unit Amatrol mechatronics trainer. Includes labs for fault identification, and advanced troubleshooting.

Focus: Experiential Learning and Outreach Programs

NEATEC has established a number of experiential learning and outreach programs for the technician career pipeline in Semiconductor and Nanotech manufacturing. Examples include:

• **NIST Cleanroom Technician Internship Program**: Established an Internship Program at NIST’s Center for Nanoscale Science and Technology in Gaithersburg, MD – Placed 45 interns since 2014.

• **Transitioning Veteran Technician Training Program at Fort Drum**: Seven training workshops (56-72 hours of training each) developed and carried out. 67 transitioning soldiers at Fort Drum participated.

• **NEATEC Incumbent Technician Training Program**: NEATEC modules developed for incumbent semiconductor technicians in regional semiconductor industry were used to train more than 700 semiconductor manufacturing techs since 2015.

NEATEC: Key Impacts

- More than 25 hands-on modules developed for semi/nanotechnology technician education
- More than 1,000 community college faculty, students, high school faculty, high school students have participated in NEATEC workshops/outreach programs.
- NEATEC-developed course modules incorporated in coursework at 7 regional colleges & community colleges.
- NEATEC-developed nanotechnology kits utilized in more than 20 high schools in the Northeast