

NNCI: Southeastern Nanotechnology Infrastructure Corridor (SENIC) - ECCS 1542174



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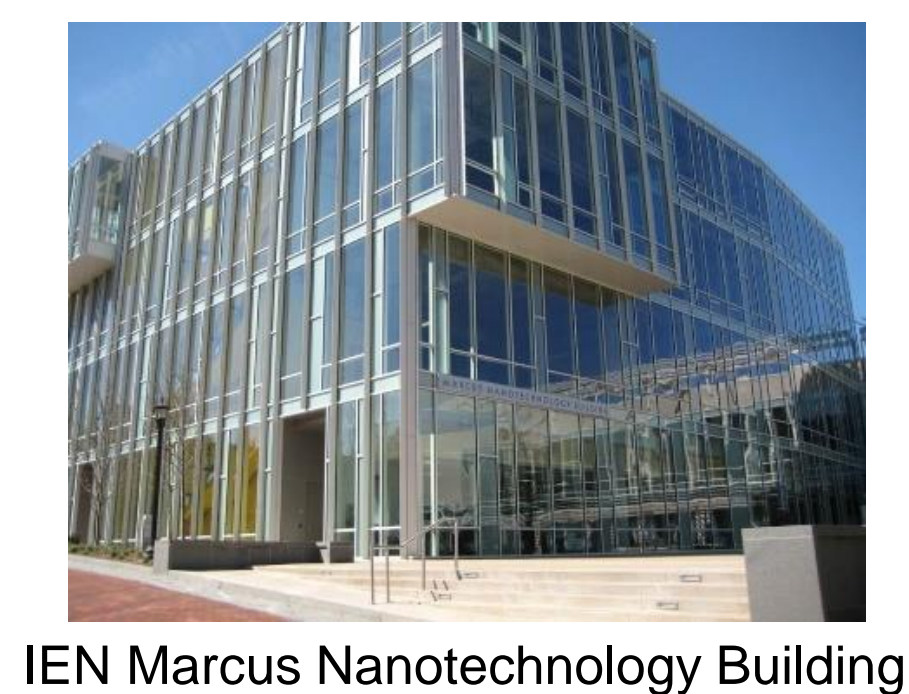
^{2, 3} Joint School of Nanoscience and Nanoengineering

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SENIC Vision and Partnership - <http://senic.gatech.edu>

- Partnership of two major & modern nanotechnology centers in the southeastern USA
 - Institute for Electronics and Nanotechnology (IEN), an Interdisciplinary Research Institute & NNIN site at the Georgia Institute of Technology (GT)
 - Joint School of Nanoscience and Nanoengineering (JSNN), an academic collaboration between North Carolina A&T State University (NCA&T) and University of North Carolina, Greensboro (UNCG)
- Innovation:** Strengthen and accelerate discovery in nanoscience and nanoengineering across the southeastern USA
- Commercialization:** Allow nanotechnology-based innovations to reach the market quicker
- Education/Outreach/SEI:** Provide education, outreach and SEI programs in nanotechnology with a focus on the southeastern US



- Oliver Brand, PI, GT-IEN Director
- David Gottfried, GT-IEN Deputy Director
- Daniel Herr, Co-PI, JSNN Director
- Shyam Aravamudhan, Co-PI, JSNN Deputy Director

Extended Capabilities

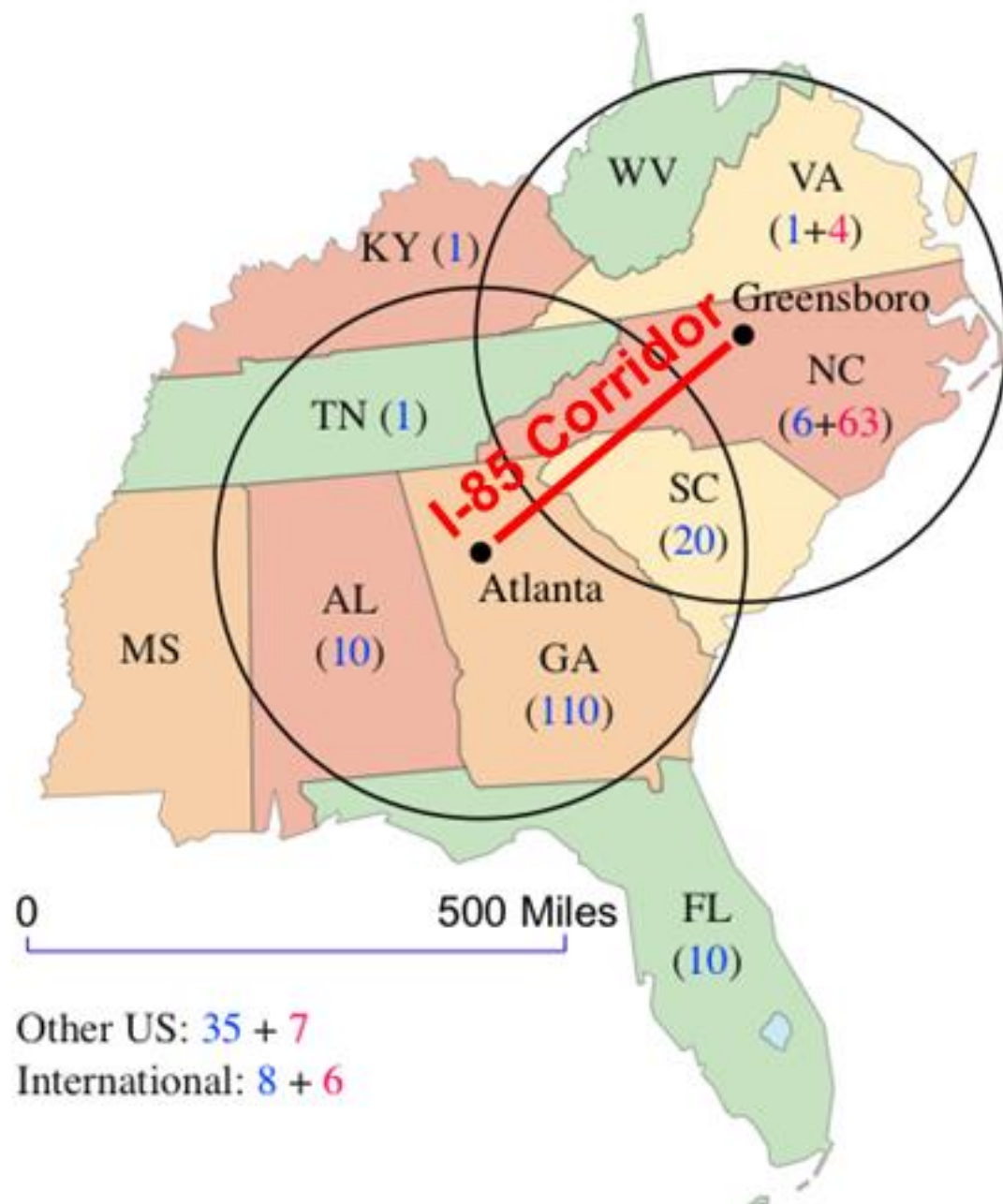
- Broad access to top-down and bottom-up nanofabrication
- Up to 200 mm wafer and 300 mm panel substrate capabilities
- Extended characterization capabilities

Geographical Coverage

- Extending SE coverage through Carolinas and Virginias
- Serving a diverse community
- Partnering with top producers of minority and women scientists and engineers

Range of Industries

- Traditional southeastern industries (textile, agriculture, paper)
- New southeastern high-tech industries (energy, bio, automotive, aerospace)



SENIC Shared-User Facilities, Benefits and Initiatives

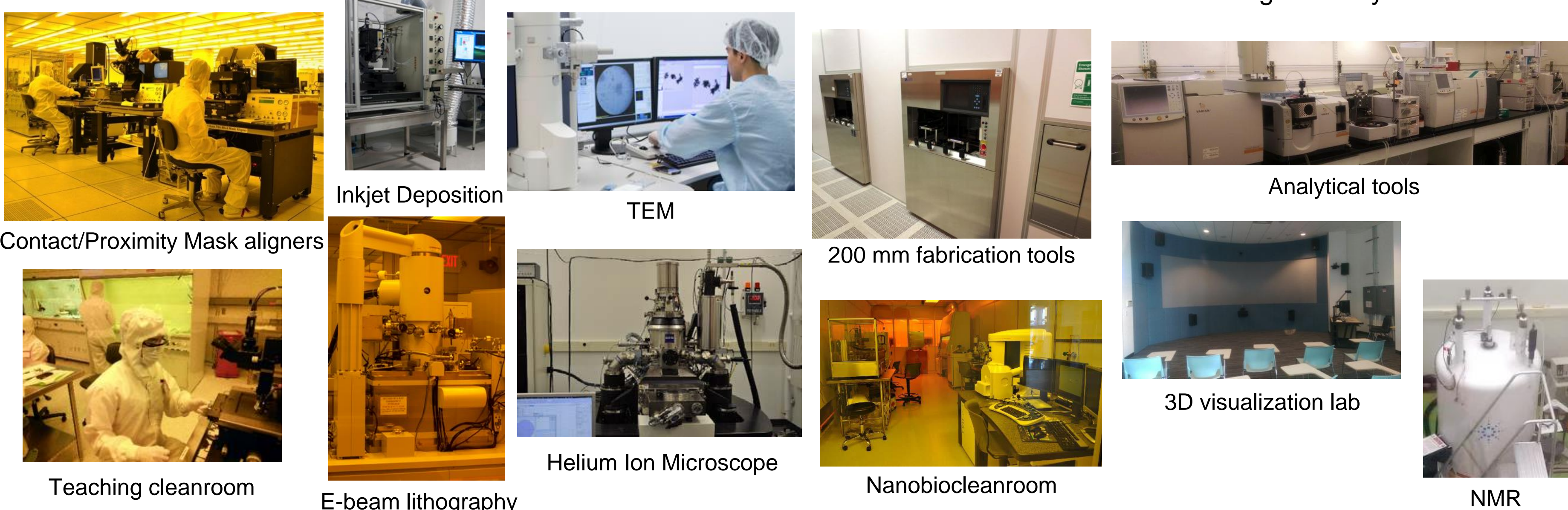
	GT-IEN	JSNN
Cleanroom Area	28,500 sq. ft.	8,000 sq. ft.
# Fab/Charac Tools	200+	30+
Wafer Sizes	100 mm (some 150 mm) 300 mm panels (packaging)	200 mm
Technical Staff Support	30	9
Facility Strength	<ul style="list-style-type: none"> Broad top-down micro/nanofabrication Patterning down to <10nm Packaging facility Teaching cleanroom 	<ul style="list-style-type: none"> Bottom-up material synthesis 200 mm wafer processing He-Ion imaging/nanofabrication High-Performance Computing Facility
Capabilities for Users from Non-traditional Disciplines	<ul style="list-style-type: none"> Nanomaterial dep./growth Organic/bio cleanroom Laser machining Imaging & surf. metrology 	<ul style="list-style-type: none"> Nanomaterial synthesis Analytical chemistry lab BSL-3 lab Material testing lab

User Benefits

- Single facility with 2 locations
- Added capabilities
- Common safety training & orientation
- Single agreement and billing

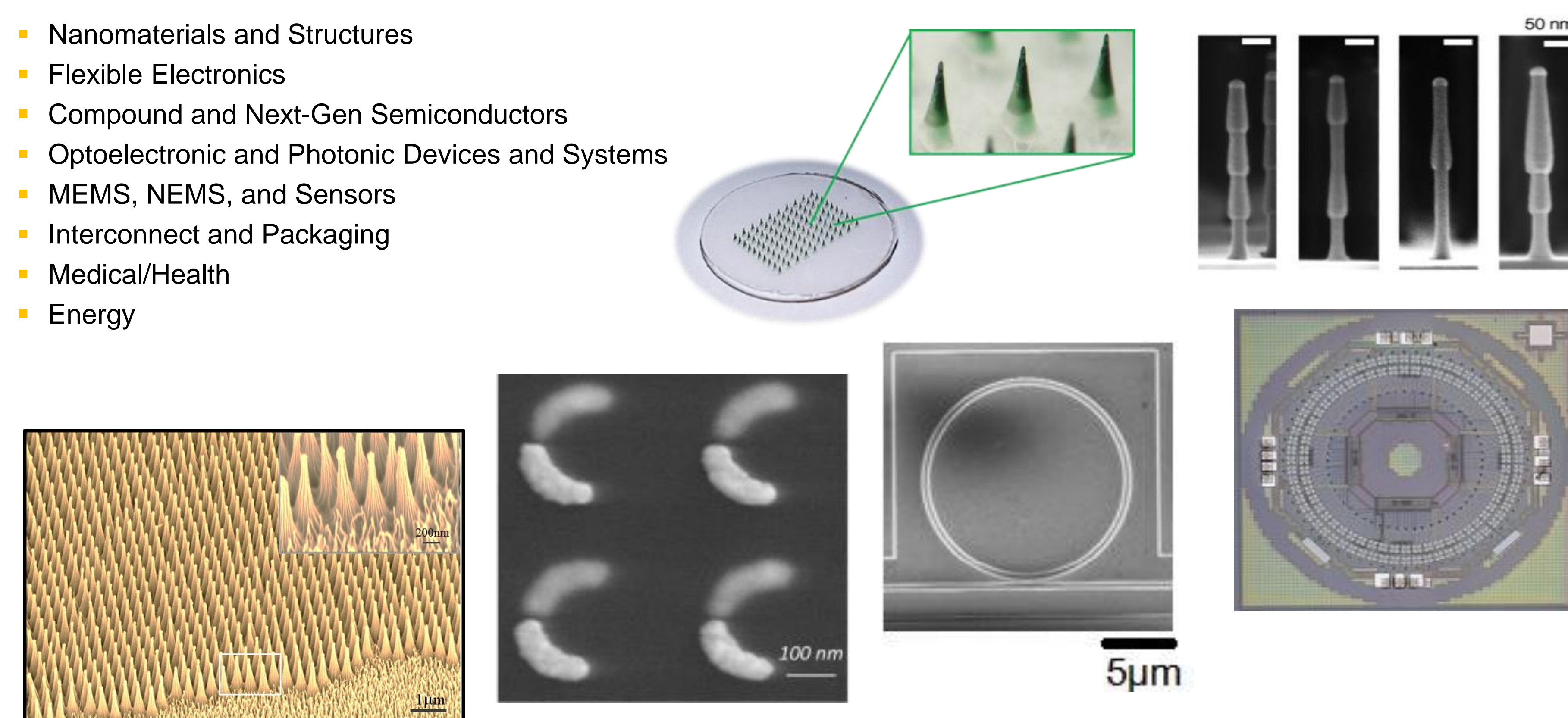
Partnership Initiatives

- Joint staff meetings and staff exchanges
- Joint user outreach, meetings, vendor workshops & conferences
- Joint education and outreach programs
- Joint seed grant program
- Coordination in equipment acquisition
- Common user management system



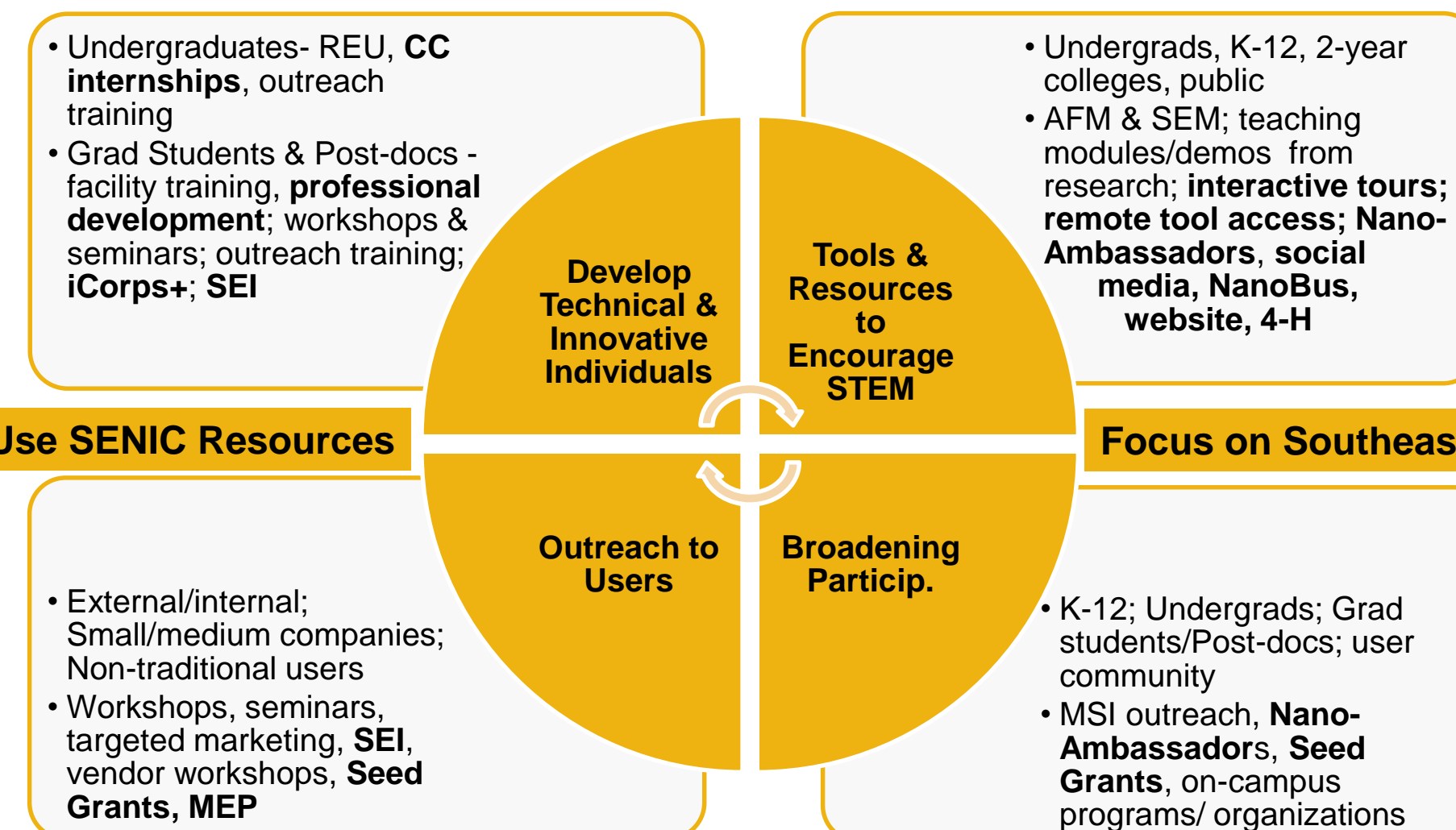
Principal Research Areas

- Nanomaterials and Structures
- Flexible Electronics
- Compound and Next-Gen Semiconductors
- Optoelectronic and Photonic Devices and Systems
- MEMS, NEMS, and Sensors
- Interconnect and Packaging
- Medical/Health
- Energy



Materials • Processes • Devices • Systems & Applications

Education, Outreach & Dissemination



- Nancy Healy, GT-IEN Education and Outreach (E/O) Director
- Joseph Graves Jr., JSNN E/O and SEI Director

Social and Ethical Implications in SENIC

- Jan Youtie, GT-IEN SEI Director
- I-Corps Plus: add a social and ethical implications module
- Nano-Informatics User Infrastructure: briefings, training, hosting visitors
- Education and Training: presentations, workshops, advising doctoral minors

