

# ***NNCI: Southeastern Nanotechnology Infrastructure Corridor (SENIC)***

## **6th NNCI Annual Conference**



JSNN

Joint School of Nanoscience and Nanoengineering

North Carolina Agricultural and Technical State University  
University of North Carolina at Greensboro



Georgia Tech Institute for Electronics and Nanotechnology

# SENIC: 3 Universities – 2 Locations – 1 Site

Partnership of two major & modern nanotechnology centers in the southeastern US:

- **Institute for Electronics and Nanotechnology (IEN)**, an Interdisciplinary Research Institute 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)



*GT-IEN Marcus Nanotechnology Building*

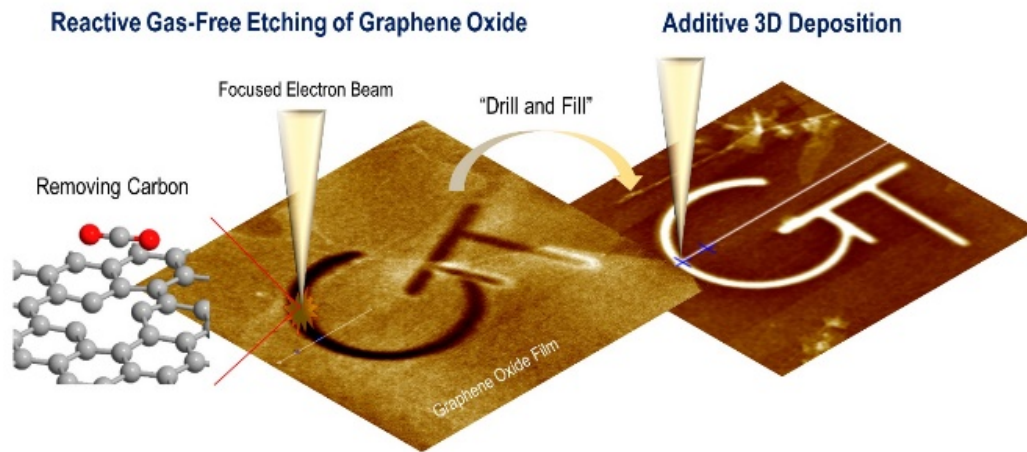


*JSNN Building*

# What impactful research emerged from your site during Year 6?

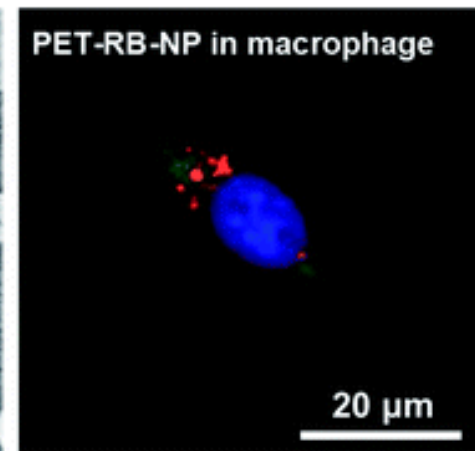
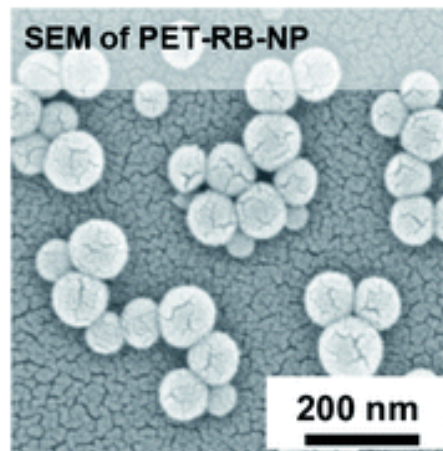
## E-Beam Process for Quantum Nanodevices

GT Mechanical Engineering using GT-IEN



## PET Nanoparticles with Fluorescent Tracers for Studies in Mammalian Cells

RTI International using JSNN



# Economic Impact Analysis

Interviews and analysis of 13 Georgia-based companies who used GT-IEN modeled using IMPLAN for State of Georgia (Jan Youtie and Alfie Meek)

	EMPLOYMENT	INCOME	VALUE ADDED (GDP)	OUTPUT
DIRECT	111	\$9.5M	\$12.6M	\$24.3M
INDIRECT	80	\$4.8M	\$7.5M	\$13.9M
INDUCED	84	\$4.0M	\$7.6M	\$13.1M
<b>TOTAL IMPACT</b>	<b>275</b>	<b>\$18.3M</b>	<b>\$27.7M</b>	<b>\$51.2M</b>

## Non-Monetized Impacts (besides jobs supported or cost savings):

- Time savings
- Access 24/7
- Control of the process (sample custody)

# Scholarly Publications Impact



Sergio Pelaez, Jan Youtie, and Philip Shapira

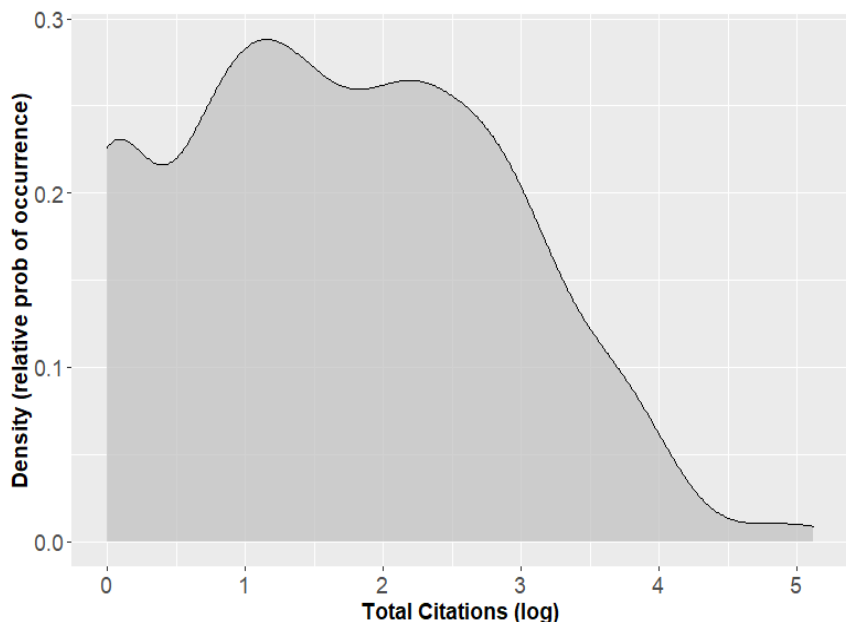
Georgia Tech Program in Science and Technology Policy

Identification of publications in Web of Science (2016 - March 2021) citing NSF award number

- 444 papers
- 1,427 authors
- 3,446 citations
- 14,810 downloads

# Publications: Citations, Downloads, Journals

- SENIC articles are highly cited compared with “nanotechnology” field: Mean (7.9 vs 4.7) and Median (3 vs 2).
- The top 10% of the publications account for 52% of total citations.
- Usage count from WoS: mean=33, median=18, max=490.

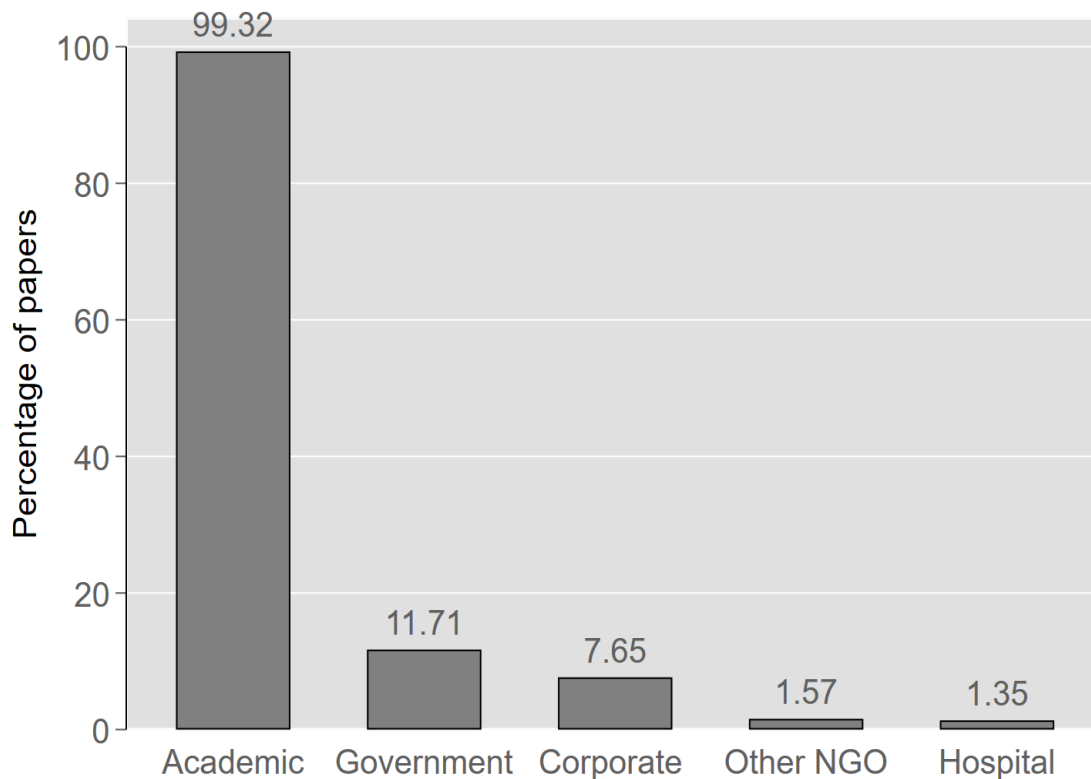


Publication Name	Two-year Journal Impact Factor (2019)
ACS Applied Materials & Interfaces	8.758
ACS Nano	14.588
Chemistry of Materials	9.567
Applied Physics Letters	3.597
Angewandte Chemie-International Edition	12.959
Chemnanomat	3.384
Journal of Materials Chemistry A	11.301
Journal of Physical Chemistry C	4.189
Nano Letters	11.238
Nanotechnology	3.551

# Publications: Collaboration

On average:

- 5-6 authors/paper
- 2 organizations/paper
- 28% of papers have international author
- 12% of publications have at least one government author.
- 8% of publications have at least one corporate author.



# Publications: Disciplines

<b>Web of Science Categories</b>	<b># Records</b>	<b>% of total</b>
Materials Science, Multidisciplinary	181	17.1%
Nanoscience & Nanotechnology	140	13.2%
Chemistry, Multidisciplinary	93	8.8%
Chemistry, Physical	92	8.7%
Physics, Applied	90	8.5%
Engineering, Electrical & Electronic	55	5.2%

- Out of 75 WoS categories, these 6 account for 62% of total records.
- Network and map of science analysis shows traditional and nontraditional fields and identifies 3 community networks.



# Thank You!

<http://www.nnci.net>

<http://senic.gatech.edu>

<http://www.iem.gatech.edu>

<http://jsnn.ncat.uncg.edu>



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