

# MASH Mission & Scope

MASH will support the CHIPS and Science Act to enhance America's strength in semiconductors and microelectronics and promote economic development.

The goal of MASH is to create the world's largest nanofabrication, packaging, and characterization facility by linking and enhancing the facilities in the region. The MASH "distributed" network of facilities will support technology transition to manufacturing and offer redundancy of resources and immediate access to a huge amount of technical expertise in semiconductors.

MASH will focus on helping the semiconductor industry to transition materials into systems, which is a critical industrial need of many emerging applications such as advanced communications, non-volatile memory, More than Moore devices, Industrial Internet of Things, artificial intelligence, edge computing, wireless communications, quantum devices, environmental sustainability, and materials and substrates.

MASH activities will center around three cross-cutting areas: Si-adjacent technologies, advanced packaging, and virtualization of semiconductor processes.

MASH will develop skills-based educational and workforce development plans to provide companies with an agile system to meet staffing requirements, and at the same time, enhance racial and socioeconomic diversity.

MASH will be a hub for regional and national activities to promote professional education and training, educate the public on semiconductors and microelectronics, share and coordinate materials standards, identify funding opportunities, and build networks and technology road maps.





# NYU

# FACILITIES



## NANOFAB: cleanroom

### NANOFAB CLEANROOM

The Nanofab Cleanroom comprises over 2,500-square feet of class 100 and 1,000 cleanroom space, with a host of advanced micro/nano fabrication tools, spanning the areas of lithography, etch, deposition, and metrology with capabilities to support processing from pieces to 8” wafers. The Nanofab has state-of-the-art capabilities that are unique in NYC area—such as atomic layer etch (ALE) of compound semiconductors; ion beam etch of magnetic materials with SIMS endpoint; and plasma-enhanced atomic layer deposition (PE-ALD)—enabling faculty to conduct cutting edge research in the area of AI and quantum hardware technologies..

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## CENTER: cybersecurity

### THE NYU CENTER FOR CYBERSECURITY

The NYU Center for Cybersecurity is an interdisciplinary academic and research institute dedicated to training the current and future generations of professionals while also shaping public discourse and policy decisions with both its leading-edge research and scholarship. The Center focuses on both meaningful real-world technology and conducts cutting-edge research into this all-important sector that impacts all of us. Since its founding, the Center has pioneered many secure AI hardware devices and monitors.

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## MAKERSPACE: prototyping

### THE NYU TANDON MAKERSPACE

The NYU Tandon MakerSpace is a cutting-edge lab created to foster collaborative design projects. It features rapid prototyping and PCB production equipment, as well as advanced machining and testing capabilities. The MakerSpace is designed to support and encourage project-based learning at all levels and provides training and workshops on machine usage, prototyping skills, and design.

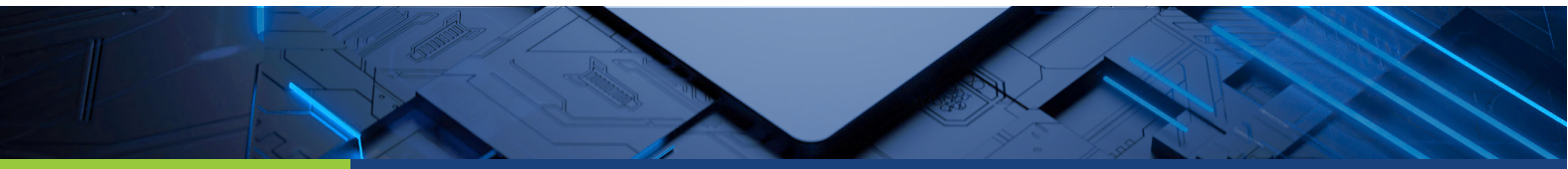
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## WIRELESS: research portfolio

### THE NYU WIRELESS





The NYU Wireless research portfolio involves nearly 100 faculty and graduate students, and is continually working on a wide range of fundamental problems in the development of next generation wireless technologies — from basic devices, to fundamental knowledge of channels and systems, to the key issues facing networks, security, and applications. Key areas of research include terahertz communications and sensing; mobile edge networking and computing; millimeter wave (mmWave); terahertz (THz); and quantum nanodevices and circuits; 5G and 6G applications (such as robotics, UAVs, autonomous vehicles); machine learning; communication foundations; and 6G testbeds. NYU WIRELESS has a large industrial affiliate program with connections to many companies and start-ups that can use semiconductor manufacturing capabilities.

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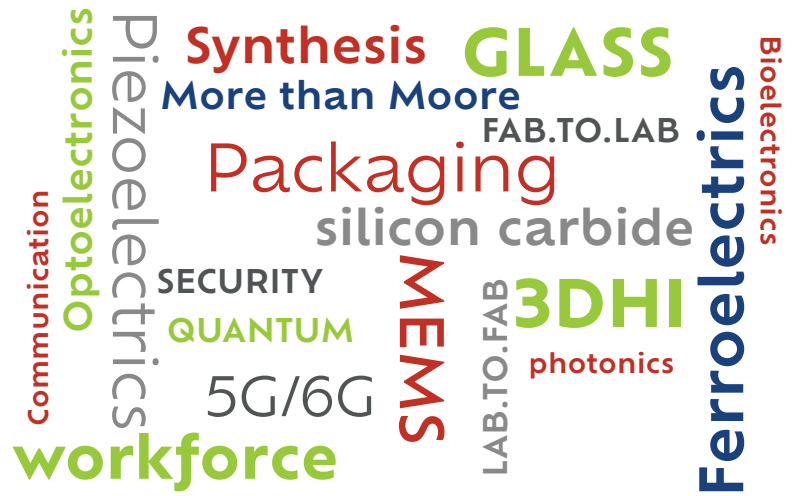


Communication  
 Optoelectronics  
 Piezoelectrics  
**workforce**  
**Synthesis**  
 More than Moore  
**GLASS**  
 FAB.TO.LAB  
**Packaging**  
 silicon carbide  
 SECURITY  
 QUANTUM  
 5G/6G  
**MEMS**  
 LAB.TO.FAB  
**3DHI**  
 photonics  
**Ferroelectrics**  
 Bioelectronics

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# MASH

Mid-Atlantic SEMICONDUCTOR

# HUB

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Partnering for a Strong American Semiconductor Future