

 COLUMBIA | NANO INITIATIVE

ONENANO MID-ATLANTIC CHAPTER

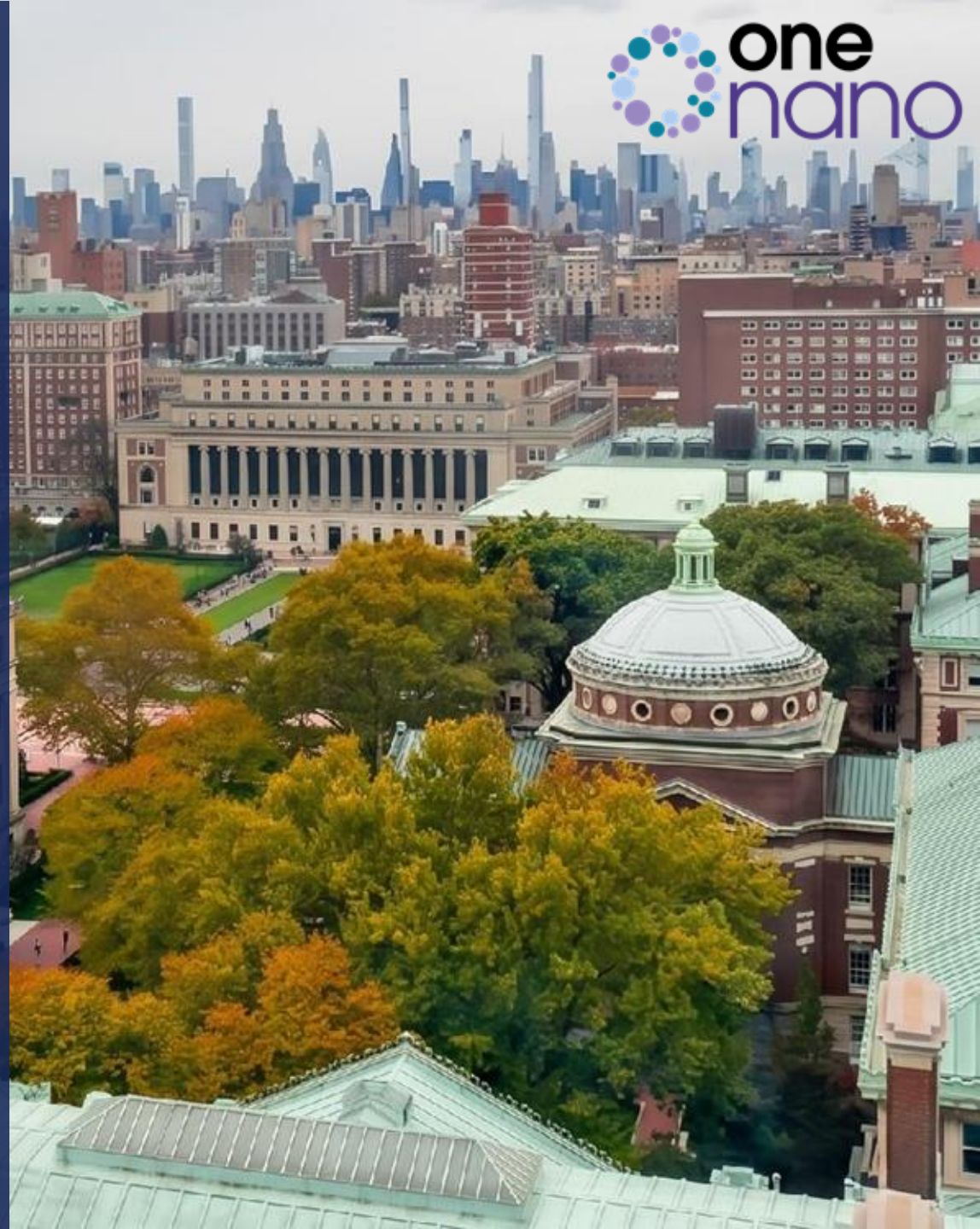
Welcome to Columbia

“Meredith” Meeting, Fall 2026

Friday, October 2, 2026

The World Room, Pulitzer Hall

Sponsored by



A regional network for the people who run our labs

WELCOME



OneNano members at the previous meeting, hosted by Princeton

- Grew out of the Mid-Atlantic Nanofab Managers' Meeting
- Connects nanofab and characterization facility professionals
- Shares best practices and works through common challenges

THE NEXT 15 MINUTES

01

Shared facilities

02

A short history

03

Today's agenda

A special thanks to our sponsor!

WELCOME



Brian Reynolds
Sales Manager

Yusuke Higuchi
Overseas Sales Engineer

The people steering OneNano and our chapter

ONENANO LEADERSHIP

ONENANO OFFICERS



PRESIDENT

**Gerald G. Lopez,
Ph.D.**

Associate Director and
Director of Operations,
Singh Center for
Nanotechnology

University of
Pennsylvania



VICE PRESIDENT

Eric Johnston

Director, Quattrone
Nanofabrication Facility

University of
Pennsylvania



SECRETARY

**Chad Eichfeld,
Ph.D.**

Director of Operations,
Penn State
Nanofabrication
Laboratory

Penn State University

MID-ATLANTIC CHAPTER EXECUTIVE COMMITTEE



CHAIR

Daniel Woodie

Director,
Micro/Nanofabrication
Center, Princeton
Materials Institute

Princeton University



VICE-CHAIR

**A. Jasper
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Technical Lab
Manager, Georgetown
Nanoscience and
Microtechnology Lab

Georgetown University



SECRETARY

**Matthew T.
Moneck, Ph.D.**

Executive Director,
Bertucci
Nanotechnology
Laboratory

Carnegie Mellon
University

Southeast Chapter



Amelia Dempere, Ph.D.
Chapter Chair



Eric Carlson, Ph.D.
Chapter Vice-Chair



Devin Brown, Ph.D.
Chapter Secretary

Midwest Chapter



Vishva Ray, Ph.D.
Chapter Chair



Nicole Pfister, Ph.D.
Chapter Vice-Chair



Serkan Butun, Ph.D.
Chapter Secretary

SoCal Chapter



Guy DeRose, Ph.D.
Chapter Chair



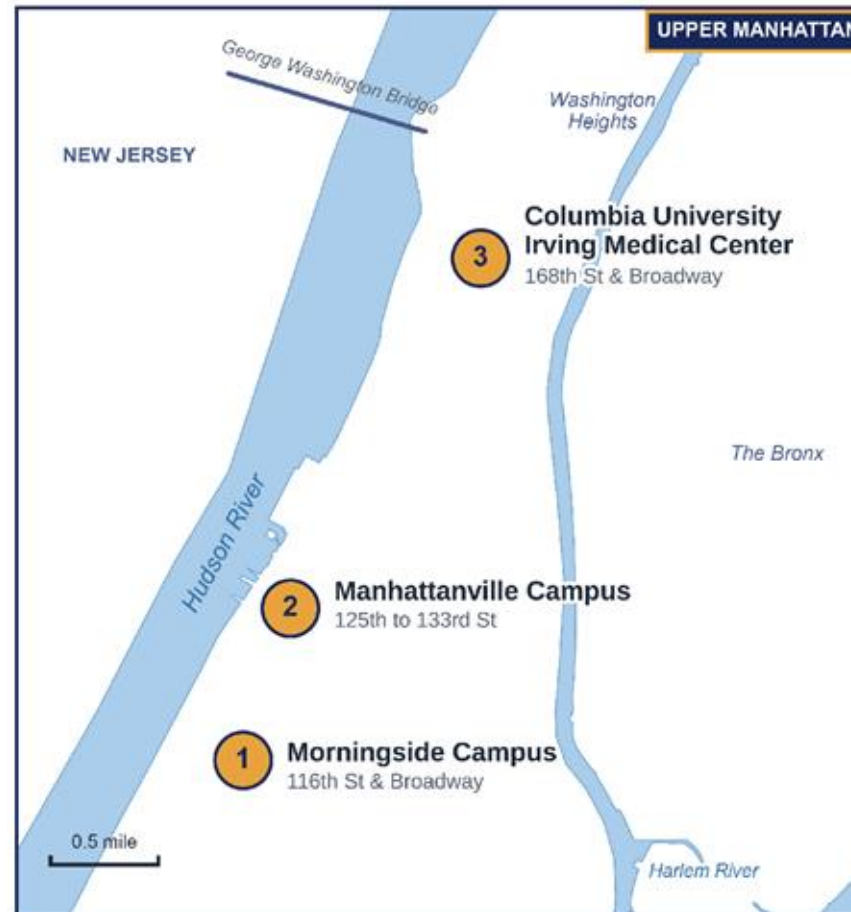
Brian Thibeault, Ph.D.
Chapter Vice-Chair



Shiva Bhaskaran, Ph.D.
Chapter Secretary

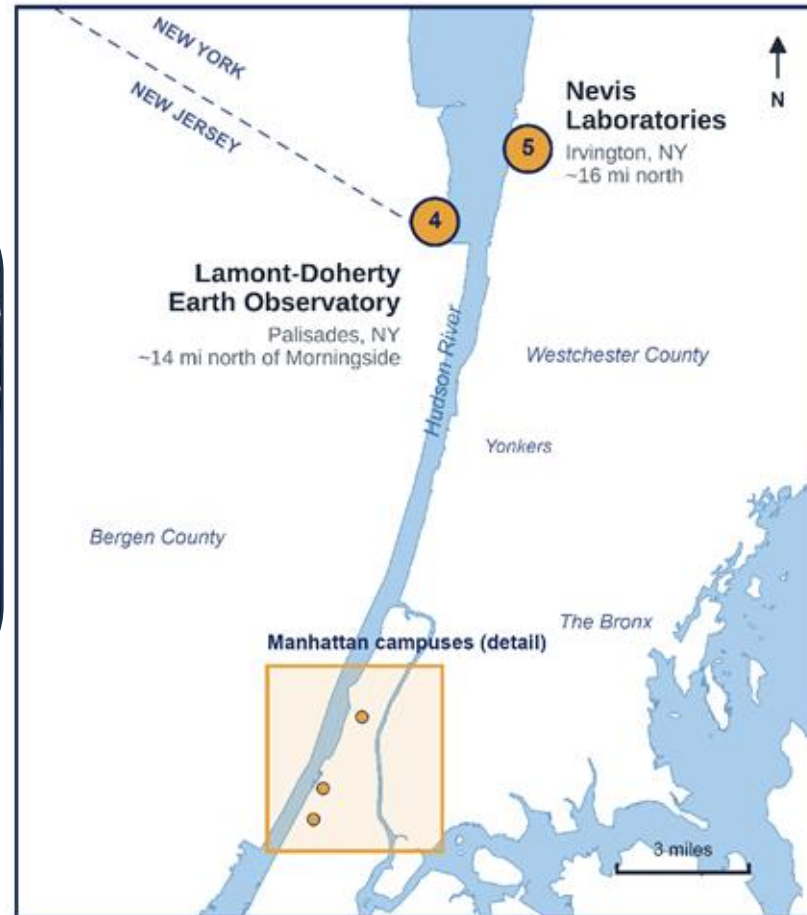
Five Columbia sites along a 16-mile stretch of the Hudson

01 SHARED FACILITIES



Five Columbia sites along a 16-mile stretch of the Hudson

01 SHARED FACILITIES



01 SHARED FACILITIES



Three shared labs serve Columbia and outside users

SHARED FACILITIES

CNI Shared Labs sit on Columbia's Morningside campus and are open to academic, startup, and industry researchers.



Nanofabrication Cleanroom

- ~5,000 ft², Class 1,000/10,000
- Photo and e-beam lithography
- Deposition, wet and dry etch
- Chip-scale to 150 mm



Shared Materials Characterization Lab

- XRD, SCXRD, and AFM
- Optical and thermal analysis
- Colloids and polymers
- 2D material processing



Electron Microscopy Lab

- S/TEM: FEI Talos F200X
- SEMs with EDS and EBSD
- ASTAR orientation mapping
- Full sample preparation

The team behind the CNI Shared Labs

CNI LABS STAFF

LEADERSHIP



Jacob Trevino, PhD

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Luca Telesca, PhD

SMCL Director
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Amirali Zangiabadi, PhD

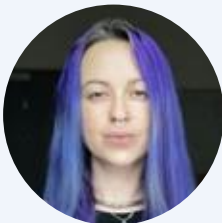
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Cleanroom Director
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CLEANROOM ENGINEERING



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Dhan Cardinal

Cleanroom Engineer
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By the numbers: a busy, growing user community

SHARED FACILITIES

223

lab users in FY25

18,477

hours of lab work in
FY25

78

research groups in
FY25

45

instruments in the
cleanroom

1992

cleanroom first built

\$20M

expansion and
renovation, 2017



Supported by a team of 8 lab staff plus CNI administrative support

Recent investments keep the facility current

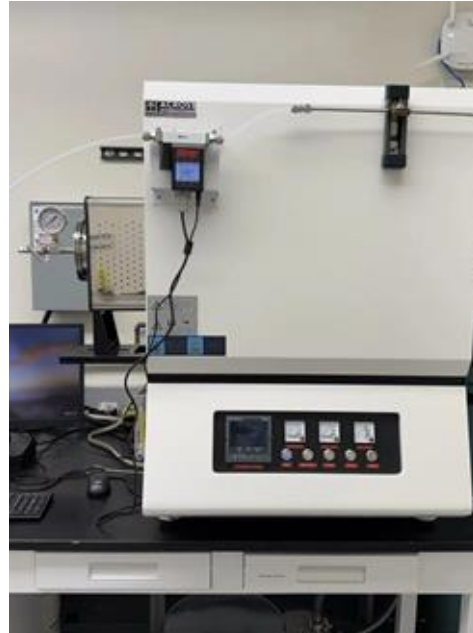
SHARED FACILITIES

NEW TOOLS, LAST 24 MONTHS



**Elionix ELS-BODEN
50F**

E-beam lithography, 2025



**Across International
TF17000**

Tube furnace, 2025



Samco PD-220NL

PECVD, 2026

NEW DIGITAL INFRASTRUCTURE



NEMO

Replaced Badger, April 2026

First Hydra page, linking the UPenn and CNI NEMO instances



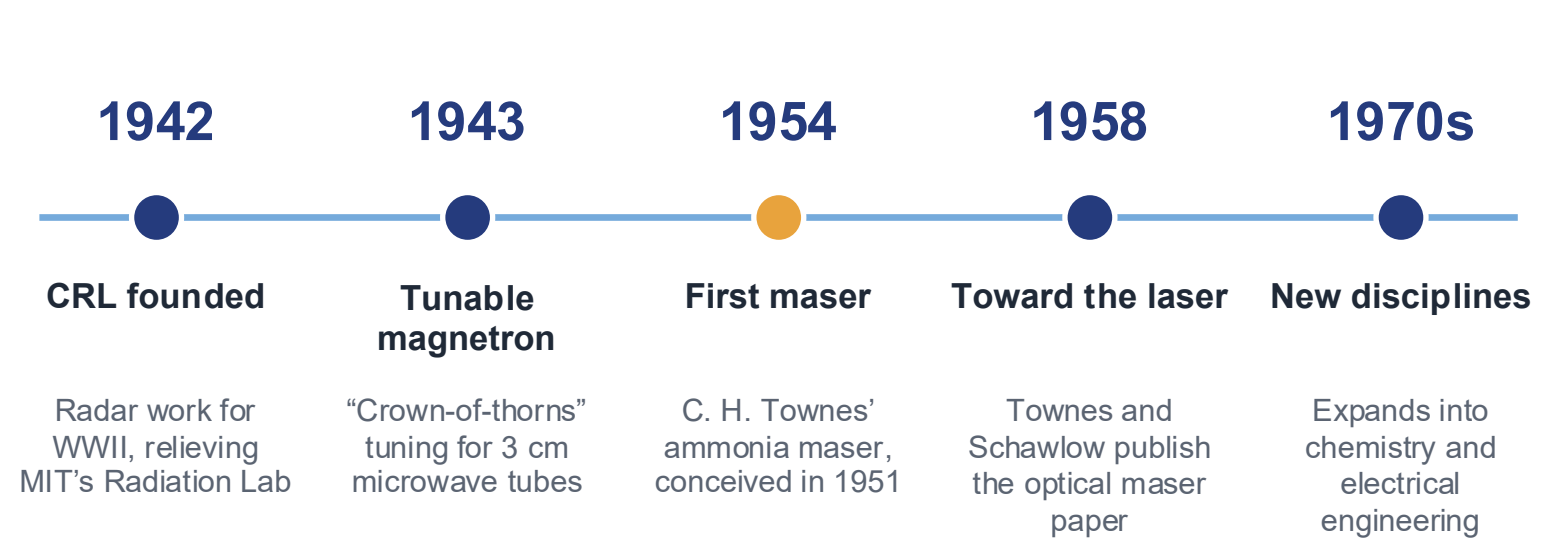
CNI facility portal

Tied to NEMO for accurate, real-time tool and process information

Our roots: from wartime radar to the maser

A SHORT HISTORY

CNI traces its lineage to the Columbia Radiation Laboratory (CRL), founded March 1, 1942 under Prof. I. I. Rabi.



The 1964 Nobel Prize in Physics went to Townes for the work that led to the maser and laser.

6	Nobel laureates from CRL	
I. I. Rabi		1944
P. Kusch		1955
W. E. Lamb, Jr.		1955
C. H. Townes		1964
A. A. Penzias		1978
A. L. Schawlow		1981

From CRL to CNI: a home for nanoscience

A SHORT HISTORY



● **1980s–90s**

CRL grows under Profs. Richard Osgood and George Flynn; the cleanroom is built in 1992

● **2001**

Rebranded the Center for Integrated Science and Engineering (CISE)

● **2000s**

NSF NSEC and DOE EFRC centers make Columbia a leader in graphene and 2D materials

● **2015**

Restructured financially and organizationally as the Columbia Nano Initiative

● **2017**

\$20M cleanroom expansion and renovation

Today's agenda: talks, panels, and lab tours

TODAY'S AGENDA

MORNING

8:00 *Coffee & Light Breakfast*

9:00 **Intro**
Jacob Trevino

9:15 **Secure and Automated NEMO Plug-in and File Server Connection**
A. Ahmadi, D. Nallamotheu, G. Jangamredy, H. Mandadi, M. Vats, S. Wu

10:00 **Sponsor Presentation**
Brian Reynolds, STS-Elionix

10:30 *Coffee Break*

11:15 **TEAH as a TMAH Alternative**
Itzayana Gutierrez

11:45 **Building a Lab in the Sky**
James Vichicone

AFTERNOON

12:15 *Group Photo + Lunch*

1:15 **Startup Accelerators Panel Discussion**
J. Trevino, E. Johnston, C. Eichfeld, T. Ezel, R. Burke

1:45 **Quantum Trends and Preparedness Panel**
J. Trevino, D. Woodie, Y. Sun, E. Abalev

2:15 **Future Subjects and Locations**
Jasper Nijdam

2:45 *Wrap-Up*

3:00 **Lab Tours**
CNI Shared Labs

All sessions in The World Room, Pulitzer Hall

Thank you for joining us

Let's get started.

UP NEXT, 9:15 AM

**Secure and Automated NEMO
Plug-in and File Server
Connection**

3:00 PM

Lab tours of the CNI Shared Labs

CONTACT

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Hosting startups in our cleanrooms is a high-wire act

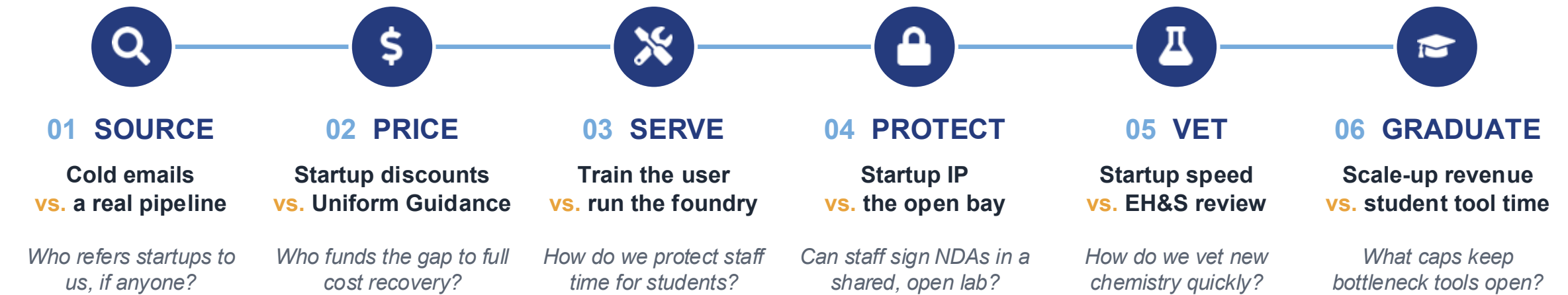
STARTUP ACCELERATORS

THE PUSH
Leadership, tech transfer, and Empire State Development want us to incubate regional startups.



THE LOAD
Facility managers carry the audit exposure, staff bandwidth, safety review, and student access.

A STARTUP'S LIFE IN OUR FACILITY



Jacob Trevino
Senior Director,
Columbia Nano Initiative
Shared Facilities
Columbia University



Tavis Ezell
Business Development
Director, CUNY ASRC
Sensor CAT
CUNY



Eric Johnston
Director, Quattrone
Nanofabrication Facility
University of
Pennsylvania



Rob Burke
Staff Materials
Scientist/Engineer, U.S.
Army Research
Laboratory



Chad Eichfeld
Associate Research
Professor, Nanofab
Director of Operations
Penn State University

Quantum is here. Can the shared cleanroom keep up?

QUANTUM PREPAREDNESS



LEADERSHIP WANTS
High-profile quantum metrics to justify state and federal investment

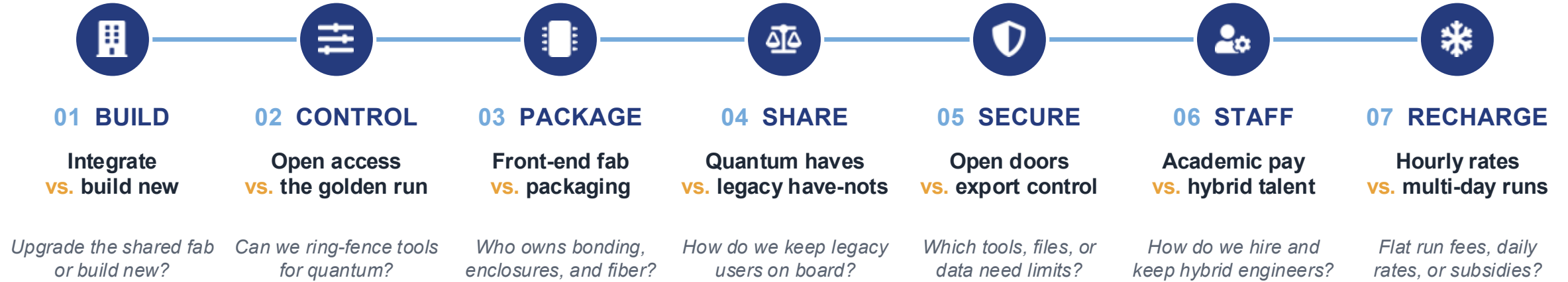


LEGACY USERS WANT
Open access and tool time for MEMS, photonics, 2D, and bio



QUANTUM TEAMS WANT
Locked-down recipes, dedicated metals, and multi-day cryo runs

WHERE QUANTUM MEETS THE SHARED FAB





MODERATOR
Jacob Trevino
Senior Director, Columbia Nano Initiative Shared Facilities
Columbia University



Dan Woodie
Director, Micro/Nano Fabrication Center
Princeton Materials Institute



Yong Sun
PQI Cleanroom Director
Princeton Quantum Initiative



Esta Abelev
Technical Director, Petersen Institute of Nanoscience & Eng.
University of Pittsburgh