

NNCI I&E Core Program Elements – 2023 Update

- Research and **ENTREPRENEURSHIP** Experience for Undergraduates (REEU)
- I&E Seminar Series
- NanoTechnology Entrepreneurship Challenge (NTEC)
 - NTEC Diversity Award
 - NTEC Accelerator Program
- Entrepreneurs-in-Residence (EiR)
- *Stretch Goal: NNCI Innovator's Academy*

NNCI AD Update
10:45-11:45 AM
Huang 300
26 October 2022

Matthew Hull, PhD
NNCI AD, Innovation &
Entrepreneurship
Contact: mahull@vt.edu

I&E Working Group – 14 Sites Represented



Kevin Walsh
KY Multiscale



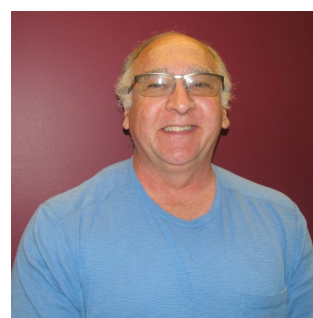
Andy Ligley
MONT



Sara Ostrowski, Daniella Duran
nano@stanford



Jenna Huttenmaier, Steve Wignall
NNF



Kristin Field, Gerald Lopez, Pat Watson
MANTH



Karl F. Böhringer
NNI



Yves Theriault
SDNI



Ying Jia
SHyNE



Ron Olson
CNF



Sherine Obare, Paul Joseph
SENIC



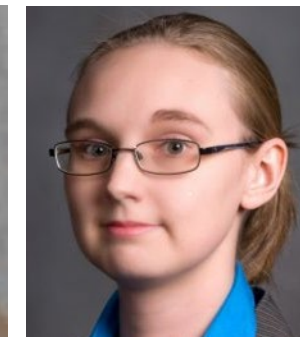
Jessica Hauer
NCI-SW



Mughees Khan
CNS



Phillip Strader
RTNN



Tonya Pruitt
NanoEarth

Want to be involved in the I&E WG?
Contact mahull@vt.edu.

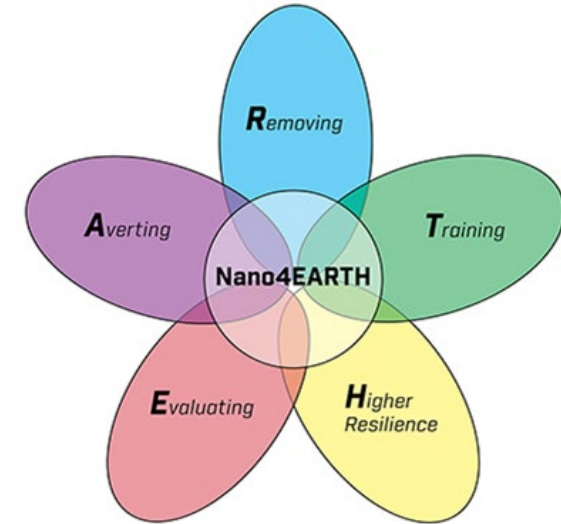
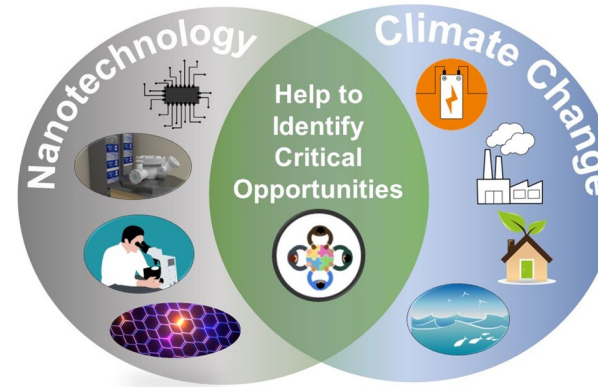


M. Hull, Chair
NanoEarth

Commercialization at NNCI Sites



Annual NNCI Nano + Additive Manufacturing SUMMIT



KY Multiscale: Examples of regional start-ups focused on nano/AM

Nano4EARTH: “National Nanotechnology Challenge to develop technologies and industries that advance the... Administration’s commitment to tackling the climate crisis” in < 4 Years - White House OSTP (1/26/23)

CNF: 2023 NNN Symposium @ Univ. at Albany
“Advances in the Semiconductor Industry”
4/25/23



UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

2023 New York State Nanotechnology Network (NNN) Symposium
“Advances in the Semiconductor Industry” • Tuesday, April 25th, 2023



I&E Seminar



NNCI Innovation and Entrepreneurship Webinar

May 3, 2023 | 4:00 p.m. - 5:00 p.m. ET

Karin Lion
Chief Growth Officer
Activate

Austin Hickman
CEO, Soctera | Activate Fellow

Hannah Murmen
Managing Director
Activate Anywhere

Our Results

The Activate Fellowship works.

Since 2015, our **142 Activate Fellows** have created **106 science-based companies**, some of which will go on to change the world.

\$1.3B
in follow-on
funding

\$5.7M average follow-on-funding cohort companies raised during fellowship

29x leverage on every dollar spent to support the fellowships

>1250 new jobs created in the U.S. by Activate Fellows

\$32.4M in total revenue earned by Activate companies



SELECT ACTIVATE FELLOWS

[NNCI YouTube Channel](#) or



- 4 seminars 2021-2023
- Sites host (NNI, MONT, SENIC)

2021-2023 REEU Participation



KY MULTISCALE

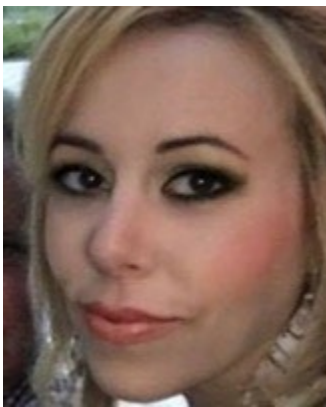
Mid-Atlantic Nanotechnology Hub (MANTH)



SINGH
Center for Nanotechnology



Yves Theriault
SDNI



Ana S. Galiano
KY Multiscale



Kristin Field
MANTH



Jessica Hauer
NCI-SW



Leslie O'Neill
SENIC



Jenna Huttenmaier, Steve Wignall
NNF

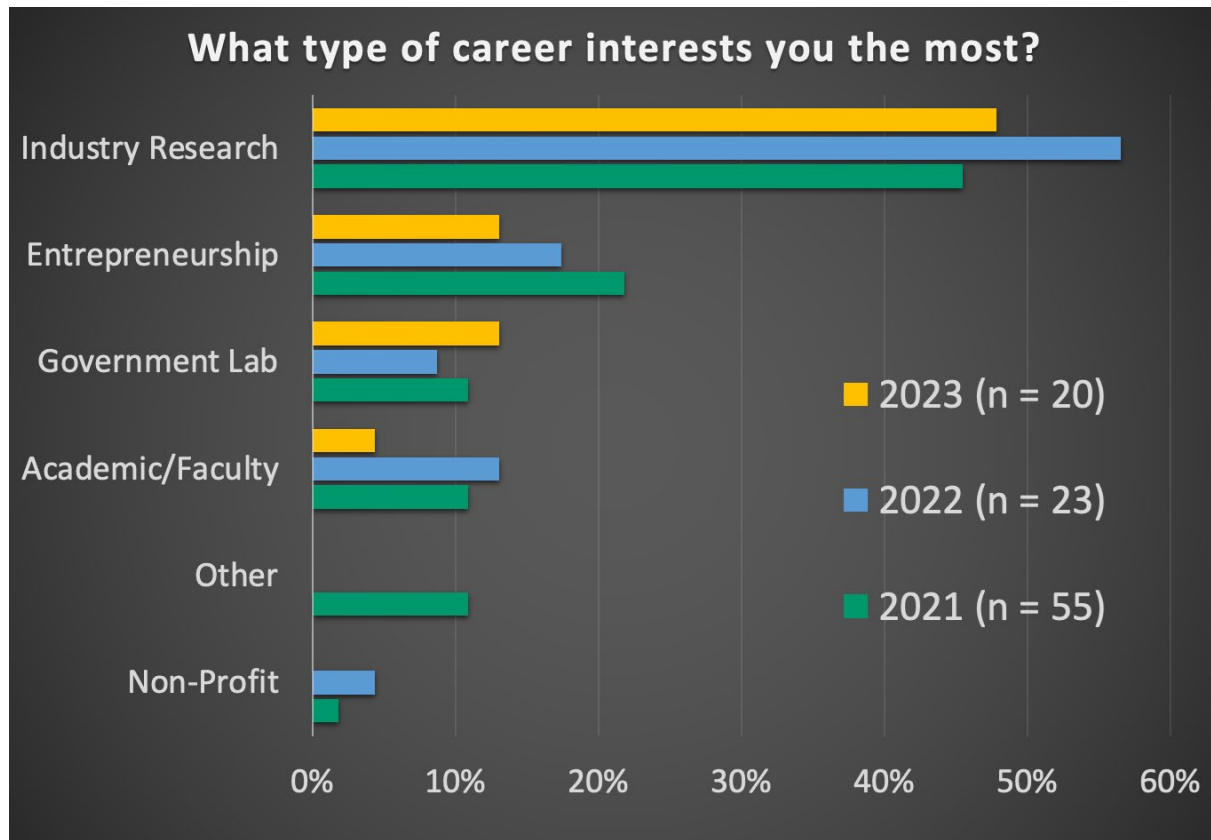


Heather Rauser
MONT

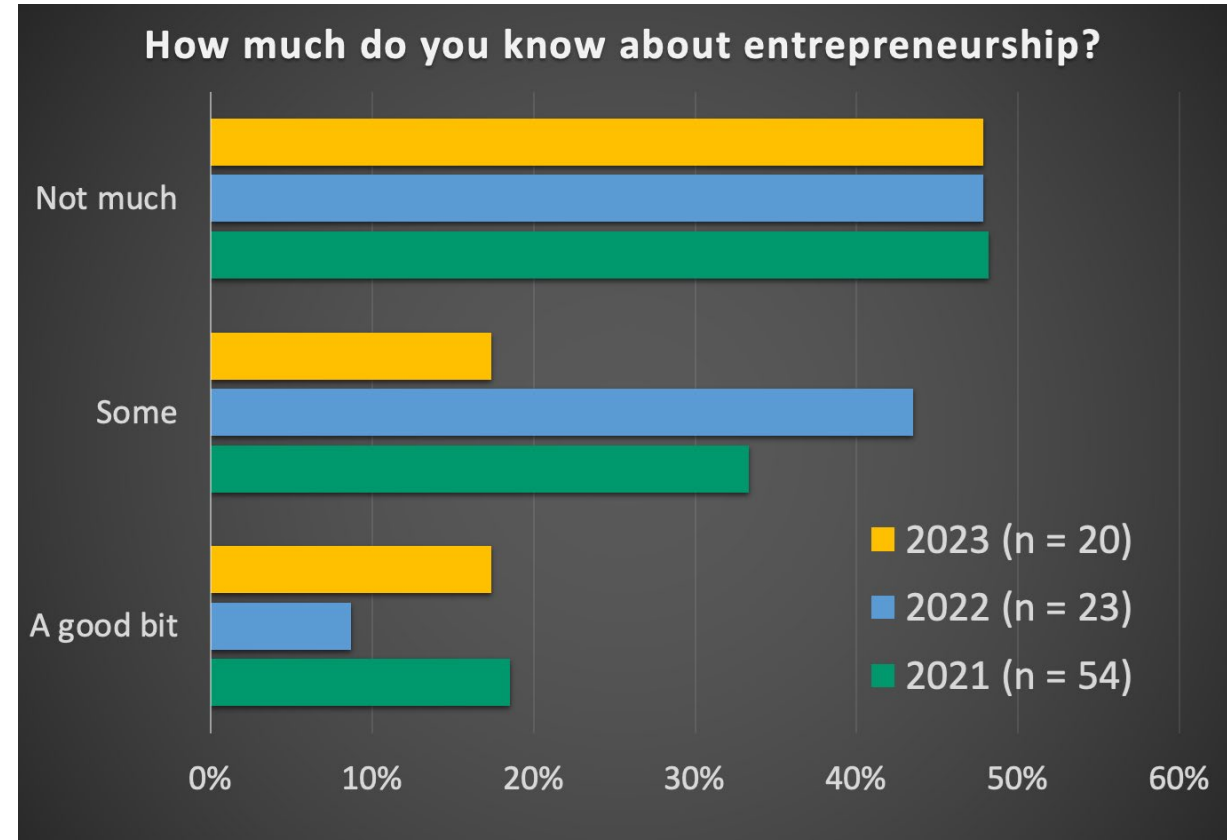


8 sites and 98 REU students engaged 2021-2023

REEU Participant Feedback (2021-2023)



Industry research is top career interest, entrepreneurship remains high...



...half don't know much about entrepreneurship

REU Convocation Entrepreneurship & Innovation Panel



Moderated by Trevor Huffmaster, MHA
Executive Director, Blackstone LaunchPad
Montana State University



- What is your journey within I&E?
- What opportunities for students are out there?
- Hurdles you've faced?
- How did you get from undergrad to where you are now?
- What do you wish you knew before you started?

SEI meets I&E

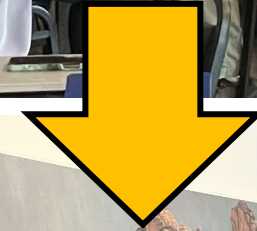
“Pain to Pitch 180” at ASU Winter School



180 minutes: identify a “pain point” □
pitch a business concept



Some prompts...but let your imagination run wild!



Congratulations to our 2023 NNCI NTEC Awardees!

Team #	Student Lead(s)	NNCI Site	Award Type	Mentor(s)	NTEC Title
35	Hunter Holden	SENIC (JSNN)	Diversity (\$1000)	Dr. Dennis LaJeunesse	Structural bacterial cellulose
36	Victor Mukora	NanoEarth	Regular (\$500)	Dr. Anne Brown	Applications of real-time machine learning to solar energy
37	Trayda Murakami	NanoEarth	Regular (\$500)	Dr. Matthew Hull, Ms. Tonya Pruitt	Women in NanoEARTH
38	Naimat K. Bari	NanoEarth	Regular (\$500)	Dr. Bahareh Behkam	Nanofibrous living materials for pathogen detection
39	Mayuk Sengupta	NanoEarth	Regular (\$500)	Dr. Marc Michel	Non-lethal ceramic/crystal tipped bullets
40	Micheal Erb	NanoEarth	Regular (\$500)	Dr. Marc Michel	Chemical upcycling of polystyrene waste in aryl ketones
41	Charlie Ver Beek	NanoEarth	Regular (\$500)	Dr. Craig Tollin	The effect of organic dye used in an organic photovoltaic cell on efficiency
	Chloe Nyhart	NanoEarth			
42	Cade Toth	NanoEarth	Regular (\$500)	Dr. Marc Michel	Characterization of natural iridescent iron oxyhydroxide from Graves Mountain, Georgia
43	Haoxuan (Angelo) Lyu	MANTH	Regular (\$500)	Prof. Marc G. Allen	
44	Ivonne Gonzalez Gamboa	SDNI (UC San Diego)	Diversity (\$1000)	Dr. Yves Theriault, Dr. Nic	

- 6 sites to date
- 26 students, 18 teams
- Half with diverse leadership



Stanford | nano@stanford





Chuck McKee

NTEC Success begins at Kick-off!

Top NTEC Teams – 2023

sdni
San Diego Nanotechnology Infrastructure



SENIC | Southeastern
Nanotechnology
Infrastructure
Corridor

NanoEarth



**National Nanotechnology
Coordinated Infrastructure**



Left: Hunter Holden (lead)
Center: Top Overall Winner UCSD Ivonne González-Gamboa, Dr. Yves Theriault (advisor), Manuel Martinez (industry advisor)
Right: Amrinder Nain and Bahareh Behkam (faculty advisors), Naimat Bari (lead)

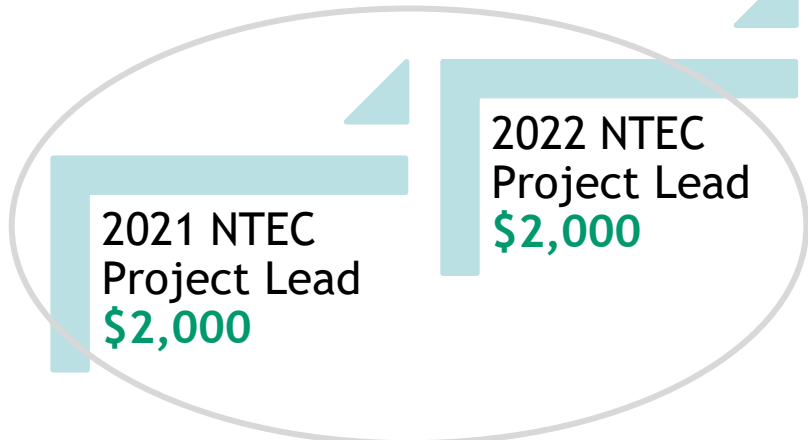
2023 NTEC Showcase Top Team Overall and Diversity Award



NTEC Path – Create “Translational” Momentum for Users



Aditya Garg
PhD Student
Virginia Tech



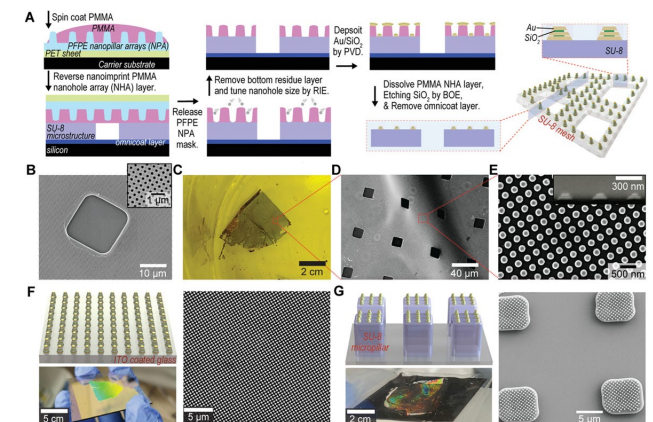
NNCI

Local

Regional

National

Nanoplasmonic SERS Meshes for environmental monitoring



NNCI NTEC – Looking Ahead to 2024

ANNOUNCE: January 9th

DUE: February 11th National Inventor's Day

NNCI CO Announces
Call for NTEC
Applications

NNCI Nodes
Distribute Call
NEW IN 2024

NNCI CO Receives
Applications &
Distributes to I&E

REVIEW: February 12th

NODE'S FINAL SAY: February 29st

\$20k in CO Resources Available for Distribution to NTEC Teams

- \$1,000 for eligible expenses
- \$4,000 for winning team(s)

NNCI I&E WG Reviews
Applications with
Top Applicants

I&E WG Shares Top
Applicants with
Nodes

Nodes have Final Say
on which Projects to
Support at their Nodes
Based on Resources

March 4th

Books/Kickoff

March 11th - April 25th

END: May 2nd

***An award for each site plus an incentive for top teams**

Final Projects
Announced through
NNCI CO

NNCI NTEC Conducts 7 Week Program.
*** Refer to Syllabus ***

- 1) Weekly Readings
- 2) MVP Development (node use)
- 3) Customer Discovery (talk to people!)
- 4) Mentor Office Hours (Hull + nodes)

Program Concludes
with "Showcase" and
Selection of Top NNCI
NTEC Team



NNCI Futures Workshop – Translation Key Takeaways

- NNCI facilities already play a critical role in supporting technology translation
- A future network could do more to support translation
 - Startups and small business,
 - Faculty, staff, and students
- A bridge between
 - Academia and industry,
 - Regional and national innovation hubs,
 - Flexible R&D spaces and pilot-scale manufacturing facilities
- Translation generally not included as a core function of NNCI networks

Connections



“for some startups, NNCI is the ONLY path for translation” – M. Allen, MANTH

I&E WG Projects: 2023 Update



Image credit:

<https://www.ntaskmanager.com/blog/project-design-in-project-management/>

✓ **Project #1. NNCI Economic Impact Survey – 10 years after NNIN:** The group agreed that an updated economic impact survey based on the original NNIN survey (with modifications as appropriate) was a worthwhile effort to undertake.

- **Project #2. NNCI “Commercialization Scraper”:** Investigating a pilot web-scraper for relevant technologies publicly available for license through NNCI sites. (additional funding provided by NNCI CO)

