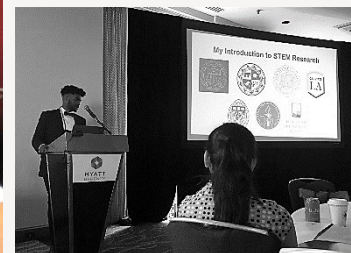
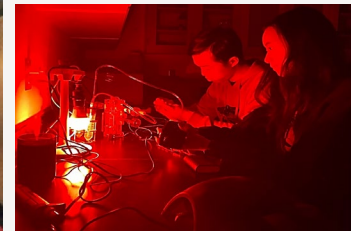
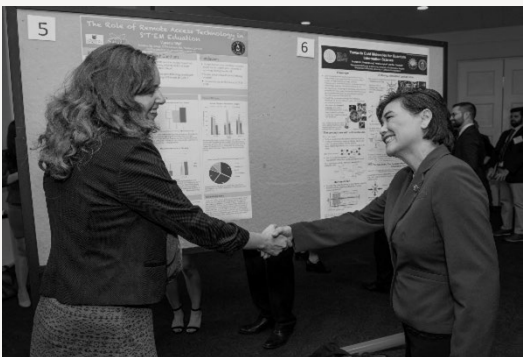
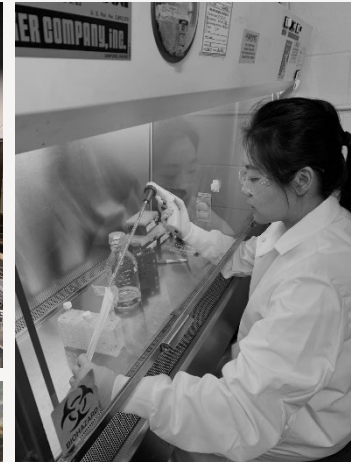
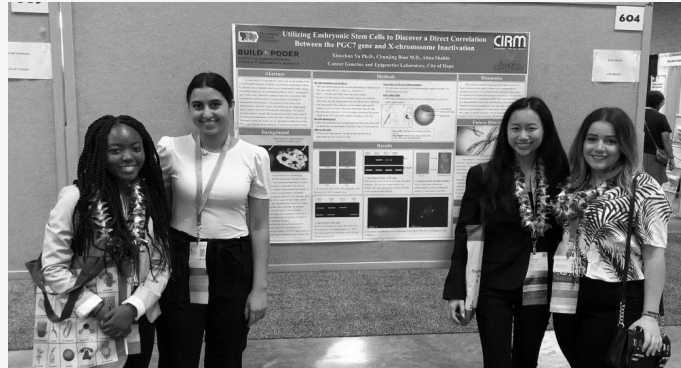


The Chips Act and the World of TAP

Jared Ashcroft, Jason Spyres



MNT-EC Mission :

Grow the MNT technician workforce by fostering academic and industry mentorship between existing MNT partners and educators developing prospective community college MNT programs.

Objective 1:

Develop a coordinated national approach to advance MNT education.

Objective 2:

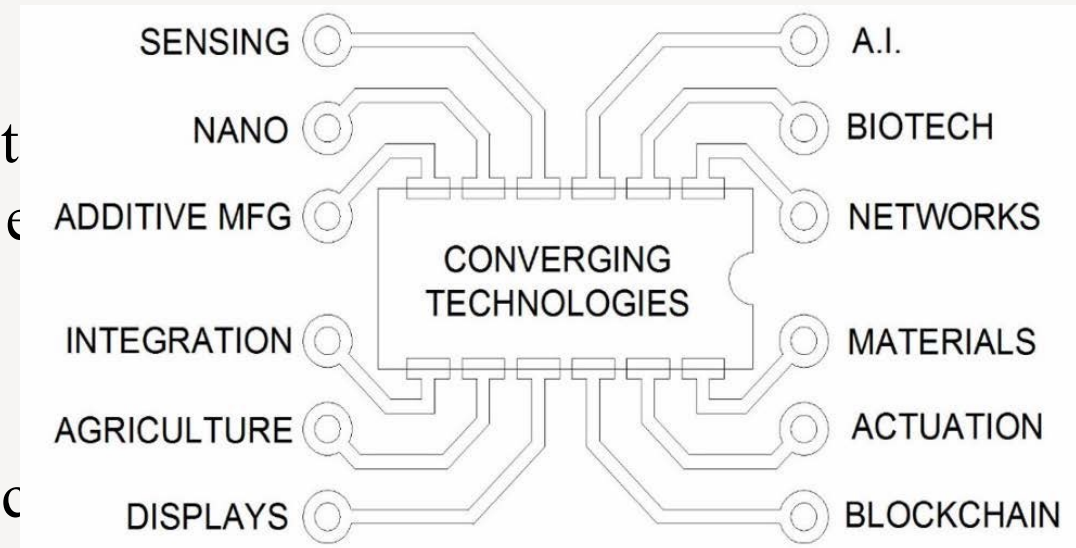
Deliver professional development to enhance knowledge, skills and abilities

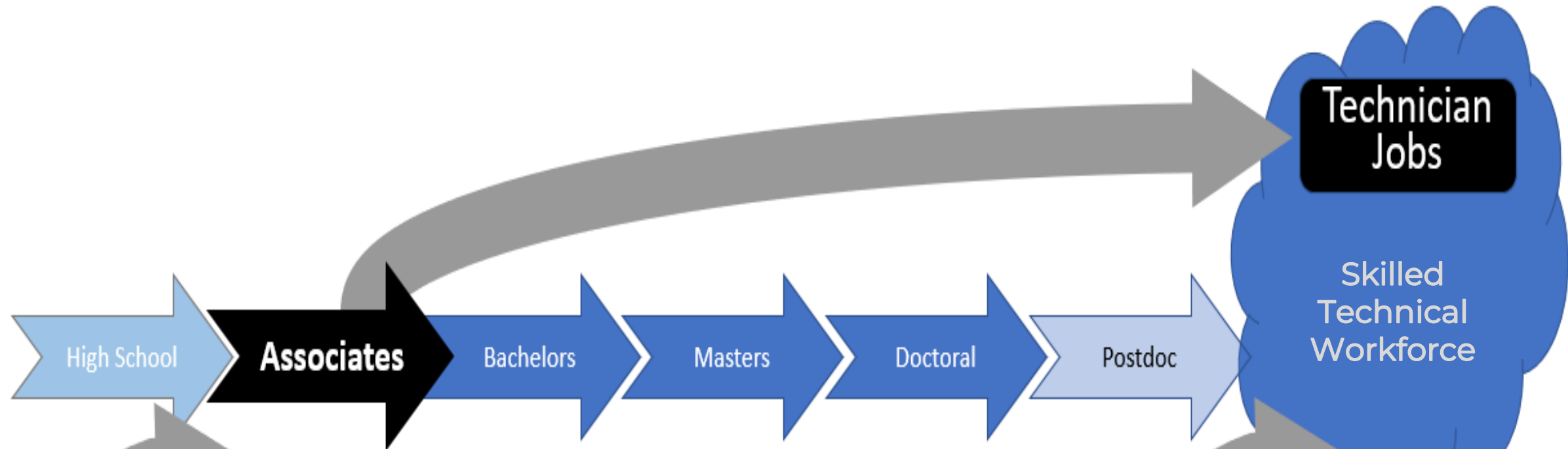
Objective 3:

Conduct strategic outreach, recruitment retention of traditional and underrepresented faculty/students.

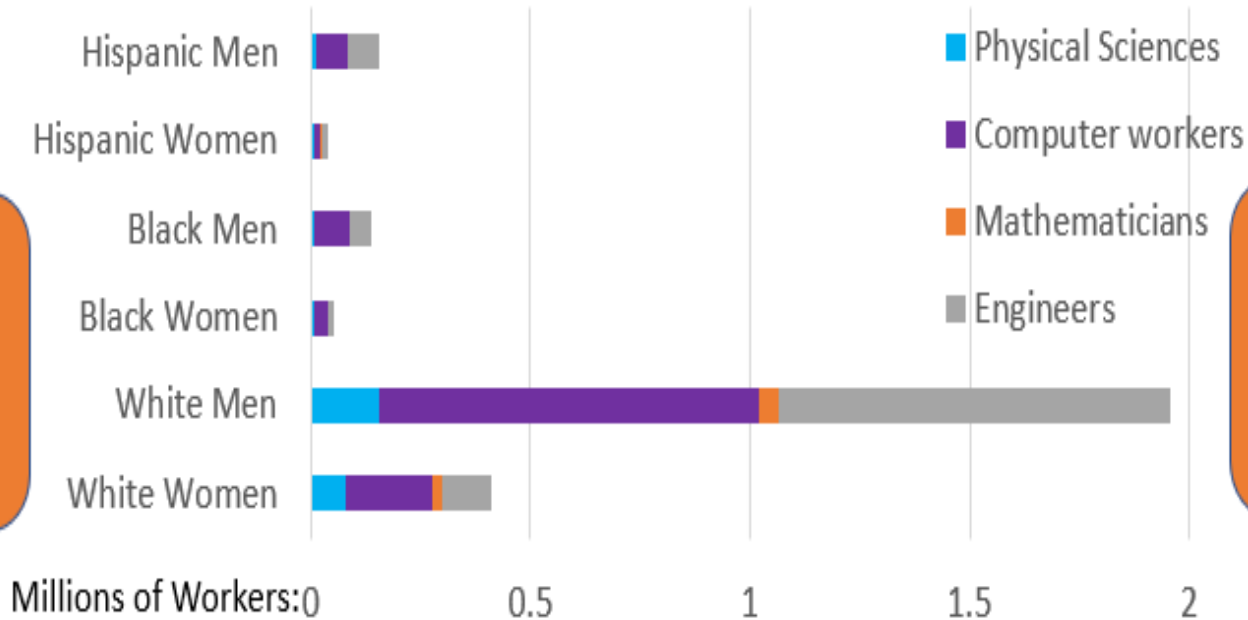
Objective 4:

Create a deep Industry/Education Alliance supports student success





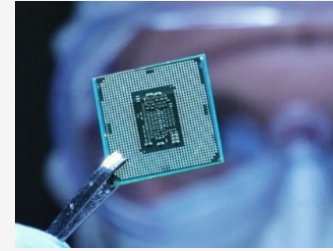
US Science and Engineering Bachelor Degrees



High School Camps
 Bridge Programs
 Teacher Support

Physical Scientists
 Computer Scientists
 Mathematicians
 Engineers

CHIPS Act



Not



- Includes \$52 billion for domestic semiconductor production
- approved in January 2021 as part of the most-recent National Defense Authorization Act, signed into law August 9, 2022.
- 12% of the world's chips are made in the United States, down from 37% in the 1990s
- Over 1 trillion chips made each year
- New semiconductor fabs in Columbus Ohio (Intel), Indiana (SkyWater), New York (Micron), Arizona (Intel, TSMC) and more
- We do not have the capacity to educate enough technicians for current and proposed new semiconductor fabs

Community College Chips Act Participation Update?

- **Community College Consortia are not being funded. Universities are leading all the different Hubs.**
- **Join Regional Hubs: Some partner well, CASCADE. Most do not.**
- **Current Support for CC Chips Act: Less than \$5 million in total**
- **We need to collaborate focus on getting students direct funding to be in our programs, obtaining better instruments/equipment for our programs, and provide funds to administer the grant/programs at our campuses.**
- **We do not need to standardize a national curriculum, but provide resources that can support programs that want our support. MNT-EC does this so no need to fund what is already being done!**

MNT Collaborative Undergraduate Research Network



Esteban Presenting at Purdue
Currently Ph.D. Program UC Irvi



Students at
University of New
Mexico
Making Art Wafer
and MEMS



Paula in lab at Penn State
Currently at UC San Diego

Support Community College Undergraduate Research; One of the most impactful practices to increase success and equity in STEM



**One-on-One
Mentoring**



**Group
Mentoring**



**Peer-to-Peer
Mentoring**



MENTORING



Online Mentoring



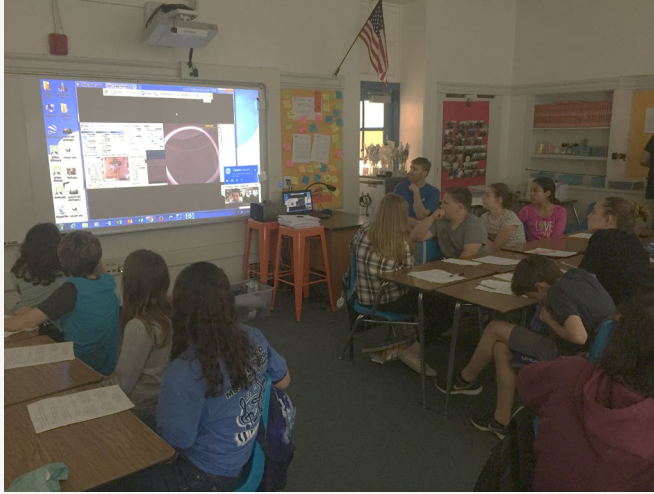
**Industry
Mentoring**



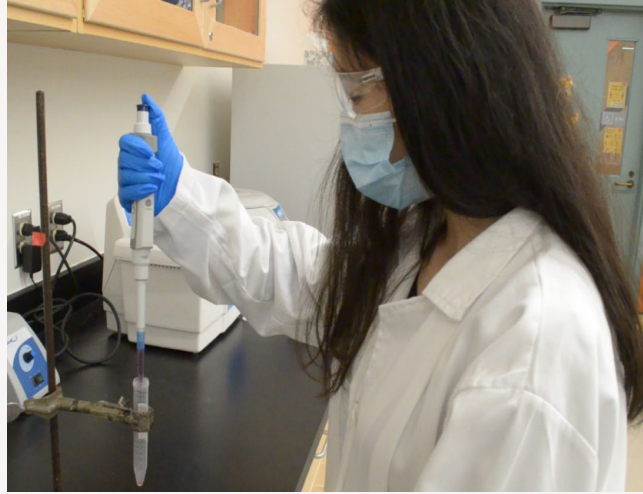
**Faculty Research
Mentoring**

Opportunities for Students: Micro Nano Technology Collaborative Undergraduate Research Network

Micro Nano Technology Education Center DUE #2000281



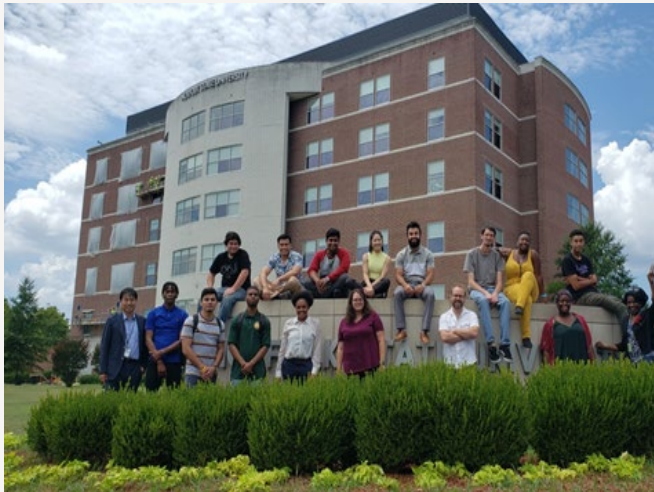
Remote Research



In Lab at CC



Presentations



Summer REU



Industry Engagement



Most Important: Have Fun

Focus on Student Outcomes: Over 50 students published, Over 100 Presentations



The First Peer-Review Journal For the ATE community

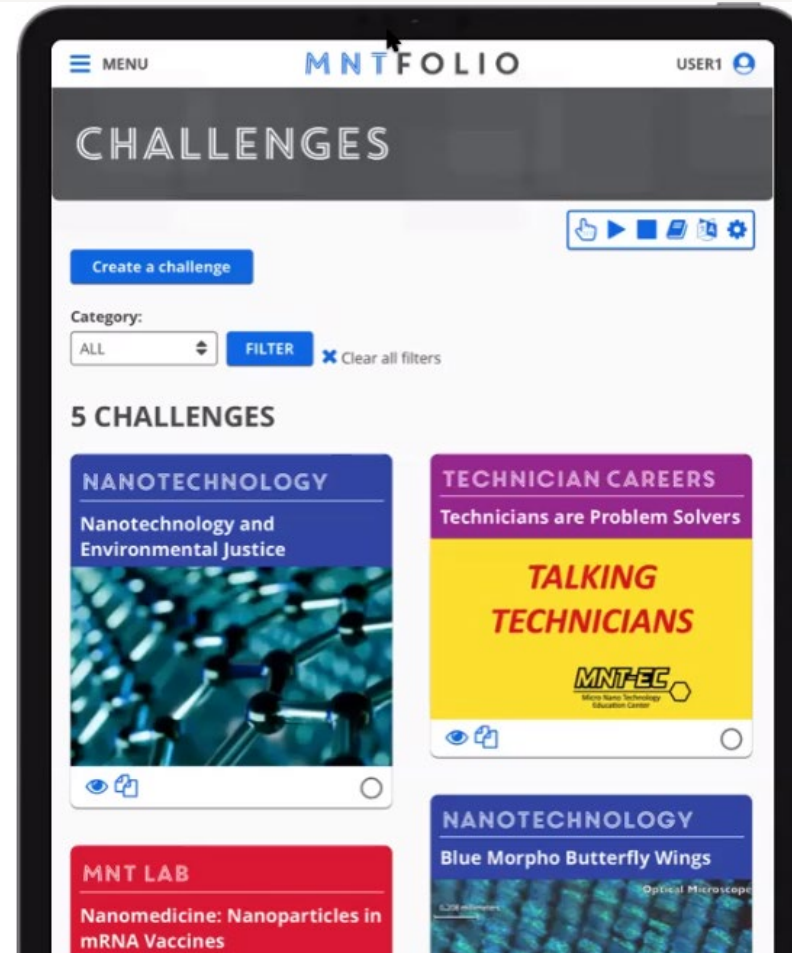
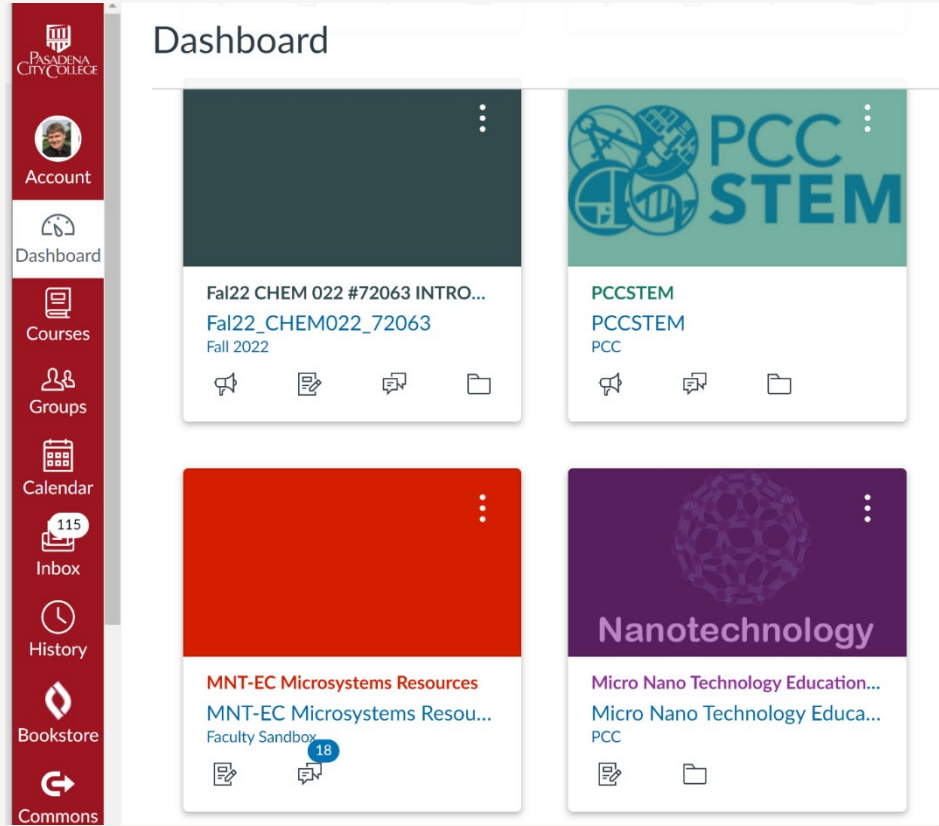
- Editorial Board Members
- Article Submission & Author Guidelines
- Peer Review Process
- J ATE Content: “Technician Education”

JATE 
JOURNAL OF ADVANCED TECHNOLOGICAL EDUCATION
Volume 1, Issue 1, 2022

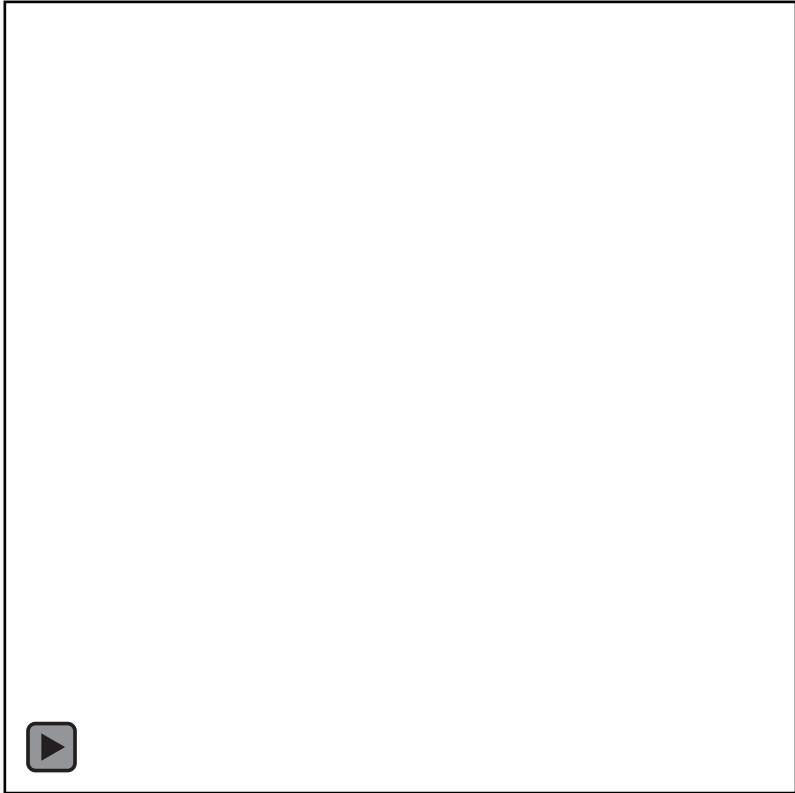


Leverage Online Learning Management Systems and Alternative Teaching Methods

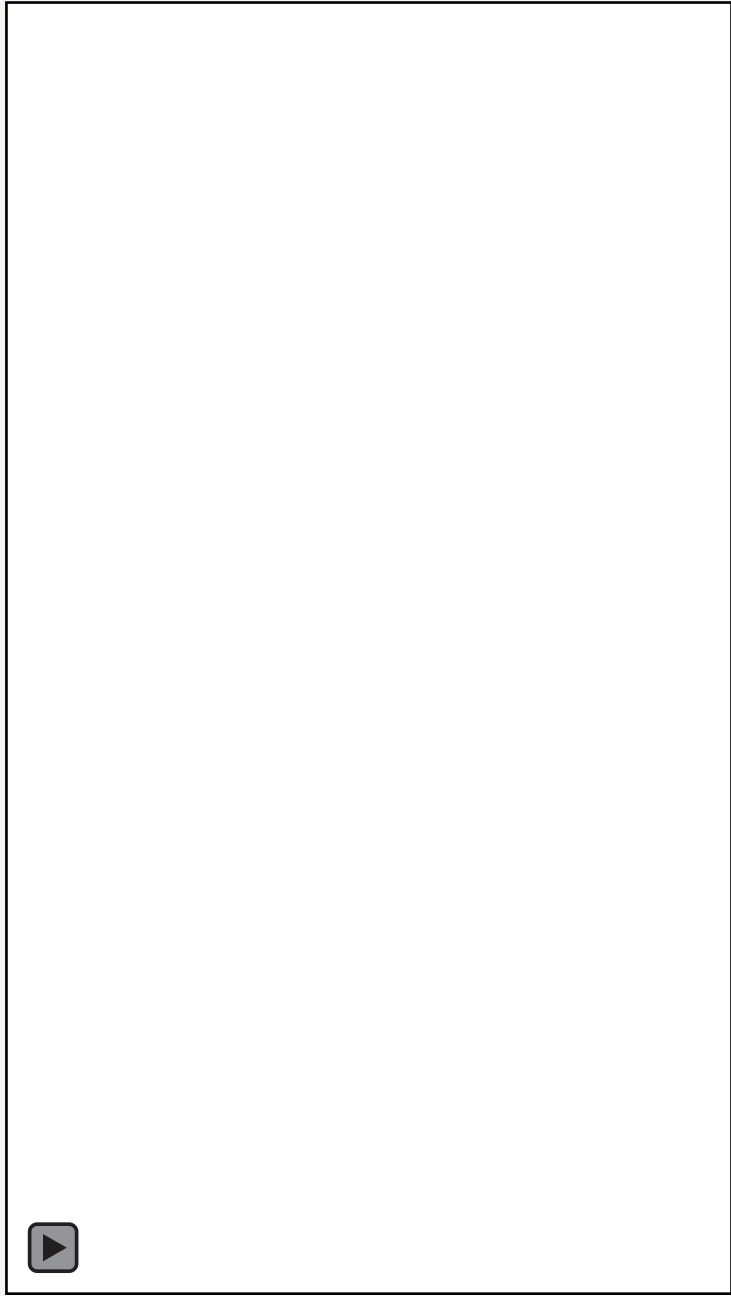
Micro Nano Technology Education Center DUE #2000281



Next Iteration: Advanced Technolo Technician Training Program



LEARNING A NEW SKILL	
PRACTICING MY NEW SKILL	
JOINING AT ³ AND MAXIMIZING MY SKILLSETS	



What is AT³?

- **8-month community college internship program for students in programs that lead to technician jobs.**
- **Weekly Zoom sessions of industry and university partners to recruit and make aware of job and academic opportunities.**
- **Each student receives \$3,000 stipend, VR headset, and access to TAP 3D course modules.**
- **Facilitate entrance into summer internships funded by industry or university partners**
- **At conclusion of program, students get a certificate and job interviews to become technicians at industry partner sites.**
- **150 intersnhips available next two years.**

Micro-credential

Establish and Validate Competency Framework



Create Learning Experiences

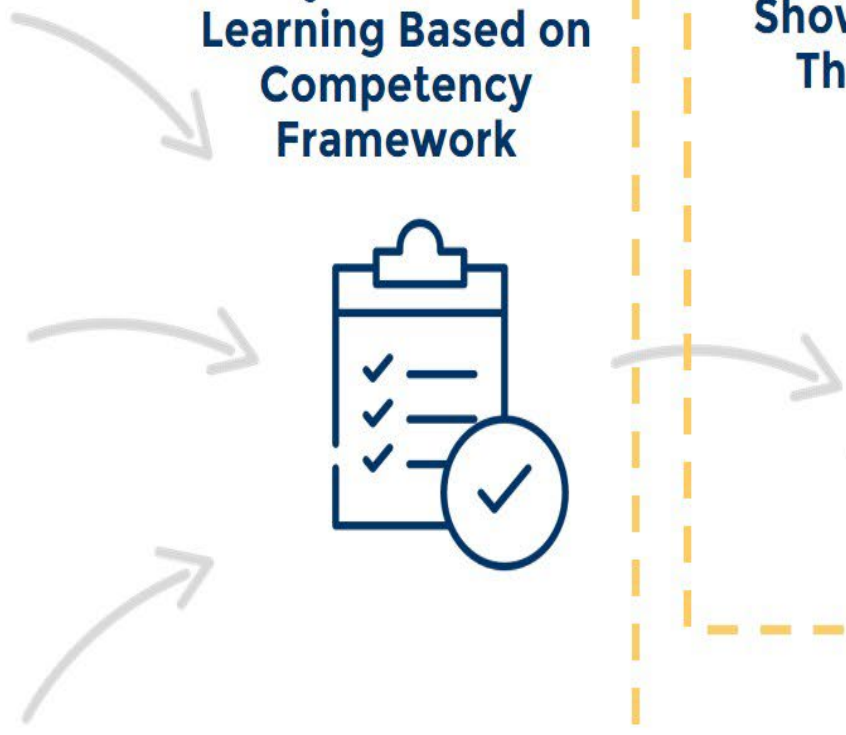


Verify Evidence of Learning Based on Competency Framework



Digital Badge

Show Achievement Through Digital Badge





NSF DUE #2000281

Thank You for attending this
presentation by Dr. Jared
Ashcroft:

PI and Center Director
Micro Nano Technology
Education Center

jmashcroft@pasadena.edu