OhioTechNet

Celebrating **10 YEARS** of Partnership and Innovation in Manufacturing & Tech Workforce

NEO Semiconductor Workforce Consortium

SERP YEAR 3 Q2 Advisory Board Meeting | May 2025
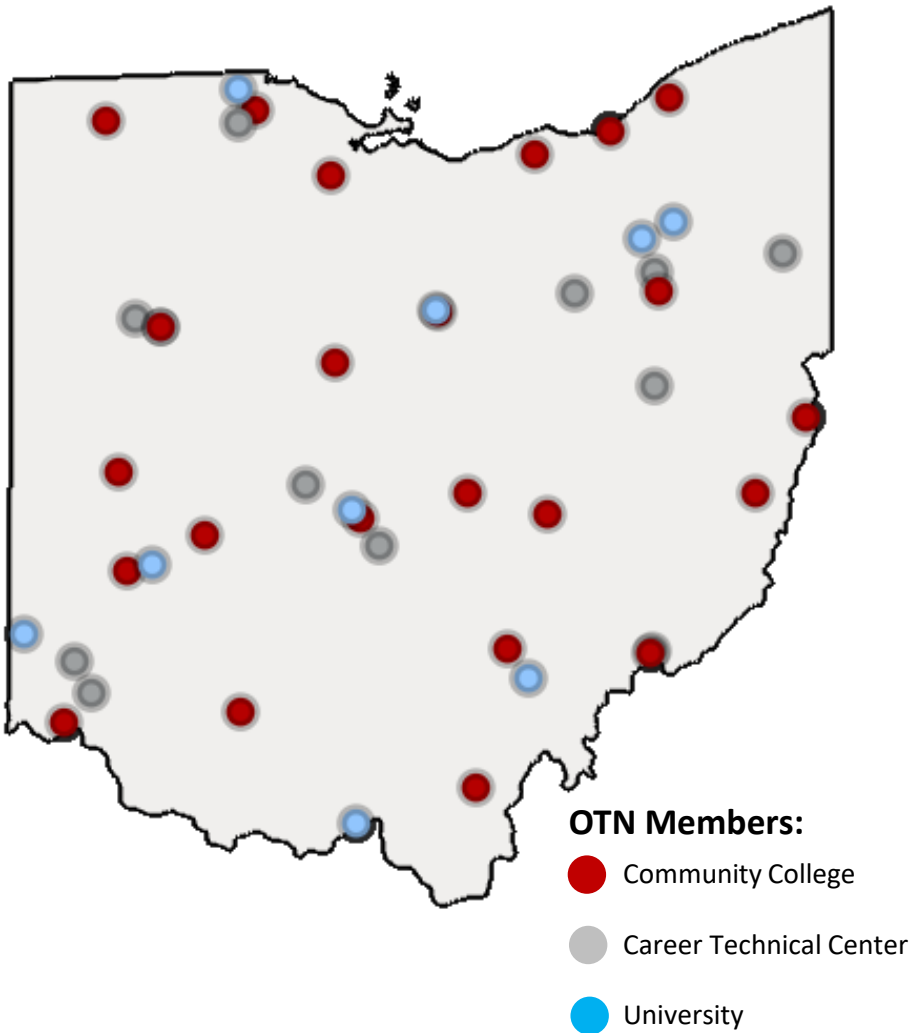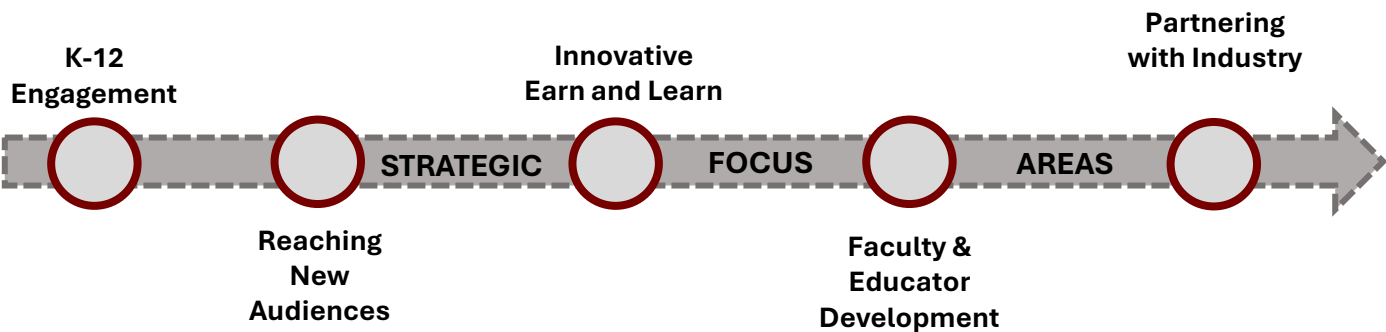
OhioTechNet

Vision:

The members of the Ohio Technical Skills Innovation Network, or Ohio TechNet, are nationally recognized for developing & implementing collaborative, inclusive, innovative solutions that meet manufacturing and tech workforce needs.

Mission:

Ohio TechNet supports workforce development and academic professionals at Ohio educational institutions to incubate, develop and sustain innovative programming that accelerates growth of Ohio's manufacturing & technical workforce.

Purpose:

Ohio TechNet partners benefit from peer-to-peer collaboration, technical assistance and access to resources, making program expansion and innovation at their institution more efficient, faster to implement and easier to sustain.

OTN Members:

● Community College

● Career Technical Center

● University

K-12 Engagement

Reaching New Audiences

Innovative Earn and Learn

Faculty & Educator Development

Partnering with Industry

STRATEGIC FOCUS AREAS

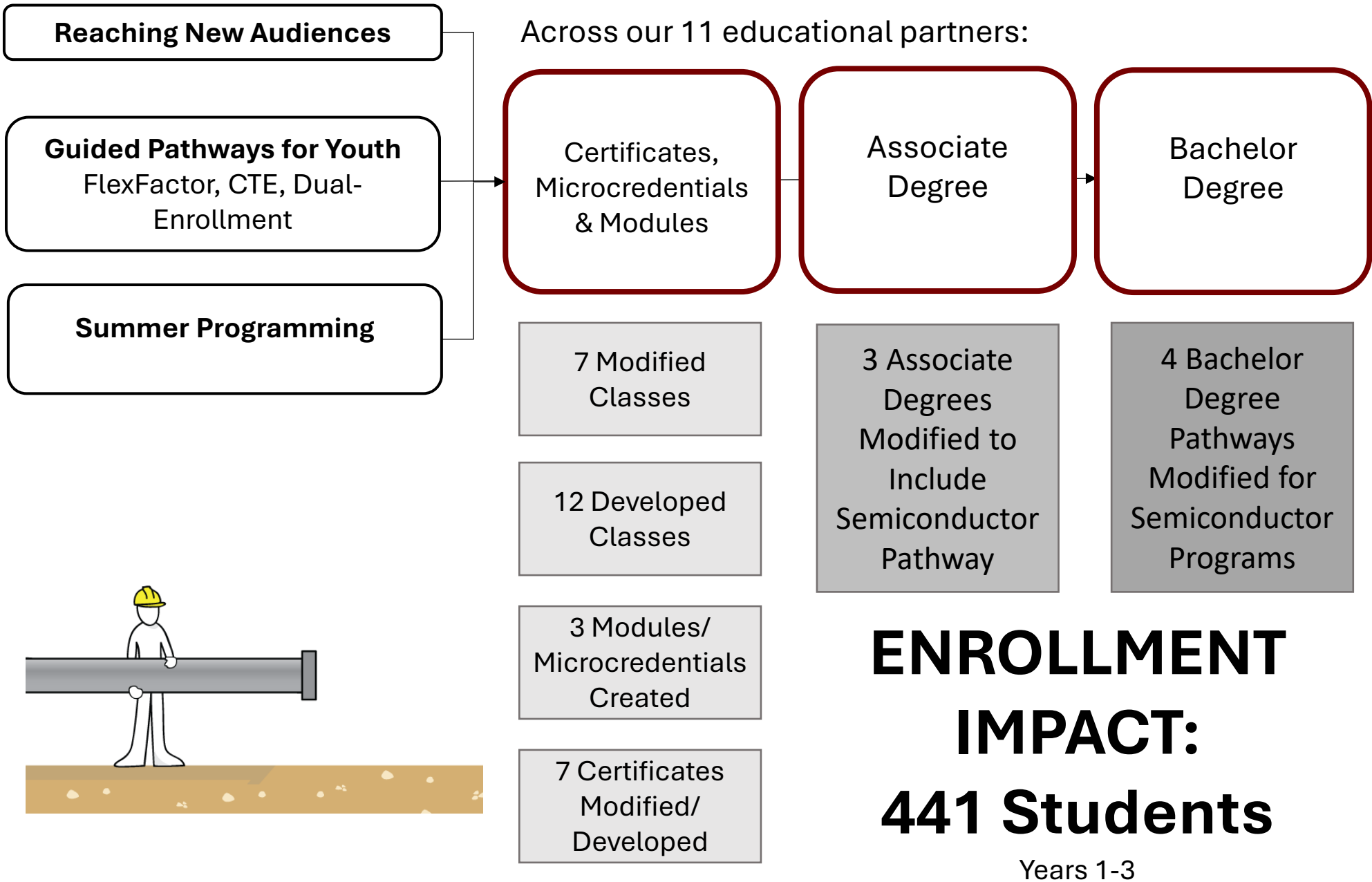www.ohiotechnet.org

PROGRAM OVERVIEW

- EXPAND THE TALENT PIPELINE

- EXPAND CAPACITY WITHIN THE SYSTEM

- EXPAND EXPERIENTIAL/ WORK-BASED LEARNING ACROSS THE ECOSYSTEM

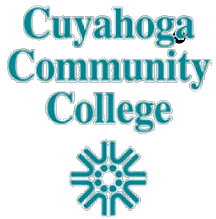- SHARE AND SCALE HIGH-IMPACT PRACTICES – NOT TO DUPLICATE

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KT2: CURRICULUM DEVELOPMENT & INTEGRATION

EXPAND THE TALENT PIPELINE

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Reaching New Audiences

Guided Pathways for Youth
FlexFactor, CTE, Dual-Enrollment

Summer Programming

Across our 11 educational partners:

Certificates, Microcredentials & Modules

Associate Degree

Bachelor Degree

7 Modified Classes

12 Developed Classes

3 Modules/ Microcredentials Created

7 Certificates Modified/ Developed

3 Associate Degrees Modified to Include Semiconductor Pathway

4 Bachelor Degree Pathways Modified for Semiconductor Programs
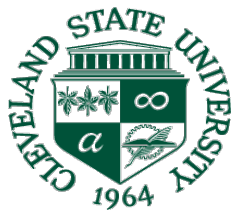
ENROLLMENT IMPACT: 441 Students

Years 1-3

Curriculum Development: Year 3 Key Highlights

Course Modification: Introduction to Industry 4.0 and Vision System, course within the Smart Manufacturing degree was modified to include OACC's Introduction to Manufacturing curriculum

[6 course completions; 13 new students, include 4 Dual Enrollment]

New Microcredential: Online semiconductor manufacturing micro-credential will be launched Fall 2025 for current students as well as the general public

Summer 2025: Micro-credential on Solid-State Circuits to be developed

New Course: Offering of a new undergraduate course, Digital VLSI Design, taught by an industry expert
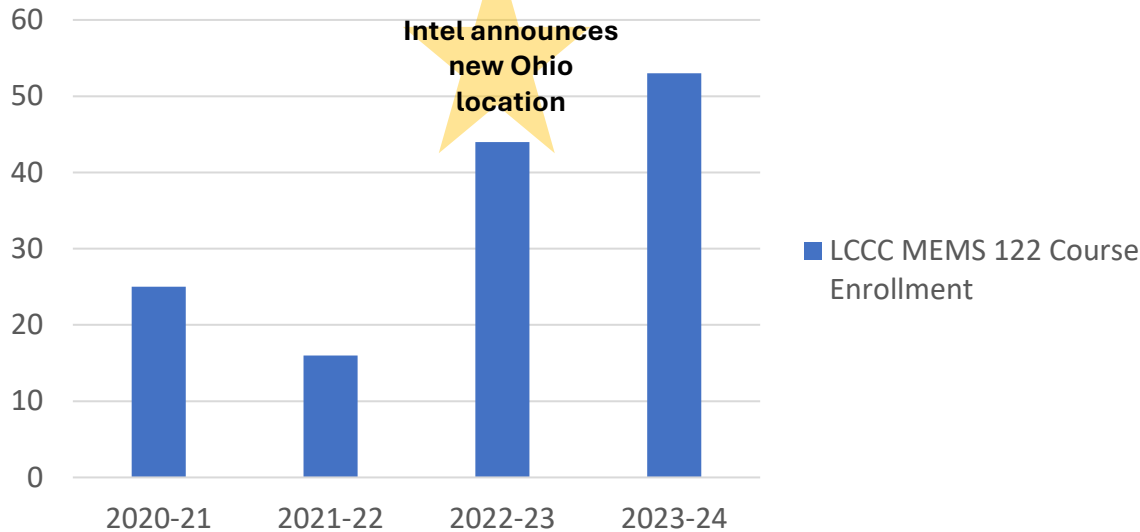**Start Date**: Spring 2025, **Six (6) students enrolled**

- **Course Module Development**: AI, Computer Architecture, and Semiconductor Devices. Module will be included within the Introduction to Computer Science and Engineering course.
Target start date: Fall 2025, **estimated 70-80 students** to enroll

- Student from Digital VLSI course will work to transform the contents in this course to make them modular and suitable for entry-level college students.
Target start date: Fall 2025 semester, **estimated 40-50 students** to enroll
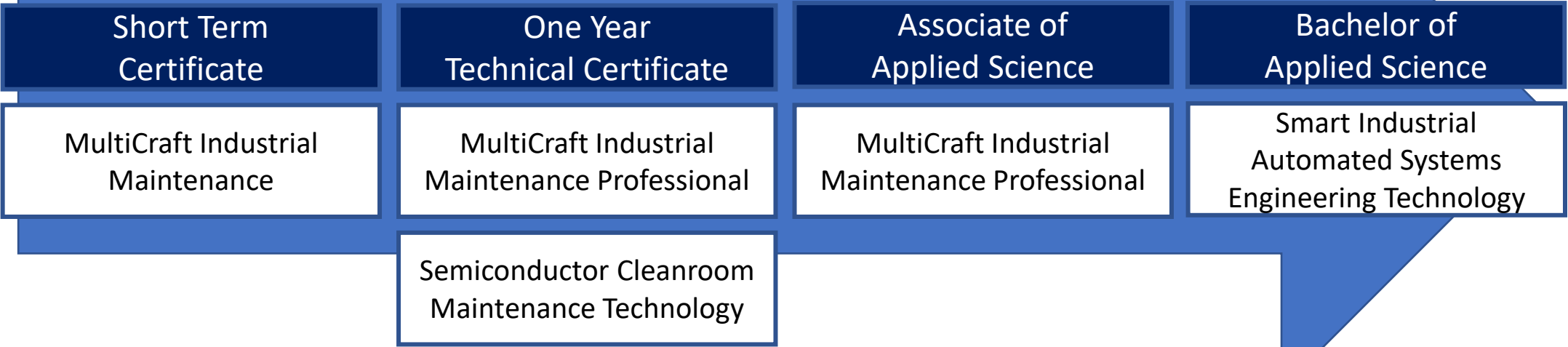
Curriculum Development: Key Highlights

Impact on Microelectronics Program

LCCC MEMS 122 Course Enrollment

Intel announces new Ohio location

	LCCC MEMS 122 Course Enrollment
2020-21	25
2021-22	16
2022-23	44
2023-24	53

Building Semiconductor Pathways

Short Term Certificate	One Year Technical Certificate	Associate of Applied Science	Bachelor of Applied Science
MultiCraft Industrial Maintenance	MultiCraft Industrial Maintenance Professional	MultiCraft Industrial Maintenance Professional	Smart Industrial Automated Systems Engineering Technology
	Semiconductor Cleanroom Maintenance Technology		

Curriculum Development:
High School Expansion & Credential Attainment

Midview High School (Grafton, OH)
- Year 1 (23/24): 7 New Students
- Year 2 (24/25): 43 New Students
- Year 3 (25/26): 17 New Students signed-up, capacity at 43

Students complete four (4) LCCC technical classes (2 Microelectronics and 2 Electrical); includes an industry recognized credential (IPC J-STD Soldering Certificate)
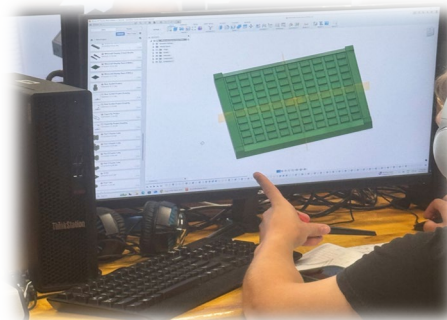**New in Fall 2025**: Chromebook Repair Class

Seven (7) Midview High School students have been placed with MEMS employers for work-based learning credit

West Shore Career-Tech (Lakewood, OH)
*Includes 3 school districts
- Launching MEMS program in Fall 2025
- Coursework can articulate into LCCC

MEMS is coming to West Shore Career-Tech next school year! So what the heck is MEMS? MEMS stands for microelectromechanical systems. Watch West Shore's...

Marion L. Steele High School (Amherst, OH)
- Spring 2024: 14 Students
- Fall 2024: 24 Students

High School teacher John Agostinelli completed LCCC's Teacher Training in 2023, earning NOCTI certification in addition to FANUC and Rockwell Automation industry-recognized credentials

Spring 2024 Agostinelli began teaching industrial robotics for college credit, utilizing Fanuc Certification Carts from LCCC's Equipment Lending Library
24-25 academic year: expanded to teach Intro to Industrial Robotics and Intro to Programmable Logic Controls (PLCs) as dual enrollment courses, as well as traditional Career-Technical Education (CTE)

Students develop industry-validated skills and competencies and earn the FANUC Handling Tool industry credential

KT2: FACULTY DEVELOPMENT

K-12 Semiconductor Educator Bootcamp

Faculty Instructor Certificate

Enhance High School Statistics Courses: Topics in Statistical Process Control

Lab Sharing for OSCN's Train the Trainer Series

Future Ready Educator Bootcamp: Exploring Industry 4.0

Vacuum Systems Training by Equipment Vendor, Kurt J. Lesker Company

STEM Outreach & SEMI Foundation Kit Training

Equipment and Lab Expansion:
- SUPER RAPIDS
- Vacuum Systems Equipment
- Intel Equipment Donation

K-12 Semiconductor Educator Bootcamp Off-Site

ASM International Materials Educator Camp

CINDE Costa Rica

Washtenaw Community College (Michigan)
Vacuum Systems Trg.

NEW in Year 3

142 EDUCATORS IMPACTED

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■ **Cleveland State Earn and Learn**
- CSU piloting new earn and learn program at 4-year level
- Hired Earn and Learn Program Manager, supported by a grant from the Cleveland Foundation

■ Summer 2024: **Student hired at Applied Materials (Texas)** as a Manufacturing Technician Intern.
- Started in KSU's Summer Semiconductor Program and currently enrolled in LCCC's Microelectronics program

■ **CWRU and LCCC Research Success Story**:
- Community College Student hired by CWRU Faculty
- Created 20 smart sanitizers for the medical industry
- Designed, fabricated, and tested systems

Pending grant opportunity : Additional funds to support four (4) more research opportunities with CWRU for CC students.

■ **8 Students to Intel (AZ)** in Summer 2024; 1 Student Returning Summer 2025
"MEMS graduate lands Intel summer internship"

■ NY CREATES: **LCCC Student earned NY CREATES internship** for Summer 2025, through program with Columbus State Community College

■ **Tri-C Earn and Learn Internship Model**
- Five (5) Students Connected to Internships

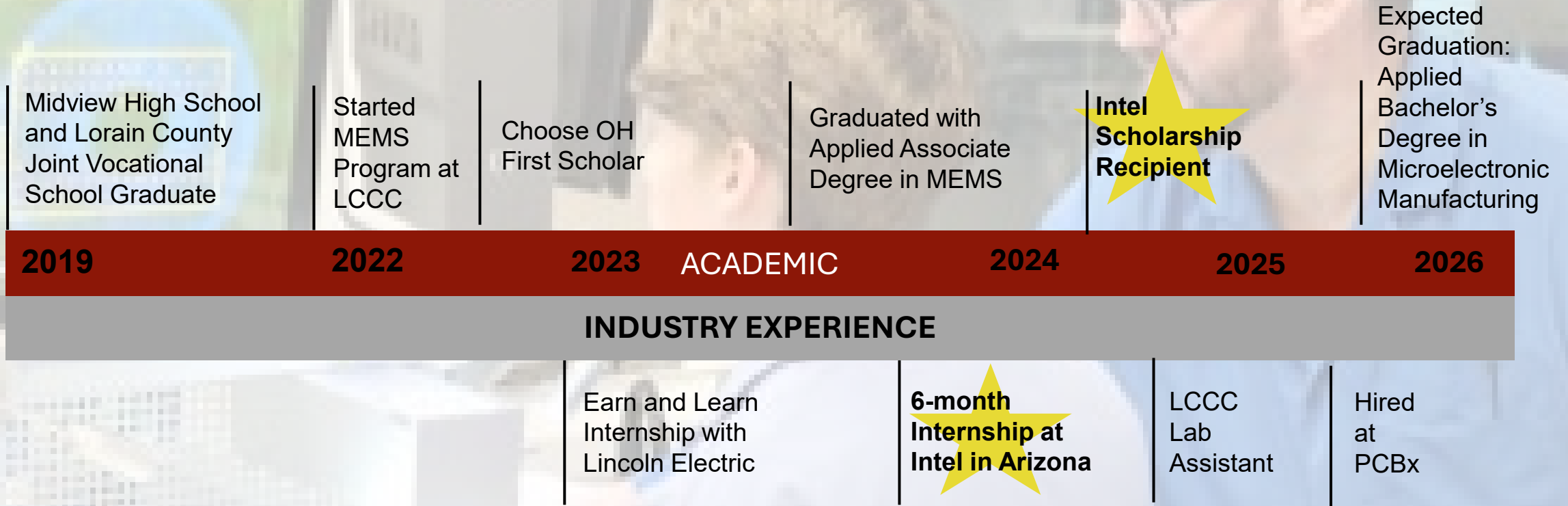■ Spring 2025, Code and Create – RocketHacks 2025, organized by UToledo.
- **10 high school students participated** in the event.

■ **Other Semiconductor Employer Relationships**
- Micron: Will share Summer 2026 summer internship opportunities with students in Fall 2025
- G&H: Hired 1 Associate Degree Grad

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Student Success
Lia Douglas

Timeline — ACADEMIC

2019	2022	2023	ACADEMIC	2024	2025	2026
Midview High School and Lorain County Joint Vocational School Graduate	Started MEMS Program at LCCC	Choose OH First Scholar	Graduated with Applied Associate Degree in MEMS	★ **Intel Scholarship Recipient**		Expected Graduation: Applied Bachelor's Degree in Microelectronic Manufacturing

INDUSTRY EXPERIENCE

| | | Earn and Learn Internship with Lincoln Electric | ★ **6-month Internship at Intel in Arizona** | LCCC Lab Assistant | Hired at PCBx |

"After being in the MEMS program and having these incredible opportunities, I feel so much better about where I'm at," Douglas said. "I've still found a way to have my college dream."

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142 of 163
Scholarships Awarded
Year 1 - 3

Year 3 Intel Scholarship Recipient

"I am trying to figure out how to apply for a scholarship. A brief history for me is that I am a returning student, after 40 years of working, trying to finally get my degree in Electronics Engineering Technology.

I work full time and have 2 children and I'm currently paying for my classes out of pocket as I can afford them. I do make a fair paycheck for someone without a degree but it's **not enough to afford many extra classes. While I'm making do and not afraid of hard work, I was hoping to find some means of getting some assistance.**"

SHARE AND SCALE HIGH-IMPACT PRACTICES

CODING FOR KIDS CAMP

AMPLIFICATION OF FUNDING

- Midwest Microelectronics Consortium (MMEC) Partnership & Investment

- Utilization of DoD STEM funds to support internships Stark State continuing with OACC, Semiconductor Coordinator and lead faculty team on next phase initiative

- LCCC Hired Executive in Residence for Semiconductors – funded through various grants

- New OTN-led DOL Strengthening Community College grant in Northeast/Northwest with 5 colleges, OMA & OACC focused on engineering technicians

OTHER SUCCESSES

- New College Credit Plus waiver in high-demand fields, Press Release

- Ohio Department of Higher Education (ODHE) approved LCCC's MEMS 211 for TAG OSE002, Semiconductors (for STEM majors)

- MMEC Workforce and Technical Committees

- Circuit Scribe and Micro:Bit Camps (Summer 2025)

- Participation in Co-Lab project with OACC

- Partnership with KSU and Theodore Roosevelt High School

- LCCC Grad and Intel Employee, Talking Technician Podcast with MN-TEC

- Lt. Governor and Chancellor Duffey visit to LCCC (May 2025)

SHARING BEST PRACTICES WITH OHIO

- Ohio TechNet & NextFlex 10 Year Celebration Event

- The Chronicle of Higher Ed Article. 'Clear Pathways: From College to Career'

- STEM Innovation Summit with Battelle

- FlexFactor Community of Practice with NextFlex

- Ohio Manufacturing Talent Strategy with OMA, JobsOhio, OWT, Industry

- AIM Hire Presentation with OTN, OSCN, and OACC

- Canton Joint Engineering Council (25 Attendees, with Intel as Speaker)

- Fireworks MEP Conference, sharing of FlexFactor

- Ohio ACTE Conference (Summer 2025)

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STEM Resources to be added to Ohio TechNet's website

FlexFactor

FlexFactor is an outreach, recruitment, and STEM education program designed to familiarize K-12 students with advanced manufacturing technology, entrepreneurship, and the **education and career pathways that can lead to a STEM career.**

Layered over an existing K-12 class, the program showcases the promise of these careers and **helps students develop the critical thinking, creative reasoning, and problem-solving skills needed for future success**.

FlexFactor connects a wide range of stakeholders in the advanced manufacturing sector to help **illuminate career opportunities** in the field and orient students to the educational pathways that can lead them to those careers.

Since 2018		
> 10,000	120	459
Participants	Industry Partners and Stakeholders	Iterations

[FlexFactor Briefing Packet](#)
[Learn more about FlexFactor](#)

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KEYNOTE SPEAKER

Brynt Parmeter

Chief Talent Management Officer

Office of the Under Secretary of Defense for Personnel and Readiness

U.S. Department of Defense

Brynt Parmeter discussed the national imperative of cultivating a skilled workforce to meet evolving defense needs and the importance of public-private partnerships in achieving this goal.

Brynt partnered with Ohio TechNet and NextFlex to convene educators, workforce professionals, and industry partners to discuss strategies for expanding the FlexFactor program.

*The event was a testament to **Ohio's commitment to building a resilient, skilled workforce** through collaboration, innovation, and strategic investment.*

Event Recap, Materials, and Photos: https://ohiotechnet.org/our-consortium/10-year-celebration/

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Ways to Engage

Attend a Meeting

Stay connected through regular virtual monthly meetings featuring updates, resources, and peer collaboration.

Subscribe to the Newsletter

Get the latest Ohio TechNet updates, opportunities, and success stories delivered straight to your inbox.

Thank You