OhioTechNet

Ohio Technical Skills Innovation Network

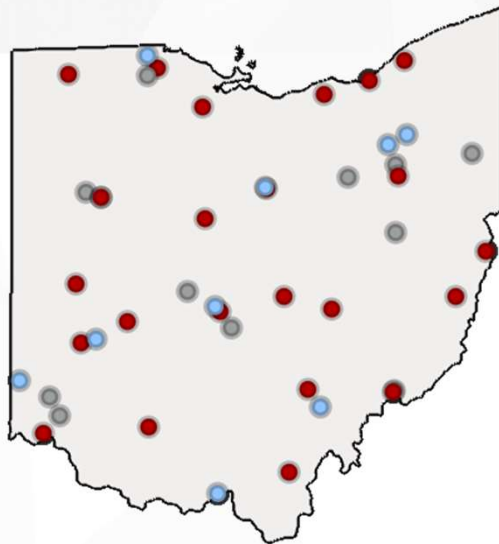# CELEBRATING 2024

www.ohiotechnet.org

Date: December 17, 2024

OhioTechNet

Partners in Training Ohio's Manufacturing Workforce

OTN Members:

- 🔴 Community College
- ⚫ Career Technical Center
- 🔵 University

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.

Thank you,
Ohio TechNet Partners!

"Thank you for your hard work, dedication, innovative thinking, and commitment to leading Ohio's efforts in the manufacturing and tech workforce!"

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Thank you to OTN's Inaugural Advisory Council

BRETT DOUDICAN
Greene County Career Center

STEPHANIE MEEKS
Ashland University

ALETHEA GANAWAY
Cuyahoga Community College

JEFF MILLER
Sinclair Community College

JENNIFER FILLINGER
The Ohio State University

TRACEY PORTER
Zane State University

JOHN MAGILL
The Ohio Department of Higher Education

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Strategic Focus Areas

Ohio TechNet's strategic focus areas provide partners with best practices, models, and technical assistance to address the critical workforce needs in the state

- **Guided Pathways for Youth**
- **Reaching New Audiences**
- **Innovative Earn and Learn**
- **Faculty and Educator Development**
- **Partnering with Industry**

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2024 Grants & Projects
that supported the strategic focus areas

Department of Labor Scaling Apprenticeships

Defense Industrial Base STEM Consortium

DoD Manufacturing and Engineering Education Program (MEEP)

Intel Semiconductor Education & Research Program (SERP)

Department of Labor NEO Opportunities in Tech

Department of Energy Industrial Training Assessment Center (ITAC)

Newly Launched

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DOL Scaling Apprenticeship Grant & Ohio Manufacturing Workforce Partnership

This project, with a $12 million dollar USDOL investment, co-led by OTN, the Ohio Manufacturers' Association, and a network of manufacturer-led sector partnerships supported the expansion of innovative earn and learn across Ohio.

Primary Achievements:
- Growth of sector partnerships and strengthened statewide workforce strategies
- Supported the upskilling of incumbent workers
- Trained entry-level workers through innovative earn & learn
- Developed tools and models for statewide and national replication

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The Ohio Manufacturers' ASSOCIATION

DOL Scaling Apprenticeship Grant & Ohio Manufacturing Workforce Partnership

5,038 Participants Served

205 New Programs

371 Employers Engaged

47 Expanded Programs

730 Women

406 Ex-Offenders

1,449 People of Color

216 Veterans

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The Ohio Manufacturers' ASSOCIATION

DoD Manufacturing and Engineering Education Program (MEEP):
The Ohio Manufacturing Talent Expansion for the Defense Industrial Supply Chain

1,093
Adult Participants Served

3,141
Youth Participants Served

253
Industry Partners Engaged

Project Snapshots:

Guided Pathways for Youth

- Statewide **FlexFactor** Expansion – 12 licensed community college leads
  - 81% of youth participants have better awareness and understanding of STEM and advanced manufacturing pathways
- **Sinclair Community College** held its 3rd Annual FlexFactor Regional Competition. Teams from 10 schools competed, with students from grades 6 -12. Sinclair also awards 1 hour of elective credit for FlexFactor completion
- **Cuyahoga Community College** integrated FlexFactor into College Credit Plus courses in Cleveland MSD

Adult Acceleration Strategies

- **Stark State** developed non-destructive testing curriculum for welding, and awarded 150+ industry-recognized credentials
- **32 high school, college & university educators** completed LCCC's Industry 4.0 Automation & Robotics Training
- **Cuyahoga Community College partnered** with a local high school to help students obtain the **Certified SolidWorks Associate (CSWA)** industry credential
- **Columbus State CC:**
  - **17 Modern Manufacturing Work Study** students received and accepted offers of apprenticeship
  - In the Advanced Training Centers, 2 bootcamps finished with a combined **20 completers**. Two pharmaceutical manufacturing bootcamps ran, with an **additional 20 students participating**

Industry Engagement and Partnerships

- Supported development of the **Ohio Manufacturing Competency Model**
- OTN participation in the **Ohio Defense Manufacturing Community** with Ohio MEP, OMA, ARM Institute, and AmericaMakes

NEXTFLEX

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Intel SERP: NEO Ohio TechNet Semiconductor Workforce Consortium

EXPAND THE TALENT PIPELINE

EXPAND CAPACITY WITHIN THE SYSTEM

EXPAND EXPERIENTIAL/WBL ACROSS THE ECOSYSTEM

SHARE AND SCALE HIGH-IMPACT PRACTICES

422 Students Impacted

109 Educators Participated

10 Intel Internships

20+ WBL Opp. In Semi. Supply Chain

- Ohio Mfg Competency Model
- SEMI Foundation High Tech U
- STEM Innovation Summit with Battelle
- The Chronicle of Higher Ed: 'Clear Pathways: From College to Career'

ASHLAND UNIVERSITY

YOUNGSTOWN STATE UNIVERSITY

lccc Lorain County Community College

Cuyahoga Community College

Stark State COLLEGE

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CWRU

UT THE UNIVERSITY OF TOLEDO 1872

KENT STATE UNIVERSITY

Lakeland COMMUNITY COLLEGE

OHIO DOMINICAN UNIVERSITY

CLEVELAND STATE UNIVERSITY 1964

Defense Industrial Base STEM Consortium

✓**Curriculum Replication & Innovation**
- LCCC (Automation) & Sinclair (Digital Transformation)
- OU, Miami, Central GA Technical College; High School Replications
- Ohio Manufacturing Competency Model

✓**Open Educational Resources –**
- OTN SkillsCommons
- Automation & Robotics Curriculum
- Innovative Earn & Learn Model
- Digital Transformation, AI Skills for the Future of Work

✓ **Industry 4.0 Teacher Training**
- LCCC Program Redesign
- Future-Ready Educator Boot Camp Pilot
- Digital Transformation Bootcamp

✓**Engaging Industry & Government**
- Summer of Innovation (2025)
- Dayton Digital Transformation Summit (2025)
- CESMII Smart Manufacturing Road Map

✓**K-12 Guided Pathways**
- FlexFactor and STEM Engagement
- HS Dual Enrollment and CTE Pathways

Ohio Education & Industry Partners

National Replication Partners

NORTHEAST OHIO OPPORTUNITIES IN TECH

Employer Engagement Model

- Implementing the Business & Industry Leadership Team (BILT) Model, in partnership with Greater Cleveland Partnership and Team NEO
- **Nine regional employers identified key competencies** for the IT workforce, focusing on 4 occupations within IT

Program Design & Implementation to date

- Lakeland CC **introduced 3 new degree programs**
- LCCC **mapped short- to longer-term credentials for four programs**, supporting students with credential attainment, and integrating work-based learning (WBL)
- Stark State **added 3 industry-related IT credentials** to its offerings and developing a placement model for WBL with career services
- Tri-C is **launching a new Cisco course** and offering non-credit courses to prepare students for AI certification exams

Advancing Untapped Talent Strategy

- Engaged with multiple partners to support the recruitment and outreach of prospective students; including, Passport to IT event, Big Brothers Big Sisters Wired Rockstars program, GetWITit partnerships, and other networking events

NEO Opportunities in Tech

Success Stories

Kevin Dodson, a cybersecurity student benefited from the scholarship and stipend funding, Kevin has been able to remain in school and manage his finances effectively. In a recent Check-In Survey, Kevin expressed his gratitude, stating, "The grant has allowed me to stay in my own home. Moving back with my parents at 34 would be awful." Beyond financial support, Tri-C has assisted Kevin in accessing additional funding opportunities and utilizing various support resources.

Five Stark State completed industry recognized credentials (two passed the CompTIA A+ exam, two for the Network+ exam, and one for Security+.). Some of the students who became certified have opted to pursue a second certification.

Lakeland focused on the issue of students not obtaining industry-recognized credentials, and determined that financial concerns may be a barrier. As a solution, Lakeland developed a reimbursement program to make it more financially feasible. Braden Mills was the first participant in this initiative. Braden, a Computer Information Technology major at Lakeland, aimed to achieve his A+ certification. Upon successfully passing the exam, Braden received an 80% reimbursement of the certification cost.

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Department of Energy
Industrial Training Assessment Center (ITAC)

- An Ohio TechNet ITAC Center designed to expand industrial workforce training efforts and help local small and mid-sized manufacturers save energy, reduce water and improve productivity

- The ITAC will look at both technology adoption and talent development

- Project Metrics:

  - **30 SMMS** to receive smart manufacturing roadmap assistance using a CESMII Smart Manufacturing Acceleration Framework; leveraging the Ohio Manufacturing Competency Model

  - **15 students will take part in paid internships** to support the road-mapping and/or talent development process

  - **275 individuals** will be served through WISE Pathways, Bootcamps, High School Dual Enrollment and/or Fast Track credentialing, WorkAdvance, and Pre-Apprenticeship Training

Industrial Training and Assessment Centers
U.S. DEPARTMENT OF ENERGY

Lorain County Community College | OhioTechNet | MANUFACTURING WORKS | hhw OHIO | The Ohio Manufacturers' ASSOCIATION

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STRATEGIC FOCUS AREA #1:
GUIDED PATHWAYS FOR YOUTH

Through its robust state-wide partnerships , Ohio TechNet provides resources, mentorship, and awareness of innovative programs that inspire the next generation of skilled professionals. In partnership with state and national industry leaders, Ohio TechNet supports its members to expand hands-on experiences with their K-12 partners and build capacity to prepare youth for high-demand fields, providing a strong foundation for success in the workforce.

K-12 ENGAGEMENT

Guided Pathways for Youth: **FlexFactor**

Supported by the DoD STEM and DoD MEEP grants, and Manufacturing USA Partner, NextFlex
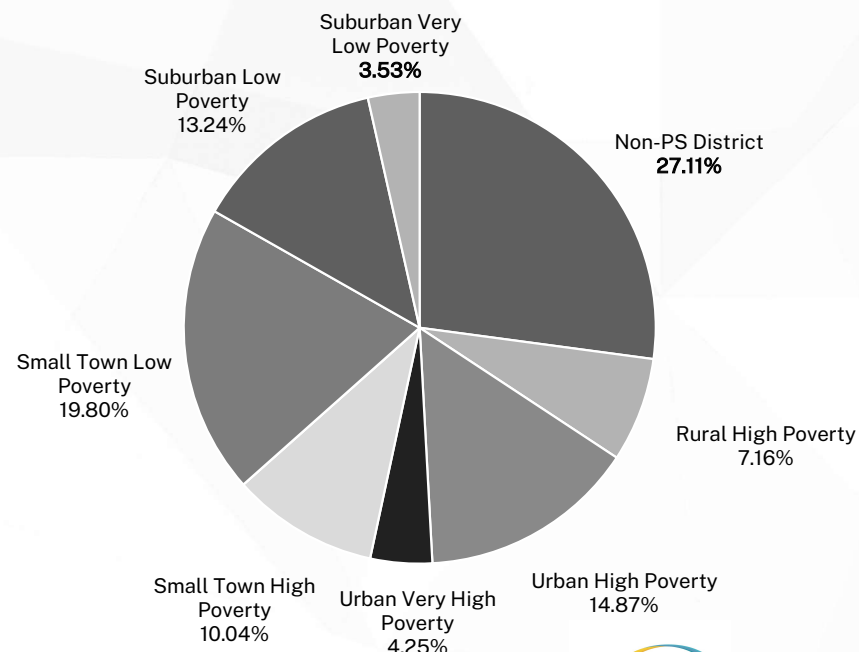
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SINCE 2018
9,097
Students

113
Industry Partners

459
Interations at 102 Sites

% FlexFactor Participants by District Typology, 2020 – June 2024

- Suburban Very Low Poverty **3.53%**
- Suburban Low Poverty 13.24%
- Non-PS District **27.11%**
- Small Town Low Poverty 19.80%
- Rural High Poverty 7.16%
- Small Town High Poverty 10.04%
- Urban Very High Poverty 4.25%
- Urban High Poverty 14.87%

Ohio Schools Actively Running FlexFactor:

- Cuyahoga Community College
- Cincinnati State
- HOCKING COLLEGE
- Lorain County Community College
- SINCLAIR COMMUNITY COLLEGE
- Stark State COLLEGE
- WASHINGTON STATE COLLEGE OF OHIO
- ZANE STATE COLLEGE ZSC

NEXTFLEX
America's Flexible Hybrid Electronics Manufacturing Institute

An outreach, engagement, 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

Informing High School Lab Design
Expansion of Dual Enrollment
Teacher Credentialing for Industry 4.0

OhioTechNet

Ohio TechNet provided guidance on lab expansion and capacity needs

Midview High School in Grafton, OH made history last spring by becoming the first public school in the state to offer a MEMS (microelectronic manufacturing) program with a clean room. Students can complete four (4) MEMS College Credit Plus courses.

John Agostinelli, M.Ed. · 1st
Robotics and Automation Instructor
2mo · 🌐

Thanks to Jon Husted and the Ohio Department of Education and Workforce for investing in the youth of Ohio to strengthen the workforce pipeline for in-demand jobs in our state. Thank you for your award for $1,612,935 for the students at Amherst Exempted Village Schools for our Advanced Manufacturing Program. Students will earn credentials from FANUC America Corporation, Rockwell Automation and SMC in Industrial Robotics, Programmable Logic Controllers, Mechatronics and Industry 4.0 Capstone courses.

Amherst High School Teacher, John Agostinelli, completed the Industry 4.0 Teacher Training and is now able to certify his students in FANUC Credentials!

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K-12 Educator Training

K-12 Semiconductor Cleanroom Bootcamp

ASHLAND UNIVERSITY

- **25 Educators Completed**
- 2-Day Bootcamp for K-12 Educators
- Hands-on Experience in the Cleanroom
- Learn about semiconductor careers
- Employer Tour
- Access to classroom resources
- Educators earn 2 graduate credits

High Tech U Training

SEMI FOUNDATION

High Tech U in the Classroom

- STEM Kits & Curriculum
- Train the Trainer Educator Workshops held in April 2024 to all academic partners
- **IMPACT: 1,000 Students**
- Integrate training and kits into current programming (FlexFactor, WISE Pathways, Summer Programming)

SEMI Stories

- OTN Partners Connected to Tiggbee Programming

Chip In Documentary Dialogue

- **Two SEMI Foundation Facilitated Events**
  - Session offered to K-12 Educators
  - Session provided to Glen Oak High School Students
  - Engaged 25 High School Students

Training for High School Statistics Teachers: Topics in Statistical Process Control

OHIO **DOMINICAN** UNIVERSITY™

- Explores ways in which **quality control practices applied in manufacturing** settings can be used to enhance students' understanding of statistics topics such as distributions, central limit theorem, and hypothesis testing

- Participants explore various aspects of statistical process control (SPC), drawing connections between SPC and standard secondary school level statistics topics

- Educators will develop a lesson plan adaptable to their current curriculum

- Additionally, insights into career opportunities within the industry

Applying Statistics to Advanced Manufacturing

OhioTechNet

Tooling U Certified Manufacturing Associate: Partnering to offer facilitator and participant guides

A member of the OTN team developed these guides to support participant success in earning the certification.

Honed and now offered by Tooling U nationally for those offering the CMfgA program.

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STRATEGIC FOCUS AREA #2:
REACHING NEW AUDIENCES

By fostering inclusive partnerships with employers, educators, and community organizations, OTN helps its members create pathways to success for untapped talent. OTN members have access to free open education resources and many grant projects support capacity building to increase targeted outreach and innovative training and advancement models.

WISE Pathways

FREE career development and exploration program that encourages and supports women to pursue in-demand careers such as manufacturing, construction and technology. Brings together industry, community-based organizations and education and training providers to offer regionally-customized information and build networks of support.

100+
SERVED in 2024
Women of all ages seeking new opportunities and education throughout Ohio

60%
earned an industry recognized credential and/or were placed into full time employment or education within 1 month of completion

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Ohio WISE Pathways Partnerships

Implementation Partners	Location	Target Populations
Lorain County Community College	Lorain County	• Recent High School Graduates • Community Members
Conxus NEO, The Well CDC	Greater Akron Region	• Low Income Women
Mahoning Valley Manufacturing Coalition	Mahoning Valley	• Women in Career Transition • Community Members
Crawford Works, North Central State College	Crawford County	• Justice Impacted Women
Shawnee State, Ohio BEST	Chillicothe, Portsmouth	• Women in Recovery • Justice Impacted Women
Oakmont Education, DRMA	Dayton	• High School Seniors
HHW Ohio	Cleveland	• Women in Career Transition • Community Members
Marion Technical College	Marion	• Undecided Students
Zane State College	Zanesville	• Undecided Students • Community Members
Columbus State Community College	Columbus	• Community Members • Women in Career Transition
Central Ohio Technical College	Newark	• Women in Career Transition

WorkAdvance
Entry-Level Earn and Learn

"Being able to pivot and push forward has been a big lesson for Jones. WorkAdvance is now part of that journey."

Through OMWP's Scaling Apprenticeship grant, we saw signification expansion of WorkAdvance, now supported through the OMA Good Jobs Challenge grant.

"For 22-year-old Adelbert Jones, the road to a desired career path took an unexpected detour. However, he leveraged WorkAdvance to steer back on course and regain stability.

Jones was working in Pittsburgh when he lost his job after getting into an accident that left him without transportation. He was forced to get back on his feet and find work elsewhere.

"My stepmom told me about WorkAdvance, so I signed up. There was a $750 stipend, and I needed that money to help me until I got a job," Jones said.

He and eight others completed the three-week training and were prepared for careers in manufacturing. In February 2024, Jones was hired at Liberty Steel Industries in Warren."

Source: https://bit.ly/48k4mZR

OTN MEETING INVITE

Want to know more about [WorkAdvance](#) and how others are leveraging it?

Ohio TechNet's January Meeting will feature best practices and use cases of the WorkAdvance model, presented by the Ohio Manufacturers' Association.

Meeting Date: January 21st, 2025
Meeting Time: 8:30am

Email Ohio TechNet at ohiotechnet@lorainccc.edu to be added to the calendar invite!

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STRATEGIC FOCUS AREA #3:
INNOVATIVE EARN AND LEARN

Ohio TechNet provides technical assistance to partners working to advance innovative earn and learn models, bridging the gap between education and workforce needs.

Through strategic partnerships with industry, educational institutions, and workforce agencies, Ohio TechNet leverages resources to provide access to cutting-edge strategies that integrate hands-on learning with real-world work experiences. Innovative earn and learn programs work to develop a continuous talent pipeline.

Registered Apprenticeships

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Region 8 and Region 11: Patrece Scott – ACCESS to Manufacturing Careers Program

Patrece was first served through the ACCESS to Manufacturing Careers Program, a three-week training course offered by Towards Employment, and was hired by WLS Stamping. She entered Manufacturing Works pre-apprenticeship program, and later was accepted into the registered apprenticeship program with WLS, on an upward trajectory. This is a good example of multiple partners supporting one individual on a pathway towards registered apprenticeship (attached).
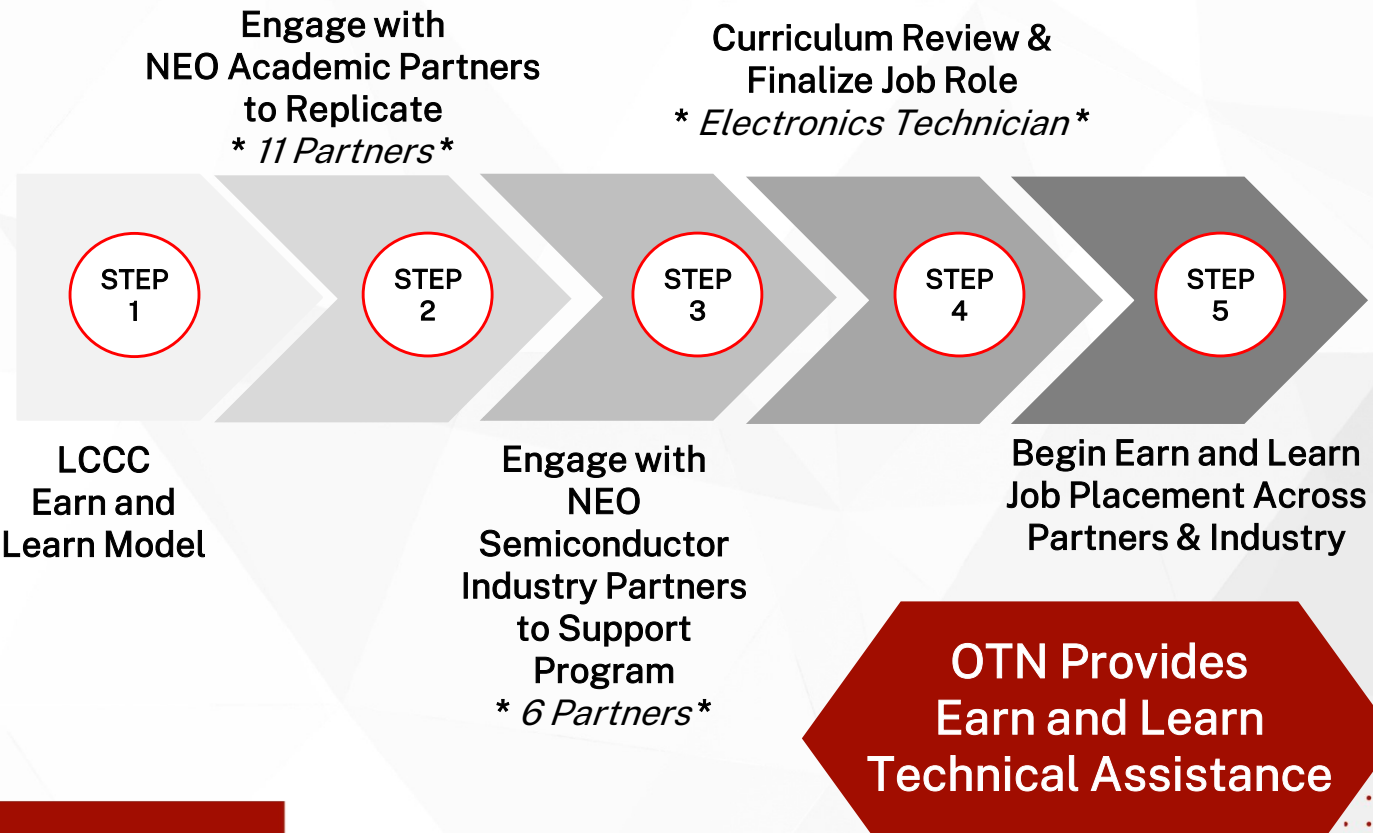

Region 11 Success Story: Richard Burgos – NOMAC Industrial Maintenance Mechanic Apprentice (Oatey)

Richard began On-the-Job (OJT) training and enroll in courses at Cuyahoga Community College. In his first semester, Richard completed 3 courses and scored straight A's. He received the Journeyperson's Card and the Mechatronics Automation Certificate in the spring of 2021, as well as a 32% pay increase from his starting wage upon completion of the program.

Region 2: Samantha Backus – Manufacturing Engineering Technology (Grob)

- In her junior year of high school, Samantha enrolled at Vantage Career Center to pursue Machining and CNC Programming. At Vantage, she was a National Honor Society member, National Technical Honor Society, Student Ambassador, SkillsUSA, and graduated with honors.
- Samantha placed first in the state and fifth at Nationals for SkillsUSA in CNC Lathe Programming.
- She is currently a second-year apprentice at GROB systems in the mechanical department.

Scaling Earn and Learn

OhioTechNet

Lorain County Community College

Team neo

- Continuing to **build and develop the talent pipeline by expanding the earn and learn programs** into additional academic institutions

- In partnership with OMA, engaging employers In the earn and learn model

RESOURCES:

EARN Earn and Learn Replication Guide

OMA Earn and Learn Strategies Guide

Engage with NEO Academic Partners to Replicate ** 11 Partners **

Curriculum Review & Finalize Job Role ** Electronics Technician **

STEP 1

STEP 2

STEP 3

STEP 4

STEP 5

LCCC Earn and Learn Model

Engage with NEO Semiconductor Industry Partners to Support Program ** 6 Partners **

Begin Earn and Learn Job Placement Across Partners & Industry

OTN Provides Earn and Learn Technical Assistance

STRATEGIC FOCUS AREA #4: FACULTY & EDUCATOR DEVELOPMENT

Finding new ways to engage and prepare faculty and other educators to support manufacturing and tech education and training is a recognized shared challenge across Ohio and the U.S. Ohio TechNet has helped secure significant federal and philanthropic investment to support our state's work to equip more educators with cutting-edge knowledge and training, informed directly by industry.

Faculty and educator development fosters innovation in teaching methodologies, aligns curricula with industry needs, and enhances student success.

Faculty & Educator Development
Models & Programs

Industry 4.0 Teacher Training

- **Automation and Robotics,** at LCCC
- **38 educators** total from 2021-2023
- 15 respondents to a follow-up survey in December 2024 had at that point **taught 167 students with curriculum developed following training**
- Program was re-designed in 2024 to increase flexibility and accessibility

Future Ready Educator Bootcamp: Exploring Industry 4.0

- Participants included **14 educators from eight diverse institutions across Ohio**
- Community College and High School Instructor Attendee
- Educators were empowered to bring Industry 4.0 concepts into their classrooms, ensuring their students have the skills necessary to thrive in an increasingly digital and automated world
- Offered by Lorain County Community College and Sinclair College
- Registration Open for January 2025 Cohort

OSCN Community of Practice

- OTN partnered with OACC and OSU HAMMER
- **75 Faculty, Instructors, and Instructional Designers** networked with others from community colleges, universities and career technical centers, to connect with employers, vendors, and other project leaders in the advanced manufacturing and semiconductor related space

Faculty Instructor Certificate

Led by Ashland University

- Industry to Educator
- Online training certificate to assist industry experts in learning how to take their industry expertise into the classroom!

Vacuum Systems Training

- **33 Faculty Members and Instructors** attended training at CWRU and LCCC to receive training on the semiconductor vacuum systems equipment

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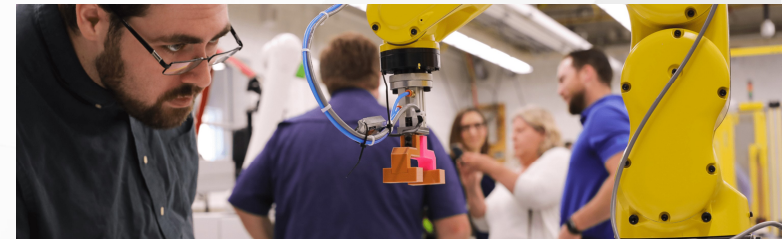
OTN Free Open Education Resources

Over 169,703 downloads from OTN, OMWP and WISE content collections within SkillsCommons!

SKILLS COMMONS
open for learning

Home → Most Popular Items

Most Popular Items

| | 10 results | Ohio Technical Skills Innovation Network | All regions | All time |

Item title	File downloads ▼	Item views	Sum
LCCC OTN Lead Team Resources documents	97,973	156	98,129
Ohio TechNet Lead Team Prior Learning Assessment (PLA) Train-the-Trainer Documents	3,889	191	4,080
Emergency Planning	2,158	679	2,837
OhioTechNet OTN Lead Team Resources	2,064	174	2,238
Ohio TechNet CAM 1109 Fundamentals of Tooling and Machining	1,866	216	2,082
Ohio TechNet LCCC, Maintenance Tech	1,580	176	1,756
OSHA Guide to Industrial Hygiene	1,463	810	2,273
LCCC OTN Lead Team Evaluation documents	1,111	134	1,245
Ohio TechNet LCCC OTN Lead Team Data Tracking Documents	981	134	1,115
Ohio TechNet Data Tracking Grant Management Materials	777	170	947

WISE Pathways SkillsCommons

Automation and Robotics

Ohio Manufacturing Workforce Partnership Collection
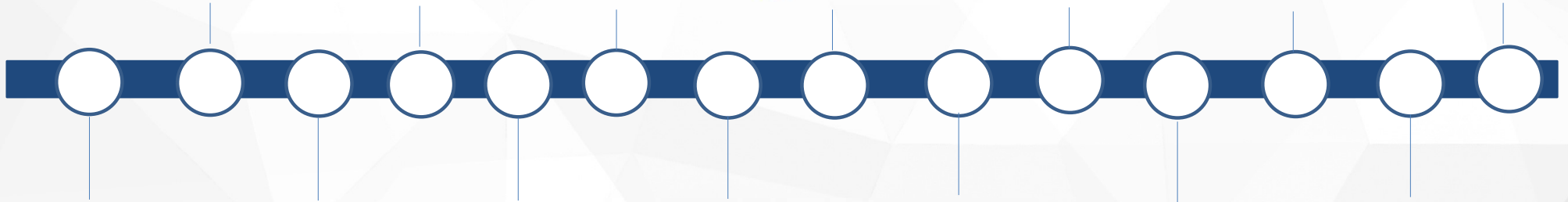
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STRATEGIC FOCUS AREA #5:
PARTNERING WITH INDUSTRY

Industry-educator collaboration is essential to meet the evolving demands of advanced manufacturing and technology sectors.

Ohio TechNet serves as a trusted "front door" for those seeking to pilot and have a ready infrastructure to scale what works. Partnerships with the ARM Institute, NextFlex, CESMII, and other Institutes within the Manufacturing USA network; the Ohio Manufacturers' Association, the Ohio MEP, National Defense Education Program, regional economic development leaders, industry-sector partnerships, and individual industry leaders directly informs our work to help bring capacity, resources and best practices to OTN education members in their work with industry leaders to develop a pipeline of highly skilled talent tailored to meet specific workforce needs.

Partner Collaboration

A Look Ahead: 2025

1. Ohio TechNet Industrial Assessment Center –
U.S. Department of Energy (3 Years)

2. Partner in OSU-Led Future Climate-Ready Workforce,
Great Lakes focus (48 months)

3. Semiconductor and Microelectronics: Workforce
Development Partner with the Midwest Microelectronics
Consortium and continued partnership with the Intel SERP

4. DOE Clean Energy Workforce Projects

5. Univ. of Toledo-"Enhance the Hydrogen Economy"

Stay Tuned in 2025 for
a 10 Year Celebration
Announcement

OhioTechNet
Celebrating 10 Years!

"Can I add just one more item to your workload?"

2025 OTN Monthly Meeting Schedule

OhioTechNet

JAN — Reaching New Audiences
Work Advance Best Practices

FEB — Partnering with Industry
AI Focus

MAR — Innovative Earn and Learn

APR — Faculty & Educator Development

MAY — K-12 Engagement

JUN — Reaching New Audiences

JUL — Partnering with Industry

AUG — No Meeting Start of Semester

SEP — Innovative Earn and Learn

OCT — Faculty & Educator Development

NOV — K-12 Engagement

DEC — Year End Review

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SEE YOU NEXT YEAR!!

THANK YOU!
www.ohiotechnet.org
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