



Cincinnati State Technical and Community College

Braided Funding: A Success Story

Cincinnati State Technical and Community College has leveraged funding from a variety of sources to meet talent and technology needs of companies in the advanced manufacturing space. This has led to opportunities for cross-team collaboration within institutions, and lays the groundwork for the sustainability of Ohio TechNet innovations.

Cincinnati State opened its state-of-the-art welding lab on its Clifton campus in April 2016. The new lab serves students in the college's associate degree program, as well as those enrolled in short-term certificate programs. The facility offers 12 welding booths and virtual welding resources. This project incorporated braided funding from the TAACCCT grant, the State of Ohio, and a private donor via the Cincinnati State Foundation. Contributions from the TAACCCT grant helped purchase \$164,000 in equipment and other sources totaled to \$197,532.

Training at this state-of-the-art facility is connecting students to higher paying jobs!

Lauren was working 20 hours per week earning \$4/hour plus tips as a waitress when she started the Accelerated Welding program. Coming into the program with the advantage of having

some welding background at a local career center, Lauren had a great foundation in the fundamentals of welding. However, she needed to fine tune those skills if she had any hope of finding a full time welding position. Lauren enrolled in the first Accelerated Welding Cohort and did very well in the class. She worked with the Job Coach shortly after completing the coursework and started getting calls for interviews right away. Lauren accepted an offer with Eastern Sheet Metal at \$14.40/hr. Now as a welder, she has a set income and is succeeding in a career field of her choice.

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Columbus State Community College

Partnering with community-based organizations to train transitioning adults

Columbus State Community College has developed partnerships with government and community organizations such as Central Ohio Workforce Investment Corporation (COWIC)/OhioMeansJobs, Columbus Urban League, and the Ohio Association of Food Banks (OAFB) to assist in participant recruitment. These relationships are key to connecting with transitioning adults, and will positively impact participant outcomes.

Columbus State's relationship with Ohio Association of Food Banks has been particularly successful. With funding to cover required workforce activities, including training, OAFB welcomes Columbus State staff to attend monthly orientation sessions for clients. Shortly after the partnership was developed, eight participants signed up for training at Columbus State in one day. This trend is expected to continue.

The OAFB was instrumental in the launch of Columbus State's Maintenance Awareness class. This support, coupled with the hiring of a participant facilitator, has positively impacted grant results by increasing the number of participants enrolled in the Maintenance Awareness class.

The participant facilitator guides each potential participant through the admissions process and encourages participant retention.

Ohio TechNet considers this to be a replicable program that may benefit transitioning adults in other regions of the state.

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Accelerated training and strong industry partnership has led to student success at Cuyahoga Community College (Tri-C). Tri-C has replicated a successful model of creating credit bearing, stackable certificates of training awards in alignment with the American Welding Society National Certifications. Each student can achieve two stackable short term certificates while earning a 1-year certificate of proficiency. This totals 31 credit hours and three credit-based awards toward an Associates degree in Integrated Systems Engineering Technology with an emphasis on Welding. The curriculum and hands on training is designed to prepare the student to take the national welding certification tests in accordance to American Welding Society standards and regulations.

Great Lakes Towing, Hosemasters, Ohio Grating, Anchor Manufacturing, Engineered Endeavors and Cargill have hired Tri-C's Ohio TechNet participants.

Great Lakes Towing supported Tri-C's Welding program by hiring three students:

Raven was earning \$10/hour working in unskilled labor before enrolling at Tri-C. He excelled at welding, earning three American Welding Society (AWS) certifications during a ten-week training program and landed an internship at Great Lakes Towing. After starting the internship, Raven was hired on full-time with a pay raise, earning \$17/hour. "The entire experience has changed my life one hundred times over and I can finally say I have a career that will take me all over the world."

Before starting welding classes at Cuyahoga Community College, Don was employed full-time, but wanted to find a new career. Finding the schedule convenient and tuition affordable, he quickly signed up for the Fast Track Welding Bootcamp, earning four welding certifications and landing an internship with Great Lakes Towing that later turned into a full-time job.

Similarly, Darwin was feeling there was no way for him to advance within his current job. After completing the Fast Track Welding Bootcamp program and earning four welding certifications along the way, he was hired on for an internship at Great Lakes Towing. The internship opened the door for a full-time opportunity with this employer.

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Eastern Gateway Community College

Articulation agreements provide pathways to success

The TAACCCT grants have significantly impacted Eastern Gateway Community College (EGCC) and the surrounding communities will benefit from this investment.

Through TAACCCT funding, Eastern Gateway was able to develop a machining lab and a welding lab equipped with state-of-the-art equipment. EGCC has been working with the Mahoning Valley Manufactures Coalition to develop specialized programs for business for the non-credit training of their employees as well as being able to offer new students different pathways of specialization in manufacturing. EGCC is working with the local Ohio Mean Jobs office to develop several short term welding programs that will enable students to obtain the education and training they need to gain employment, in a reduced amount of time. EGCC is still running its accredited Associate Degree program and looks to bolster the numbers of participants as time goes on.

EGCC is also working on articulation agreements between the local career and technical centers as well as Youngstown State University (YSU), providing more options for students and businesses. The development of the articulations between the career and tech centers will allow students to expedite their training. The coordination between YSU and

EGCC will allow the students to have options beyond just the two year degree.

All of the programs listed above have enabled EGCC to reach a diverse population of students from the Youngstown area and surrounding communities. As we continue to grow our programs, the ability for students to get comprehensive training as well as specialized training will allow them to succeed in manufacturing.

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Lakeland Community College

Accelerated Training Results in Pay Increases

The Ohio TechNet TAACCCT grant has allowed Lakeland Community College to expand their partnership with regional employers who have a need for welders. Lakeland's Associate of Technical Studies degree features short-term technical welding programs, American Welding Society certification preparation, and career coaching. This program is positively impacting students by connecting them with new careers that provide family-supporting wages! Here's a preview:

Brendan was working two part time jobs following graduation from high school. He entered the Industrial Welding Program in Fall, 2015 and completed five Welding courses. He is now working full time in the pipe industry earning \$ 26.00/hour.

When Zach began taking classes in Fall, 2016 he was working as a cashier earning \$ 8.20/hour. During his first semester, he obtained a position as a fabricator earning \$12.00 hourly. Zach is a straight A student and continues his studies.

Jay entered the Industrial Welding Program in Spring, 2016 working as a welder earning \$15.00/hour. He successfully completed four academic credentials and is currently earning \$18.00/hour with his new employer.

Mark was not employed when he entered the Industrial Welding Program in Fall, 2015. He has successfully earned three academic credentials and is now employed as a welder earning \$14.00/hour.

Matt completed his technical welding courses at Lakeland in May, 2016 and quickly got a position as a welder-fabricator in Willoughby, Ohio earning \$15.00/hour, a considerable increase from his previous \$10.50 hourly wage. Matt is thrilled to have a position with "a good company, nice people and great pay!" He expresses his appreciation for his instructors Ryan Eubank and Jesse Srpan for "not just teaching me the art of welding – but also passing on great life lessons that will help me become more successful as I grow in the trade!"

First time Industrial Welding student, Tyler, was earning \$8.50/hour when he enrolled. He earned the GTAW (TIG) Welding Certificate in July, 2016 and successfully attained three other American Welding Society GTAW certifications. These new skills sets helped him land an \$11/hour position with a steel service center company.

Paul was unemployed and began Industrial Welding Classes in Spring, 2016. He has since completed 11 Welding Courses with straight A's, earning numerous American Welding Society Certifications. He obtained employment as a spot welder earning \$15.00/hour and is on the supervisory track with his new employer. Paul continues his Welding studies at Lakeland in pursuit of the Associate of Technical Studies in Industrial Welding degree.

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The Future of Workforce Development Leadership: Collaboration Built for Purpose

Leveraging investments made by the Ohio Department of Higher Education in state of the art educational facilities, a highly innovative academic team, strong economic development and employer partners and the collaborative infrastructure of Ohio TechNet, Lorain County Community College was able to rapidly deploy an innovative earn and learn program in the Fall of 2016 called TRAIN Ohio.

TRAIN Ohio blends school and work into a 21st century earn and learn hybrid activity where companies and educators integrate activities in both space and time. A focus on MicroElectrical Mechanical Systems (MEMS), an existing program of study at Lorain County Community College designed to operate in concert with its SMART Center for Microsystems, was used to pilot this earn/learn model. The goal is to expand the model to include other areas of mechatronics, which brings together industrial maintenance studies in both electrical and mechanical areas

The TRAIN network builds on existing collaboration with manufacturing companies in the region involved with microelectronic assemblies and flexible hybrid electronics (FHE) who are part of a SMART Devices innovation cluster led by Team Northeast Ohio (NEO), a regional economic development entity. Other partners include the University of Akron College of Polymer Science and Polymer Engineering, employers and other local manufacturing intermediaries.

The strength of this regional collaboration led to an investment of \$100,000 by NextFlex, a public-private consortium of companies, academic institutions, nonprofits and governments with a mission to advance US manufacturing of flexible hybrid electronics. NextFlex encourages investment in the manufacturing ecosystem for this exciting technology, in return for receiving intellectual property, new product ideas and partnering opportunities.

<http://www.crainscleveland.com/article/20161115/NEWS/161119792/lorain-county-community-college-led-workforce-program-wins-national>

Example of Student & Industry Impact

Nordson, a TRAIN Ohio advisory committee employer, has partnered with Lorain County Community College to utilize a student in the TRAIN Ohio for MEMS program cohort to assist in a research project. Responsibilities of this student include the testing of components before and after a plasma treatment for electronic functionality, recording and analyzing data, and reporting to the research team – results have the opportunity to be published nationally and will have the opportunity to be presented at an international conference in Amsterdam, alongside of SMTA International. The student involved in research is making \$10/hour, and is working 20-25 hours a week.

Learn more about students in MEMS courses and internships:

<https://www.lcccproud.com/2017/04/students-find-success-in-microelectromechanical-courses-and-internships-through-lccc/>

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Northwest State Community College

Hybrid Training Model Helps Manufacturers Succeed

There is a better way to learn at Northwest State Community College. Hybrid classes deliver training to employees in a way that keeps them on the job as they learn. Traditional models require students to leave work or family and to spend hours in a classroom listening to instructors discuss bookwork and worksheets. Northwest State Community College has created an intensive hybrid model that allows students to access learning materials, including labs, 24/7 over the internet. Students complete the knowledge assessments at home, then come into our flexible lab space to test their ability one-on-one with an instructor.

This model has had immediate results! Students are able to learn 10% more material in half the time because classes have moved from 16-week to 8-week modules. Students complete courses at their own speed without being allowed to fall behind. They come to campus less, but are learning more. Equipment and instructors are available based on student need, not college restrictions. In the first year graduation rates increased by 58%!

Today's manufacturers are looking for certified maintenance personnel to fill the vacancies of those who are retiring and they are looking for candidates with credentials! The intensive hybrid model accelerates learning and completion. 70 of these students have been placed in internships. Northwest State Community College has developed new business relationships in the region, and has become the go-to when recruiting employees. Many employers contact us before they post an opening anywhere else.

"I participated in the first Industrial Automation Maintenance (IAMs) program offered by Northwest State Community College with grant funding by WSOS. My education and hands-on-skills obtained from the IAMs certification program is being applied directly to my work today – electronics and industrial circuits, Allen-Bradley programming, FANUC robotics programming, electric motors and variable frequency drives, machine repair, and electro-pneumatics."

-Douglas Krouse

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Owens Community College

Braided Funding Impacts Training for Transitioning Adults

Owens Community College has successfully braided funding to improve welding and CNC/machining training.

Through Ohio TechNet, the Department of Labor contributed approximately \$62,500 in equipment and the Gene Haas Foundation contributed more than \$28,000 in scholarships and equipment.

Funding was also leveraged to establish a unique training partnership. Through a White Paper funding opportunity, Owens has the opportunity to partner with the Cherry Street Mission Ministries. The Cherry Street Mission is the largest organization serving low-income and homeless men, women, and children in the 14 counties of Northwest Ohio and Southeast Michigan. Funds were allocated to the college to establish an educational experience in machine tool technology on-site in downtown Toledo to benefit both participants and employers.


Trainees will include Ohio TechNet participants, who will earn a Tool & Die Certificate from Owens upon successful completion of training. Further, Owens staff will be on-site to provide supportive services. This partnership illustrates Owens' creativity in meeting industry needs and simultaneously serving the unemployed, under-employed, and other transitioning adults.

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Rhodes State College

Responding to Industry Need: Expanding Apprenticeship Programs

Rhodes State College (RSC) has seen an increase in apprenticeships in recent years. Employer partners include Grob Systems, Ford Motor Company, Production Products, Inc., Progressive Stamping, Inc., Dana Holdings, Koneta Rubber, DTR, Coldwater Machine, Whirlpool, and Miller Precision.

The apprentice program is part of an educational pathway allowing students to earn multiple certificates, degrees and an industry recognized credentials. Rhodes State provides Related Instruction for both Registered Department of Labor Apprenticeship Programs and non-registered apprenticeship programs. Apprentices earn RSC credit for all Related Instruction in various skilled trade fields of study including Electrical, Machine Repair, Millwrights, Multi-skilled, Powerhouse, Plumber/Pipefitter, Tool and Die, Toolmaker and Quality.

On October 24, 2016, Rhodes State College became Ohio's first community college to receive approval from the State of Ohio Office of Apprenticeship to be designated as a Department of Labor Registered Apprenticeship Sponsor. The Community College Apprenticeship Sponsorship model is especially attractive to small and medium sized businesses who may not have the resources to initiate and support some of the administrative requirements needed to create an apprenticeship program.

Due to Rhodes State College's leadership in the development of apprenticeship programs, Margo Meyer, Ohio TechNet project manager at RSC, has been designated to assist other Ohio TechNet schools seeking to expand Registered Apprenticeships. Through partnership with the Ohio Department of Job and Family Services, Margo is working with several OTN schools in the development and expansion of manufacturing apprenticeship programs.

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Sinclair Community College

FlexPace Fosters Innovation in Manufacturing Training

As a result of Ohio TechNet participation, two Sinclair branches — Workforce Development and Sinclair Academia—which have historically worked as separate entities, have come together organizationally and functionally to offer competency-based programs serving Advanced Manufacturing students. A direct result of this collaborative effort, is the creation of a new ATS degree to support the goals of TAA-certified students interested in pursuing a combination of workforce and academic courses. The innovative curriculum is unconfined by academic boundaries, and allows students to mix and match courses from Workforce Development's Industrial Maintenance program with an HVAC academic program to earn an associate's degree.

Additionally, Sinclair's new automatic credit articulation process has enabled all grant-affected Workforce Development students to earn credit toward an AAS degree, which is yet another outcome of the grant-induced collaboration between credit and non-credit programs. To date, over 400 articulated academic credits have been awarded to Workforce Development Industrial Maintenance students.

On the credit side of the house, Ohio TechNet funding has facilitated Sinclair's launch of "FlexPace", a new accelerated certificate model which permits students to start and finish flex-paced, competency-based, hybrid machining courses according to their schedules. At present, this model has garnered significant success.

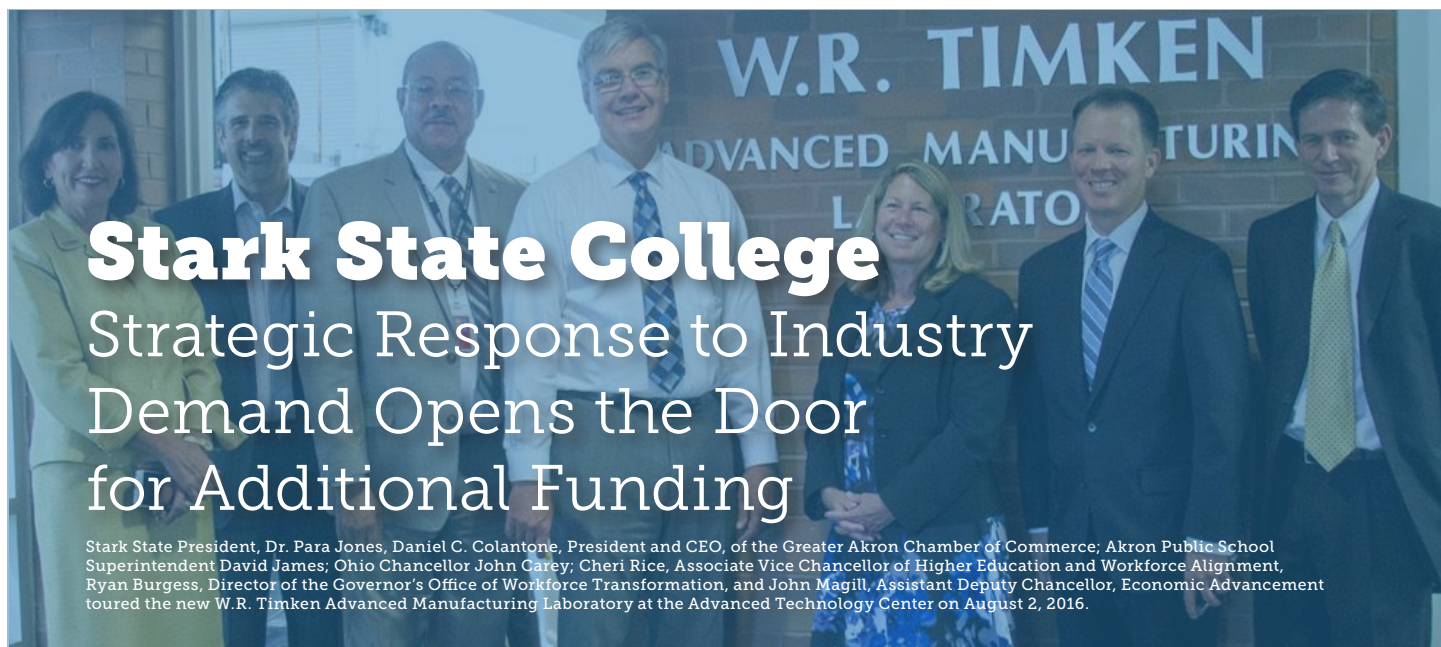
Here are a few examples:

- Students in the Accelerate MFG Basic Machining program are finishing 16 week courses in an average of 10 weeks.
- To date, the fastest course completion has been 3 days.
- 68 students have accelerated their certificate and degree completions using FlexPace courses as part of their curriculum.
- Flexibility and fewer trips to campus mean that CBE students are retained at a rate 11% higher than traditional Sinclair students.

**SINCLAIR**
 **FLEXPACE**

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Stark State President, Dr. Para Jones, Daniel C. Colantone, President and CEO, of the Greater Akron Chamber of Commerce; Akron Public School Superintendent David James; Ohio Chancellor John Carey; Cheri Rice, Associate Vice Chancellor of Higher Education and Workforce Alignment, Ryan Burgess, Director of the Governor's Office of Workforce Transformation, and John Magill, Assistant Deputy Chancellor, Economic Advancement toured the new W.R. Timken Advanced Manufacturing Laboratory at the Advanced Technology Center on August 2, 2016.

Ohio TechNet Grant funding was a critical piece in bringing Stark State College's new manufacturing lab to fruition, said Dr. Para M. Jones, the College's president.

"Thanks to the U.S. Department of Labor TAACCCT funding received under the Ohio TechNet Grant, Stark State was able to leverage follow-up funding from the Timken Foundation to equip our new world-class WR Timken Advanced Manufacturing Lab," Jones said.

The lab boosts training capability for several of Stark State's manufacturing partnerships, including one with Ariel Corporation, the world's largest manufacturer of separable reciprocating gas compressors. The lab also is used by students in apprenticeship programs for Kyocera SGS Tool, as well as the corporate training program for Timken Research prototype technicians.

The new machinery includes:

- Four HAAS CNC lathes
- Four HAAS CNC mills
- HAAS CNC mill (5 axis capability)
- Six numerical control / manual lathes
- Five numerical control / manual mills
- Surface grinder
- Mitutoyo Coordinate Measuring Machine
- Complete simulation lab with 14 HAAS simulation trainers
- Dimensional metrology lab
- Variety of layout and tooling

The Lab also includes an additive manufacturing cell with:

- Stratasys Fortus 450 MC 3D printer
- Stratasys Objet 500 Connex3 3D printer

The Department of Labor contributed \$524,288 via the TAACCCT grant and \$321,585 was leveraged through other sources. Equipment has allowed Stark State College to expand training capabilities in advanced techniques desired by manufacturing companies. In response to industry demand, the lab is currently in use around the clock.

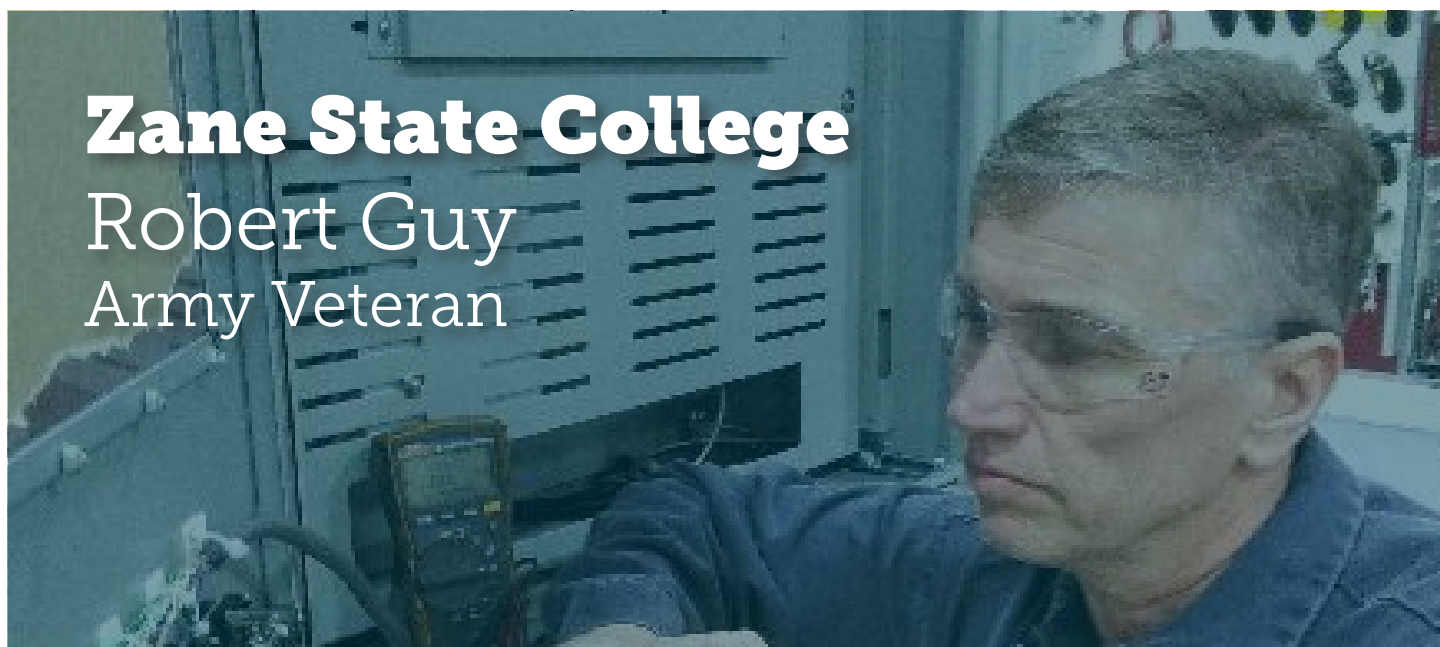
In the 2016 Fall Semester, Stark State was able to offer four NIMS credentialing exams which resulted in the awarding of more than 50 NIMS certificates. It is projected that the number of NIMS credentials awarded will increase in future semesters. As this program continues to expand, Stark State is utilizing a \$20,000 Gene Haas Foundation grant to provide scholarship funding to students in need of tuition assistance.

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Zane State College

Robert Guy Army Veteran

Robert Guy, a United States Army veteran (1983-1986), became a displaced worker after being laid off from EMCO USA in 2014. Guy became eligible for Trade Adjustment Assistance after his layoff, and decided to put these benefits to use at Zane State College.

Guy enrolled in Zane State College's Industrial Systems Engineering Technology program, which built on skills he'd acquired at EMCO. He also opted for an additional major in Welding. Both programs were enhanced using TAACCCT grant funding. Guy became an exemplary student, making the Dean's List every semester. He graduated with Associate's degrees in both fields on May 7, 2016, with a 3.958 GPA and summa cum laude honors. He also earned a certification as an AWS D 1.5 Bridge Welder during his tenure at Zane State College.

"The program helped me get back on my feet," says Guy. He credits faculty members Deanna Duche and Mark Gerko with making his academic success possible. "I chose the ISET/WELD programs because the job market was... favorable for this area," he says.

Upon graduation, Robert Guy received three job offers. One offer was for a position generally reserved for applicants with bachelor's degrees, but Guy's resume wowed the search committee. Robert Guy ultimately landed at LMI in Cambridge, where he uses the skills he learned in both areas.

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