

EU STUDY TOUR 2024

April 12–24



Preparing Technicians for the
FUTURE OF WORK

OUR PROJECT



Preparing Technicians for the Future of Work is a US National Science Foundation project facilitating regional collaboration between community college educators and their industry partners to determine the impacts of emerging technologies on the need for highly skilled workers. The project is led by the Center for Occupational Research and Development (CORD), a national nonprofit organization with a 45-year history of helping educators and workforce development professionals prepare learners for success in college and careers.

Through a series of meetings, the project has identified three broad skill areas that are increasingly important for graduates of community college advanced technology programs.

- Advanced Digital Literacy
- Data Knowledge and Analysis
- Business Knowledge and Processes

Skills within these three foundational areas apply across industry sectors and play a role in the invention and adoption of new technologies.

College faculty submitted competitive applications and were selected to participate in the project's EU Study Tour visiting Spain and Germany. The participants wish to learn about how the adoption of new technologies affects technician training, educational program design, and school relationships with companies that hire program graduates. During the visit, they will observe practices that could be implemented at their home campuses and will report their findings to a national audience of their peers in July.





WHY WE ARE GOING

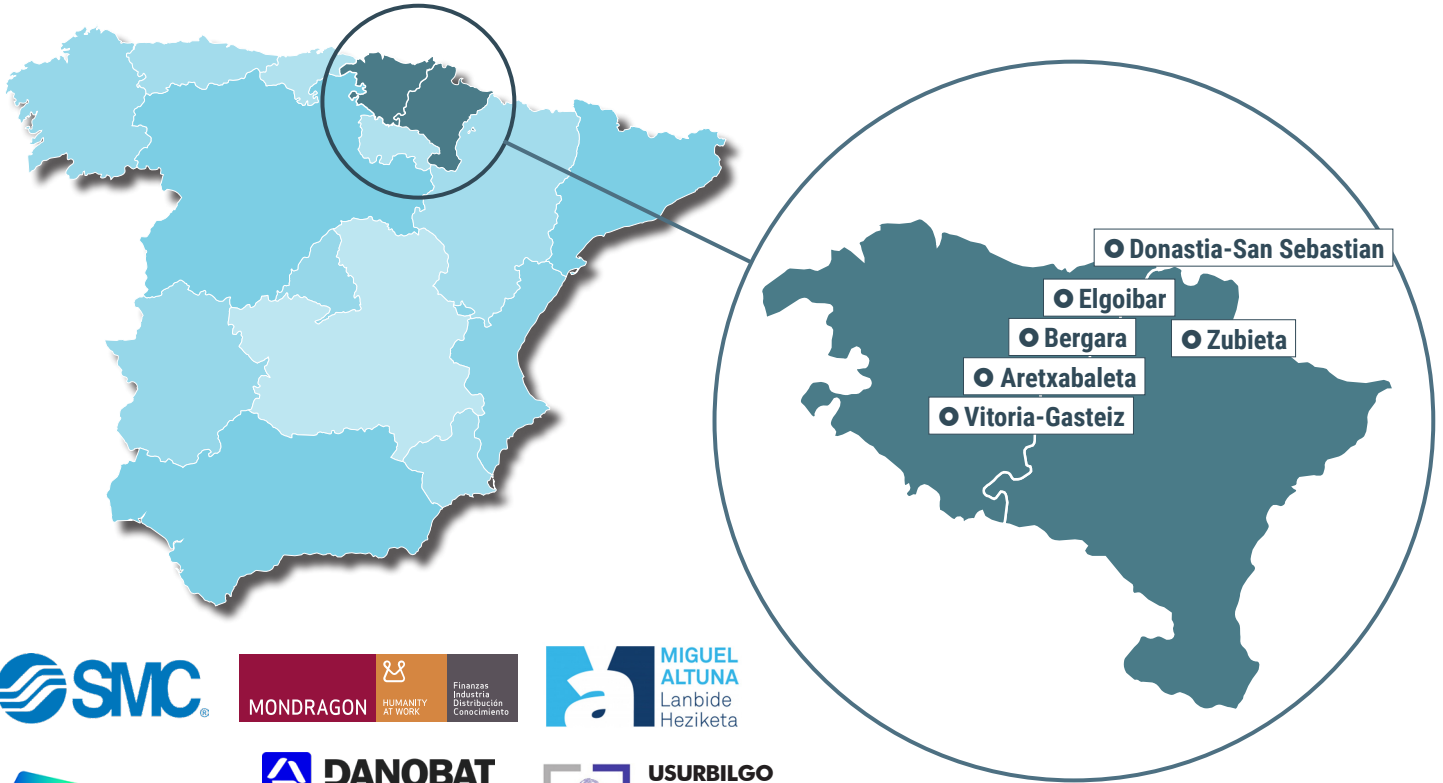
The changing nature of work raises many questions for the US career and technical education (CTE) system about how to prepare skilled technicians. As work changes and the pace of innovation accelerates, technicians will need to acquire new skills. Because this phenomenon is global, there is value in looking at how other countries are responding to these realities. The EU, with its highly developed economies and multiple approaches to what they refer to as vocational education and training (VET), offers potential lessons for the US CTE system. Participants in the EU Study Tour hope to examine practices such as the following:

- Implementation of multiple entry and exit points;
- Creation of educational pathways between VET and more traditional academic study;
- Recognition of non-institutional learning;
- Granting local authorities the ability to adapt and shape curriculum to local industry needs;
- Modularization of curriculum;
- Development of structures for work-based learning;
- Training and professional development in industry for VET teachers; and
- Financing VET for workers (youth and adults) and employers.

TOUR SITES

Spain

The team will visit seven sites in the Basque Autonomous Community and Navarre province in northern Spain: SMC (Vitoria-Gasteiz), Mondragon Corporation (Aretxabaleta), Miguel Altuna LHII (Bergara), IMH Campuses (Elgoibar), Danobat (Elgoibar), Usurebilgo Lanbide Eskola (Zubieta), and Tknika (Donostia-San Sebastian).



Germany

The tour will also include three sites in Germany: Hannover Messe (Hannover), Siemens (Chemnitz), and Festo (Stuttgart).



FACULTY PARTICIPANTS

Chuck Bales

Program Coordinator / Professor, Automation & Engineering Technology
Moraine Valley Community College



Chuck has taught and developed curriculum for mechanical design, CAD, automation, and engineering technology for twenty-nine years. He holds bachelor's and master's degrees in mechanical engineering from the University of Florida and a bachelor's degree in industrial technology from Southern Illinois University at Carbondale. As a program coordinator, full-time faculty member, and academic researcher, he has developed and taught numerous engineering and technology courses and created several new degree and certificate programs at his college. Chuck has been actively involved in grants as a co-principal investigator, researcher, and developer for the U.S. Department of Education, National Science Foundation, National Security Agency, and U.S. Department of Labor since 1994. He also holds numerous professional certifications in the fields of information technology and networking, manufacturing and robotics, and computer-aided design.

Chris Blaisdell

Mechatronics Instructor
South Central College



Chris holds a degree in manufacturing engineering technology from Minnesota State University, Mankato. He has been teaching at SCC for three years. His educational interests include PLCs, sensors and controls, Industry 4.0, industrial mechanics, and electricity. His program prepares graduates for careers in industrial maintenance and industrial automation. He is always eager to learn new things and expand his horizons. That's why he is thrilled to participate in the EU Study Tour. The tour will allow Chris to visit some of the leading industries and educational institutions in Europe and learn from their best practices. Chris hopes to gain valuable insights and inspiration that he can bring back to his college and industry in greater southern Minnesota. He looks forward to sharing his experiences and knowledge with colleagues and students and fostering international collaboration and exchange.

Kristine Christensen

Professor of Computer Information Systems
Moraine Valley Community College



Kristine has taught and developed curriculum in website development, user interface design, programming, networking, robotics, and engineering technology for the past twenty years. She also serves as Moraine Valley's director of faculty development and is responsible for designing, developing, and evaluating professional development programs for faculty and staff. She has been actively involved in research and curriculum development for grants awarded by the National Science Foundation, National Security Agency, and National Centers of Academic Excellence. Kristine earned degrees in business and industrial psychology, an MBA, and master's degrees in management information systems and teaching and learning. She also holds a PhD in community college leadership and is pursuing master's studies in mass communications and cybersecurity. Joining the EU Study Tour, she seeks to broaden her pedagogical strategies and foster international educational collaborations. Her goal is to enhance her students' learning experiences by incorporating global insights and strengthening industry-education partnerships.

Marci Gale

Mechatronics Faculty and Program Head
Central Virginia Community College



Marci has ten years of engineering experience and three patents in the telecom industry and ten years of experience as a faculty member, teaching traditional, adult, dual-enrolled, and workforce solution students. She has won several college- and state-level teaching awards, including Outstanding Faculty in 2021 and the 2022 Faculty Community Impact Award. Marci is PI for her second NSF ATE grant, *Improving Advanced Manufacturing Technician Education Using Industry Partnerships*, and is involved in improving access to higher education programs for underserved populations through several community poverty-fighting organizations. She holds a BS in electrical engineering, with a minor in computer science, from the University of Virginia, and an MS in occupational and technical studies with a concentration in career and technical education from Old Dominion University.

Bryan Kasun

Instructor of Advanced Manufacturing
Gateway Technical College



Bryan's experience at Gateway comes from more than twelve years of in-the-field engineering experience that he is able to apply to his career every day. Bryan's expansive knowledge of 3D printing, manufacturing, PLCs, programming, robotics, controls, and electrical and mechanical engineering enables him to work in many areas while on campus. Bryan also instructs customized business workforce solutions classes for company training and apprenticeship programs. Bryan has a side business doing 3D printing and prototyping and regularly brings back skills and intel learned from starting a small business and incorporates them into the classroom when working with students. Bryan is looking forward to participating in the EU Study Tour and is proud to have been selected for this unique opportunity. Through the engagement, he looks forward to bringing back valuable knowledge that he can incorporate into the classroom and into other programs college wide.

Justin Starr

Endowed Professor of Advanced Technology, Mechatronics Program Coordinator
Community College of Allegheny County



Justin works to integrate advanced technology into CCAC's course offerings such as augmented reality, electron microscopy, and collaborative robots and serves as PI or Co-PI on fourteen federal and state grants supporting research into effective credit-noncredit collaboration. Justin previously served as CTO of RedZone Robotics, a manufacturer of water and wastewater inspection robots, and a fractional COO for a number of private equity-backed firms in the high-tech space. Justin holds fourteen U.S. patents for inventions in robotics, artificial intelligence, and automation and was named an Engineering Unleashed Fellow and HI-TEC Fellow for his work with high-impact technologies. Justin earned an AS in general studies from CCAC, a BS in engineering science from the University of Virginia, and MS and PhD degrees in materials engineering from the University of Florida. He is the author of *Water and Wastewater Pipeline Assessment Technologies*, a leading text on underground inspection.

Rick Vaughn

Faculty Chair, STEM Initiatives
Rio Salado College (one of the Maricopa Community Colleges)

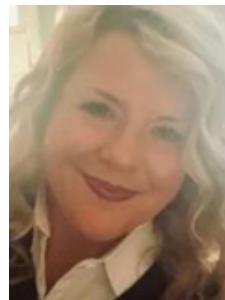


Rick leads in-person, hybrid, and online technology programs in cybersecurity, programming, semiconductor manufacturing, precision optics, and blockchain at Rio Salado College. While his primary role is to hire, train, supervise, and schedule adjunct faculty in these areas, he has taught courses in computer science, micro- and nanotechnology, and computer information systems for the past two years. He is the PI on an NSF ATE grant for hybrid technology training for MNT and a Co-PI on a national microelectronics and nanomanufacturing certificate program grant out of Penn State, which provides twelve weeks of non-credit semiconductor training for veterans. Recent work has centered on the launch of a microcredential pathway and a certificate of completion in precision optics in January 2024. His study will focus on the EU perspective on OT and IT convergence and particular models of workforce preparation that might be translatable to the United States and Maricopa County in particular.

PROJECT LEADERS



Jennifer Jirous-Rapp
Lead for EU Study Tour
Vice President, Pathways & Partnerships
Center for Occupational Research and Development (CORD)

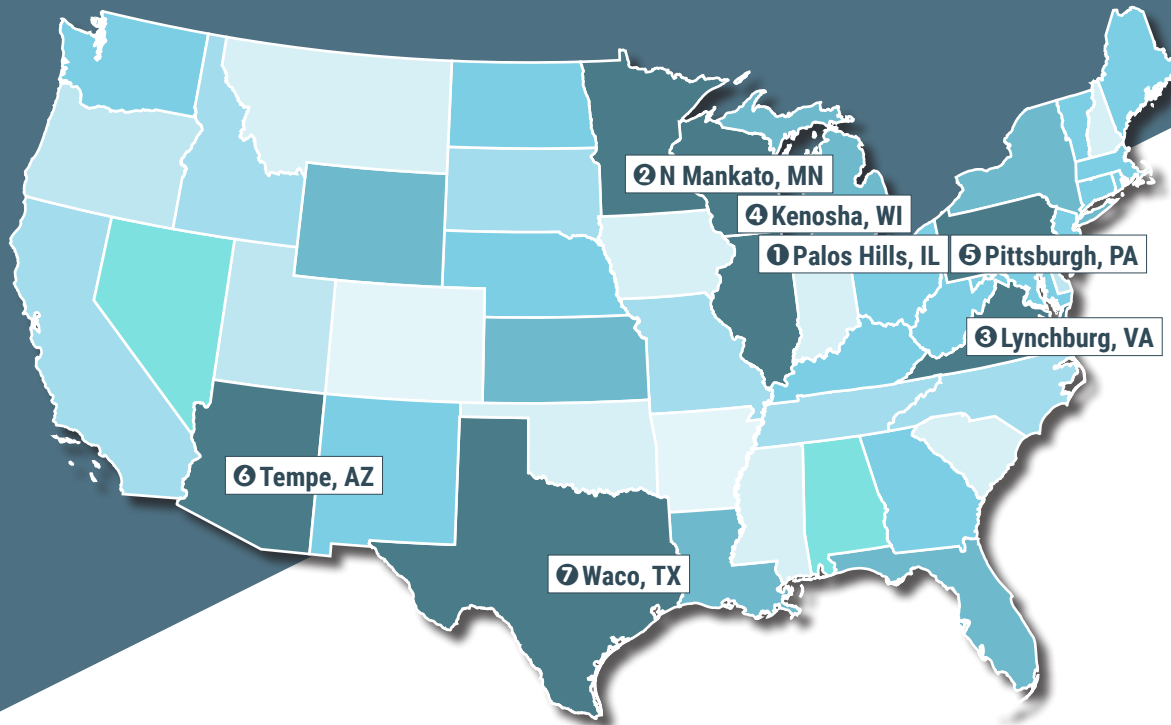


Liz Ahlers
Project Manager
Center for Occupational Research and Development (CORD)



WHERE WE CALL HOME

① Moraine Valley Community College, Palos Hills, Illinois; ② South Central College, North Mankato, Minnesota; ③ Central Virginia Community College, Lynchburg, Virginia; ④ Gateway Technical College, Kenosha, Wisconsin; ⑤ Community College of Allegheny County, Pittsburgh, Pennsylvania; ⑥ Rio Salado College (one of the Maricopa Community Colleges), Tempe, Arizona; ⑦ Center for Occupational Research and Development (CORD), Waco, Texas





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