



From the Director ...

NCATC Friends and Colleagues,

2018 is NCATC's 30th Anniversary! NCATC was founded in 1988 from a public/private collaboration of industry and education partners with advanced technology and manufacturing expertise to lead and advance workforce development curriculum, programs, and initiatives. Since then, our ATC network of community and technical colleges has grown to over 170 institutions and 30 corporate Strategic Partners. You can view the NCATC Membership Map [here](#) and the 2018 NCATC Strategic Partners [here](#).

NCATC's Board has refined and approved the **2017-2020 Strategic Focus Areas**, which are guiding our activities, projects, and events for the next three years. We have cross-walked/mapped our five focus areas to strategies 1-4 of the **2017-2020 AACC Strategic Plan** for even greater national impact, value, and collaboration.

NCATC's Strategic Focus Areas Include:

1. Industry 4.0: Emerging Trends in Advanced Technology and Smart Manufacturing
2. Apprenticeships, Work-Based Learning, and Entrepreneurship in Workforce Development
3. Competency-Based Learning in Workforce Development
4. Industry-Recognized Credentials and Certifications
5. Adult Education and Learning Opportunities

You can find more details on each of the NCATC Strategic Focus Areas [here](#).

The NCATC Board of Directors and staff look forward to seeing you at the **2018 NCATC National Events**.

- We will be on the west coast for our **Summer Workshop**, hosted by **College of the Canyons in Santa Clarita, California, June 4-5, 2018**.
- For our **30th Anniversary Fall Conference, September 19-21, 2018**, we return to the home of two founding member colleges—**Cuyahoga Community College (Tri-C)** and **Lorain County Community College (LCCC)** in **Cleveland, OH**.



For more event details, visit ncatc.org.

As always, we encourage you to stay regularly connected, via the NCATC [website](#), social media, and quarterly e-newsletters like this one.

J. Craig McAtee,
NCATC Executive Director

President's Message

Nick Graff, Executive Director, Advanced Manufacturing Technology Centers, Dallas County Community College District



"What everyone in the world wants is a *good job*." —Gallup Chairman, Jim Clifton from *The Coming Jobs War*

In his book, Clifton describes "how this undeniable fact will affect all leadership decisions as countries wage war to produce the best jobs." He says, "No business is trying to create jobs. They are all (working on) creating *customers*. Because jobs always follow customers."

As part of the Dallas County Community College District, I don't think this point can be overstated. Roughly 500,000 Dallas County residents live below the poverty level, which means they don't have family-sustaining incomes. In my opinion, this results in the ongoing disintegration of the family and the root of many of our nation's difficulties.

Nothing we do as educational professionals is more important than preparing our customers/students for the tech-savvy workplace. Advanced technologies permeate every industry today: healthcare, construction, service/retail, manufacturing, transportation and logistics, etc. Hands-on education and industry-specific credentialing provide the quickest path to a *good job*.

America's network of community and technical colleges is the key to filling those jobs and shoring up the skills gap. The National Coalition of Advanced Technology Centers (NCATC) represents the "best-of-the-best" institutions that are filling this crucial need.

I am honored to serve as NCATC Board President for our 30th Year Anniversary. As someone whose experiences in NCATC range from attending meetings as an exhibitor/presenter back in the mid-1990s and marveling at the talent and presence of its leaders to attending as a representative of a technical college, joining the Board, and then recently assuming the role of president, I've always viewed NCATC as the preeminent advanced manufacturing technology group.

But NCATC can still improve, increase its relevancy, and have an even greater influence on workforce development. Specifically, we want *your* Coalition to be inclusive, inviting, and responsive to your needs. Help us craft the NCATC message and direction this year—it's *your* organization!

NCATC's membership is composed of 170 colleges and 30 Strategic Partner Alliance companies representing "heavyweights" in advanced manufacturing. NCATC continually seeks news on current and emerging trends in advanced technology and manufacturing from its membership. Each member has a shared responsibility to keep the network informed about what is happening in their regions, particularly in-demand services and emerging trends. Let us know what clients are telling you is at the forefront, in terms of training/curriculum, equipment, safety, trends, and emerging technologies. The more you share, the richer we can make the information exchange across the network. ♦

BridgeValley CTC Supports the Growth of VEX Robotics in West Virginia

Melissa Thompson, P.E., Professor, BridgeValley CTC



The Advanced Technology Center at BridgeValley Community and Technical College (CTC) is dedicated to increasing the achievement and participation of K-12 students in STEM (science, technology, engineering, and mathematics) fields. One way BridgeValley CTC supports STEM opportunities is through robotics for a variety of ages. VEX Robotics competitions give students the opportunity to design and build a robot to compete in a game-based engineering challenge. VEX Robotics challenges many age levels, from elementary to college. The program attracts a variety of students with a host of skills that allow them to work together as a team. The VEX competition involves more than robot design and earning competition points. It also includes a presentation to the judging teams, submission of a design notebook, and sportsmanship and outreach.

BridgeValley CTC supports a team that competes in the VEX U competition. The *BridgeValley VEX Robotics* team is mainly composed of BridgeValley students from the Computer Science Technology and Advanced Manufacturing Technology programs. The students used their classroom skills in robotics and programming to design, build, and compete with their first robot last year in Maryland and West Virginia. The BridgeValley VEX Robotics team earned the Design Award at the Fairmont, West Virginia, competition. This award is presented to the team that demonstrates an organized and professional approach to the design process, project and time management, and team organization. Now in its second year, the VEX U team at BridgeValley is preparing to compete in the state competition in Fairmont again this spring. "The team's initial goal for their rookie year was to build a competitive robot and compete in one competition," says Jason Spencer, one of the team's faculty advisors from BridgeValley. "Our small but dedicated team has achieved much more than any of them imagined, and we look forward to expanding this program in the future."



BridgeValley CTC also hosts VEX Tournaments for high school and middle school teams at the Advanced Technology Center. Scrimmages and open field nights have also been available to local teams. A VEX IQ robotics team was started this season. It is composed of middle school students who attended the BridgeValley "STEAM Academy" summer camp and showed interest specifically in robotics. The team is also preparing to compete in a state competition for the first time.

VEX Robotics is becoming the fastest growing STEM outreach activity impacting local youth in West Virginia. Thanks to agency support, grant funds, and partnerships with organizations like BridgeValley, students are gaining access to creative and challenging ways to explore areas like programming and manufacturing in fun new ways. The Advanced Technology Center at BridgeValley is pleased to be able to provide the space and resources needed to support local students participating in VEX Robotics. ♦

Weld-Ed Announces 2018 Professional Development Workshops

Five-day summer workshops equip welding educators with the latest in training techniques, technology, and best practices.

The National Center for Welding Education and Training (Weld-Ed) located at Lorain County Community College in Ohio has announced its 2018 professional development workshop series, which includes seven state-of-the-art training modules designed exclusively for welding educators and industrial trainers.

The hands-on workshops offer welding educators a broad selection of affordable interactive training conducted throughout the summer at teaching facilities located around the U.S.

The seven workshop modules encompass virtually every aspect of the welding profession. Topics include:

- Welding metallurgy (two workshops offered);
- Joining and cutting processes (two workshops offered);
- Design, assembly, and robotic welding;
- Welding codes, specifications, and safety;
- Instructional design and teaching strategies;
- Non-destructive testing (NDT); and
- Additional welding and allied processes.



National Center for Welding Education and Training

Each workshop encompasses five days of comprehensive training (Monday through Friday). Workshop participants earn four continuing education units and 40 professional development hours. Detailed descriptions, locations, and easy registration for the workshops can be found at www.bit.ly/WeldEd2018.

The regular cost of each workshop is \$999, but Weld-Ed is offering its "educational affiliates" a \$500 discount toward registration. Welding educators and instructors can become educational affiliates by visiting www.Weld-Ed.org and completing a no-cost affiliate membership application.

Continued on next page

All workshop participants receive a complete set of classroom-ready training materials (print and electronic formats) and Weld-Ed merchandise. Lunch is provided at the training site each day, and Weld-Ed will host a group dinner during the week-long session. Participants are responsible for travel, lodging, and all other meals.

Each Weld-Ed professional development workshop is limited to a maximum of 20 participants per location, so early registration is highly recommended to guarantee a spot, according to Weld-Ed sources.

The workshops utilize state-of-the-art technology, techniques, and training methods to ensure that welding educators are fully updated on the latest developments, trends, equipment, and methods used in today's ever-expanding welding field.

The courses are specifically designed for welding educators seeking professional development as instructors in secondary and postsecondary welding programs. The qualification and certification standards for entry-level welders and welding technicians, as established by the American Welding Society, will be covered in all seven modules.

"This year's professional development workshop series helps to fulfill Weld-Ed's goal of equipping educators with the skills and knowledge they need to greatly impact student learning," said Weld-Ed Interim Director, Michael Fox. "Our objective is to offer a cutting-edge learning environment facilitated by highly experienced instructors who provide welding educators with the tools to positively affect their students' ability to learn and succeed in this increasingly complex and rewarding field."

Past participants in Weld-Ed's professional development workshops have expressed overwhelming approval of the training, saying it increased their knowledge and preparedness to teach concepts to their students, and improved their conceptual understanding of the topics discussed.

Most notable was the ability to take part in hands-on lab training, which helped to boost participants' confidence in using new tools and techniques, while motivating them to implement additional strategies in their classrooms, according to post-workshop educator surveys.

Registration is currently open for Weld-Ed's professional development workshops. To register, visit www.bit.ly/WeldEd2018. Weld-Ed accepts all major credit cards when registering for the workshops.

Registrants for any of Weld-Ed's 2018 professional development workshops are eligible to win a MIG Welder for their school. The welders have been donated by Lincoln Electric, a leading industry affiliate and ardent supporter of Weld-Ed.

The Lincoln Electric MIG Welder features superior arc performance, forgiving arc and simple tapped voltage control to make dialing in the application easy.

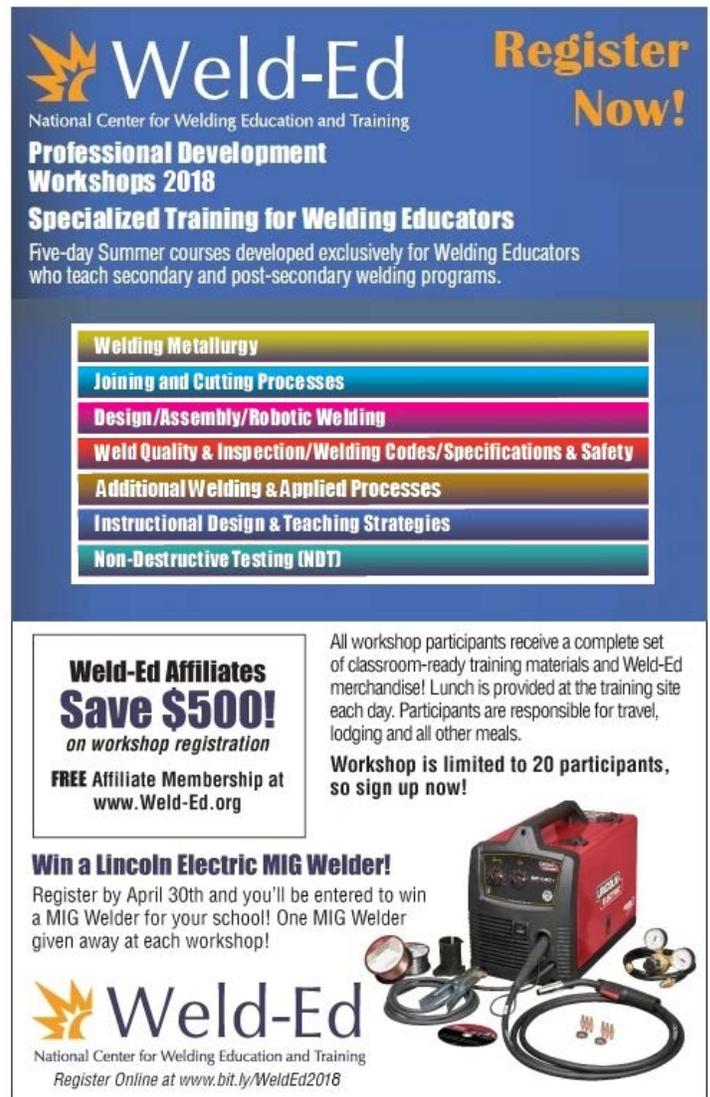
To be eligible to win, participants must register for a 2018 Weld-Ed professional development workshop course before April 30, 2018, and attend the workshop. The prize drawings will be conducted at each workshop.

About the National Center for Welding Education and Training (Weld-Ed) Founded in 2007 through a \$5 million grant from the National Science Foundation, the National Center for Welding Education and Training (Weld-Ed) is a national partnership between the welding and materials joining industry and the nation's community

and technical colleges and universities that is dedicated to expanding the role and pipeline of welding technicians in the industry. Weld-Ed brings together the American Welding Society (AWS), industry partners such as Lockheed Martin and Lincoln Electric, 140 business and industry affiliates, more than 80 educational affiliates, and ten Regional Center Partners from its center, located at Lorain County Community College in Elyria, Ohio.

Weld-Ed's activities enable other community and technical colleges in the U.S. to partner with their local K-12 school districts, adult education, and institutions of higher education to expand welding technician education in their areas. Many of those same institutions—as well as two-year colleges that are currently offering welding technician education—are able to add welding specializations that better meet the needs of their regional welding employers. The project enhances and expands professional development opportunities for welding educators by developing a national welding education certificate program and a master welding educator certificate that can be offered by current and future Weld-Ed partners throughout the United States.

For more information, visit www.Weld-Ed.org or call (866) 529-9353. ◆



Weld-Ed
National Center for Welding Education and Training

Register Now!

Professional Development Workshops 2018

Specialized Training for Welding Educators

Five-day Summer courses developed exclusively for Welding Educators who teach secondary and post-secondary welding programs.

- Welding Metallurgy
- Joining and Cutting Processes
- Design/Assembly/Robotic Welding
- Weld Quality & Inspection/Welding Codes/Specifications & Safety
- Additional Welding & Applied Processes
- Instructional Design & Teaching Strategies
- Non-Destructive Testing (NDT)

Weld-Ed Affiliates Save \$500!
on workshop registration
FREE Affiliate Membership at www.Weld-Ed.org

All workshop participants receive a complete set of classroom-ready training materials and Weld-Ed merchandise! Lunch is provided at the training site each day. Participants are responsible for travel, lodging and all other meals.
Workshop is limited to 20 participants, so sign up now!

Win a Lincoln Electric MIG Welder!
Register by April 30th and you'll be entered to win a MIG Welder for your school! One MIG Welder given away at each workshop!

Weld-Ed
National Center for Welding Education and Training
Register Online at www.bit.ly/WeldEd2018

Central Massachusetts LEAPs into Integrated Photonics

On January 11, 2018, Quinsigamond Community College's (QCC) and Worcester Polytechnic Institute's (WPI) partnership was awarded a \$4 million Massachusetts Manufacturing Innovation Initiative (M2I2) grant by Lt. Governor Karyn Polito. The funds are aimed at supporting the emerging technology of integrated photonics through the launch of an [AIM Photonics Academy](#) Lab for Education & Application Prototypes (LEAP).

Polito relayed the news of the award and partnership to a packed house of legislators and industry and academic leaders at WPI's campus center, announcing, "This is a collaborative effort of federal partners, our state dollars, and then of course here with the folks at QCC and WPI."

The new LEAP facility is being developed as a collaboration between AIM Photonics, AIM Academy, QCC, WPI, the Massachusetts Technology Collaborative through the Massachusetts Manufacturing Innovation Initiative (M2I2), and the U.S. Department of Defense. The first LEAP facility is located at the Massachusetts Institute of Technology (MIT), home to AIM Photonics Academy, the workforce development arm of AIM Photonics.

These LEAP facilities are designed to be a pipeline from Boston to Rochester, New York, in order to foster photonics education, research, and workforce development that will meet the needs of the industry now and in the future.

"What sets this (LEAP) apart from MIT is that it has a connection to a community college," Lt. Gov. Polito said. "I'm really happy that WPI can be a catalyst along with Quinsigamond for this innovation hub of connectivity in Central Massachusetts."

WPI's President Dr. Laurie Leshin and QCC's President Dr. Luis G. Pedraja both touted the strong partnerships the two institutions have shared and their excitement at the prospect of helping bring this innovative technology to students and area companies.

"We've had a special partnership with QCC for more than half a century," President Leshin said. "Putting our assets together is invaluable."

"We've had a long history of collaboration," President Pedraja said. "This is an exciting time. We are truly training our students for the jobs and the technology of the future."

Jacob Longacre, QCC Photonics professor, described the vital role QCC plays in partnership with WPI, noting that the college's robust photonics, engineering, and manufacturing programs give students a foundation that enables them to go directly to the workforce or continue their education.

QCC students will have the opportunity to learn testing protocols for integrated photonics, in addition to enhancing their knowledge of the overarching concepts of photonics through hands-on applications at the LEAP facility. LEAP provides students enrolled in [QCC's photonics program](#) with advanced learning opportunities with WPI researchers and area companies.

"We have a very broad spectrum of students, and that is where we come into this, as a gateway to people, students, and industry personnel who are not fully cognizant of how this works," Longacre said. "We're there to present to them and to get them to a point where they can fully utilize LEAP and learn what they can do in these areas. We're a gateway to educate and inform."

The LEAP facility will be housed on the WPI campus and will be utilized by students from both institutions, in addition to faculty and industry partners.

"LEAP allows us to help companies create and bring to market tomorrow's technologies, while simultaneously ensuring that today's students are trained and ready to work with these new technologies when they complete a certificate or degree program," Dr. Pedraja said, adding, "Think of how far we've come. This is an incredible time." ♦



Massachusetts Lt. Governor Karyn Polito making the grant award announcement



An attendee captures the image on a concept board



Faculty and students at WPI demonstrate photonics research for Lt. Governor Karyn Polito, QCC President Dr. Luis G. Pedraja, and WPI President Dr. Laurie Leshin

Lincoln Electric's LEEPS Program Aims to Train Instructors to Train Students

College of the Canyons is a two-campus community college located in the Santa Clarita Valley of California, about 30 miles north of Los Angeles. It sits in a region that is home to aerospace manufacturing facilities, and more industry is expected to arrive within the next three to five years. The demand for skilled welders (and other skilled workers) is strong and will only grow stronger in the coming years.

This demand is prompting College of the Canyons to create an advanced manufacturing initiative that will provide workforce development training opportunities, says Tim Baber, Department Chair, Welding Technology Program. Welding is a primary component of the initiative.

College of the Canyons benefits from a first-of-its-kind partnership with Lincoln Electric. The company, a leader in welding education, has created the Lincoln Electric Education Partner Schools (LEEPS) program. LEEPS is designed to train and qualify welding instructors at increasingly advanced levels for the benefit of instructors, their students, and their schools. School administrators and local employers benefit from knowing that the instructors have attended and passed Lincoln Electric process and instructor classes, earning a third party welding instruction qualification.

The goal is to ensure that instructors at every level are equipped to produce prospective welding employees who are well-versed in both the craft and science of welding. Not only must students know the techniques of welding, but they also must be able to apply their knowledge in the real world.

In the LEEPS program, any school that meets Track 3 requirements can apply to become a Lincoln Electric Authorized Training Facility, authorized to run Lincoln Electric Training Programs. College of the Canyons is the first institution to be considered as a LEEPS-partnered school.

LEEPS equips instructors with the same knowledge base taught at the Lincoln Electric Welding Technology and Training Center in Cleveland. "LEEPS is designed to make instructors better at what they do," says Chris Gandee, Manager of Educational Services for Lincoln Electric.

LEEPS is a multi-track program. Track 1 is geared toward schools that have welding programs but don't necessarily teach welding as a career choice. To become LEEPS Track 1-credentialed, teachers must participate in Lincoln Electric's Beyond the Booth course, which is specially designed for new high school- and college-level

welding instructors. Schools must be active on Lincoln Electric's Education Portal and use U/LINC® Level 1 curriculum.

Track 2 is for instructors, mostly in high schools, who present welding as a career choice. Track 3 is geared toward instructors in community and technical colleges, as well as high schools with four-year welding programs.

To achieve Track 2 accreditation, instructors attend a one-week Welding Educator Workshop focusing on advanced technologies and processes such as gas metal arc welding (GMAW), advanced, flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), and robotic welding. Other topics include the welding of aluminum and stainless steels. Subsequently, the Welding Educator Workshop transforms into a series of one-week courses, each on a specific process. In that week, instructors become more knowledgeable about the process being taught and attain Track 3 accreditation.

Baber eventually wants all of his welding instructors to achieve Track 3 accreditation.

While the primary objective of LEEPS is to train instructors, schools can benefit by being certified to host Lincoln Electric welding educator conferences and train-the-trainer workshops and seminars. Schools retain all profits from hosting these events. College of the Canyons ran two Lincoln Electric basic training sessions in 2017.

Gandee stated that the company's goal is to see at least one LEEPS-partnered school in every state. The advantages to instructors and schools are obvious. Instructors are qualified to teach the AWS SENSE-aligned Lincoln Electric U/LINC curriculum, and schools have the support of the leader in welding education.

"Our long term, respected reputation will help attract students to their institutions," Gandee says.

Baber agrees, maintaining that the association with Lincoln Electric validates College of the Canyons' Welding Technology Program. "Flying the LEEPS banner gives us more credibility with students," he points out. "There is no reason for a student to go anywhere else for welding education."

He believes College of the Canyons will continue to provide a work-ready, knowledgeable welding workforce that will answer the needs of Santa Clarita Valley industry in the years ahead. "LEEPS will help us create an educated welder," Baber notes. ♦



MoManufacturingWINS Named Finalist for Bellwether Award

A statewide program aimed at preparing workers for careers in modern manufacturing in Missouri was honored as a finalist for the 2018 Bellwether Award.

The Missouri Manufacturing Workforce Innovation Networks (MoManufacturingWINS) Consortium, led by NCATC member St. Louis Community College, was selected as a finalist for the prestigious award in the Workforce Development category. The project was presented during the Community College Futures Assembly January 28-30 in Orlando, Florida.

The Bellwether Awards annually recognize outstanding and innovative programs and practices that are successfully leading community colleges into the future. Other categories include Instruction Programs and Services, and Planning, Governance and Finance.

The award in the Workforce Development category recognizes public and/or private strategic alliances and partnerships that promote community and economic development.

MoManufacturingWINS was one of three Trade Adjustment Assistance Community College Career Training (TAACCCT) grants from the U.S. Department of Labor that enabled Missouri's community colleges to pilot a statewide job training network with hundreds of Missouri's employers engaged. The \$14.9 million grant received in 2012 created a new approach to training for advanced manufacturing, benefiting more than 3,300 Missourians who were unemployed, underemployed or required additional technical training for high-demand careers in production, industrial maintenance, welding, machining, transportation and logistics.

"These TAACCCT grants truly challenged Missouri's community colleges to innovate to better serve Missourians in advanced career pathways while earning stackable industry credentials aligned to a high-wage industry," said Brian Millner, president/CEO of the Missouri Community College Association (MCCA). "The consortium model that was developed and perfected allowed our colleges to increase capacity through collaboration beyond what was previously possible."

MoManufacturingWINS changed the way adult workers were trained. The new curriculum and structure moved away from a traditional job-training approach to an education model with career pathways to fill employer needs for workers with specific skills. The accelerated instruction allowed students to get short-term training while earning credit hours that could be applied toward a degree. The industry-recognized credentials and certifications were endorsed by the National Association of Manufacturers (NAM).

"The MoManufacturingWINS grant was pivotal for St. Louis Community College," said Don Robison, associate vice chancellor for STLCC's Workforce Solutions Group. "Five new accelerated high-demand programs were launched, providing students the opportunity to earn credentials and get jobs with a living wage. We forged many new lasting employer partnerships that informed curriculum development and bolstered job placement."

Robison noted that STLCC served 585 participants who earned more than 1,200 industry-recognized credentials endorsed by NAM.

"These credentials represent marketable technical skills that help put graduates to work in the local manufacturing industry," Robison said.

In addition to STLCC, the MoManufacturingWINS consortium included Metropolitan Community College, North Central Missouri College, State Fair Community College, Ozarks Technical Community College, East Central College, St. Charles Community College, Mineral Area College and Linn State Technical College. Other key partners, led by MCCA, included the United Auto Workers Labor Employment and Training Corporation, the National Association of Manufacturers, the Missouri Chamber of Commerce and Industry, the Missouri Department of Economic Development, and local workforce investment boards.

"The grant specifically allowed the colleges to experiment with innovative student-support services and redesign some 44 programs of study that delivered a highly skilled workforce to Missouri-based employers," said Dawn Busick-Drinkard, MoWINS grant director from MCCA. "The grant directly resulted in training 4,500 adult students, with a 72 percent completion rate, possessing some 8,873 industry-requested credentials. No other higher education program has attained such high performance results that met employer's immediate workforce needs." ♦





SAVE DATES

June 4–5, 2018

NCATC Summer Workshop

Santa Clarita, California

Learn It, Build It, Do It

Advanced Technology Lab Focus Areas

CNC/Haas • Makerspace/STEAM
High-Tech Welding/Fabrication

Industry Tours

Remo Drums • Stratasys
ADI Manufacturing

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Centers

*Celebrating 30 Years of Advanced Technology Expertise
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