



From the Director ...

NCATC Friends and Colleagues,

A quick look back at 2018 and our 30th Anniversary highlights.

Strategic Industry Partnerships, Apprenticeships, Industry-Recognized Credentials, coupled with Emerging Technologies were the predominant themes at the **30th Anniversary NCATC Conference** in Cleveland, OH (*oh, and the Browns and Indians won, too*) this September. Industry 4.0 / Smart Automation and work-based learning were catalysts for discussions about training a new generation, bringing even more educators current with new technologies and delivering more flexible solutions for workforce training.

NCATC brought over 200 community college, manufacturing, and workforce professionals together to share best / promising practices and solutions to improve training approaches and move workforce education forward. Among the many session highlights:

- Montez King, NIMS, and Dr. Rebecca Lake, Harper College, were joined by Denise Ball, Tooling U-SME, and presented the importance of providing apprenticeships to fill the ever-increasing skills gap. Harper College was one of the first in the nation to sponsor a Department of Labor Registered Apprenticeship (RA), and NIMS recently introduced the Industry-Recognized Apprenticeship Program (IRAP), which gives employers the flexibility to design a modular, competency-based apprenticeship program specifically targeting their needs. Tooling U-SME supports both approaches by providing online learning modules for manufacturers to up-skill incumbent workers or employ new workers on a regular and steady basis.
- Mary Ann Pacelli, NIST/MEP, Jeannine Kunz, Tooling U-SME, and Roy Swift, ANSI/Workcred, shared data from recently released reports from all three organizations examining the value of industry-recognized credentials, certifications, and credit for prior learning. Recommendations from the reports included expanding the use of quality standards for credentials, adding employability skill components to existing and new credentials, and creating credentials that focus on employee performance.

The NCATC Board of Directors and staff hope to see you at **AACC's WDI 2019** in San Diego, CA, January 30–February 2, 2019, where we will share key **Industry 4.0 Toolkit** outcomes from our partnership with **AACC**, the **Arconic Foundation**, and a cohort of nine select community colleges focused on improving technical workforce development in diverse areas such as Cybersecurity, Simulation, System Integration, Big Data Analytics, Artificial Intelligence, Industrial Internet-Of-Things (IIOT), Additive Manufacturing, Advanced Robotics, etc.

And, don't forget to Save-the-Date for the **2019 NCATC Summer Workshop** hosted by Oakland Community College (OCC) and FANUC America in Auburn Hills, MI, June 6–7. For more event details, visit ncatc.org.

As always, we encourage you to stay regularly connected via the 2019 NCATC website, social media, and quarterly e-newsletters like this one.

J. Craig McAtee, NCATC Executive Director ♦



Lawson State Promotes Mechatronics and Robotics Through NAM Tour

Two of Lawson State Community College's main manufacturing programs were featured when members of the National Association of Manufacturers (NAM) visited campus as part of the 2018 State of Manufacturing Tour.



Representatives from Lawson State and NAM toured the areas of Mechatronics and Robotics to view the growing and innovative opportunities available to the workforce in manufacturing. "Having the right skills in this competitive workforce is critical to a worker's success and livelihood," said Dr. Perry W. Ward, president of Lawson State (photo right). "We are committed to preparing our students for their future careers with affordable, hands-on experience in numerous fields of work, including manufacturing, healthcare, automotive, and more. We thank the NAM for highlighting our school and students during its 2018 State of Manufacturing Tour."



Mechatronics students receive hands-on experience with ABB, FANUC, KUKA, Mitsubishi, or Motoman robots when they choose to specialize in robotics as part of the manufacturing degree. "I see this as the direction to the future," said Lawson State student Harriet Williams, a nurse by profession, who has recently enrolled in the program.

Students who complete the mechatronics short certificate will also be eligible to take the Siemens Mechatronics System Certification Program. Siemens is one of the world's leading manufacturers of mechatronic and automated systems, and has over twenty years of experience in mechatronics education and over 100 years in technical education.

During the tour, NAM visitors had an opportunity to talk with students, observe the manufacturing line, explore the virtual welding program, and observe the robotics area. The group from Washington, DC, traveled to Alabama to highlight the state's manufacturing industry as part of their fourth annual NAM State of Manufacturing Tour. ♦

St. Charles Community College Hosts 6th Annual Manufacturing Day

For the past six years, St. Charles Community College's (SCC) Workforce Development Office has celebrated Manufacturing Day with educational events that demonstrate how manufacturing is thriving in St. Charles County, Missouri. Dedicated to providing a well-trained workforce in the community, SCC partners with local economic developers, chamber of commerce representatives, county officials, and industry leaders to create an experience that spotlights local career opportunities in manufacturing.

SCC's Manufacturing Day event provides venues where students, teachers, administrators, and parents can learn about the array of career opportunities local manufacturers offer. Seeing everyday products that have been created in their community, as well as the innovation and design that go into products used in aerospace, automobiles, missile launchers, and refrigeration systems, gives students a firsthand look at what could be possible in their

future. "The benefit of Manufacturing Day is exposing students to various careers they can pursue in manufacturing

once they graduate high school," said Tammie De Los Santos, Associate Dean of Workforce and Educational Partnerships at SCC.

Engaging in hands-on learning experiences and taking industry tours is what gets these middle and high school students excited. One student stated, "My favorite thing about the day was learning about the new technologies and how they work." This year's event brought over 750 middle and high school students from 15 different schools to the SCC campus to learn from over 35 local manufacturing companies about products they make and how they

See "SCC," page 3.



HS Students Thrive in Innovative Dual-Credit Courses at Mountain View College

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

"I'm not a business person. I love to be in control, but it can't be tedious."

Those are the words of budding engineer Hope Hopkins, who sports a 3.8 GPA at Duncanville (TX) High School. Hope is one of six 11th/12th grade young women in Professor Bafford Howard's *Automated Manufacturing 1* class of 21, taught as part of an innovative dual-credit (DC) course through Mountain View College (MVC) in Dallas.

Automated Manufacturing 1 is the first class in a series of four created by Howard and part of a junior/senior year 16-DC elective grouping for Duncanville and Dallas Kimble ISD students. The total series includes these 64-hour courses:

1. Automated Manufacturing 1
2. Mechanical Principles of Automated Manufacturing
3. Programmable Logic Controls (PLC)
4. Industrial Automation 2

Carla Coggins, Coordinator of CTE/CCR courses through Duncanville ISD and the DC liaison, says, "Our students love their dual-credit courses, because they have a passion and want to pursue all they can get their hands on. And they like getting the certification and having the chance to walk in the graduation ceremony." When asked how she helps students and parents in considering the pre-engineering path, Coggins replies, "We have great interaction and discussions between them and (our) instructors, counselors, and a very active 'Go Center.'"

Current MVC student Oscar Soto (pictured), who completed all four courses while at Duncanville, is very appreciative of the DC opportunities. "Now we get to see the theoretical implemented in the lab." Howard is seeking internship opportunities for Soto while he's at MVC before he moves on to pursue his degree in civil engineering, where he's intrigued by the thought of "designing 'light-arm' drones to map out public utility pipes and infrastructure," which he says is currently done by helicopters.

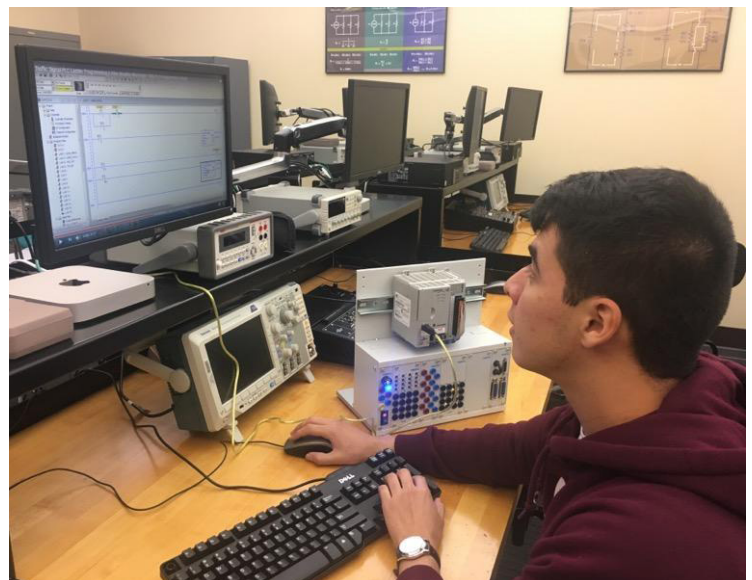
Howard, an electrical engineer who worked 27 years in industry, including nine with Allen-Bradley/Rockwell Automation, says the

college used a \$200K grant to purchase Festo lab equipment. "We're giving them more than tidbits here. We want to expose them to what they should look for in education and career enhancement," while noting that there are numerous 3.5–3.9 GPA students who see the classes as a "viable stepping stone" to helping them get ahead.

Hopkins says that while neither of her parents were engineers (though her dad is "very tech-savvy"), they encouraged her to pursue engineering. "I got my first experience using my hands in a fifth-grade robotics course and I always liked Lego." She adds that she is fascinated by "how to make things run and likes learning through trial and error."

Coggins says, "The students who make this type of commitment are also going to become excellent employees and entrepreneurs."

Soto says that although he's interested in diverse opportunities in engineering, he believes the greatest level of joy would be as a mentor to young entrepreneurs and help them boast, "I created that!" ♦



Midlands Technical College, Area School Districts Sign Agreement to Train Welders More Quickly

Midlands Technical College (MTC) has partnered with high-school-level welding programs in Lexington, Richland, and Fairfield Counties to make it easier, quicker, and less expensive for students to become certified welders. The partnership will also help fill the local workforce demand with welding professionals who have some of the highest levels of training and certification.

“This partnership creates a winning situation for everyone involved,” said MTC President Dr. Ronald L. Rhames. “Students will save time and money while pursuing a great career. Local employers will benefit from having a larger pool of trained welders entering the workforce each year. The partnership provides clear pathways for students to continue their education after high school.”

The plan gives students credit at MTC for accomplishments they have achieved in high school and prepares students for employment and advancement in the welding industry.



“This is definitely a win-win situation for all involved,” said Kevin Gratton, a welding instructor at Lexington Technology Center (LTC). “This includes the school districts, the students, the parents, and MTC. At LTC we explain to our students on a daily basis how much industry needs welders and all the other welding-

related occupations. I have a number of students who are gainfully employed with some of the best companies in Columbia and the surrounding area. One of my former students is employed at MTC as a welding instructor.”

The plan to award qualified high school students college credit for their demonstrated skills began between MTC and Lexington School District One, when MTC Welding Program Coordinator Ray Thomas noticed that many of the high school students coming to MTC had already gained many basic welding skills in high school.

“We had great feedback and great results,” said Thomas. “The parents really liked it because it showed them a clear path for their students to be able to continue their education. Eventually, we introduced the program to all the high-school-level welding programs in our area.”

Students in MTC’s welding programs receive training in the latest welding technology, as well as the traditional welding skills and a good foundation in basic welding theory, metallurgy, and blueprint reading. Employment opportunities are found in maintenance, construction, manufacturing, and related fields. MTC will soon begin a \$4 million expansion of its welding facility and will expand its welding curriculum to take advantage of the new space and resources.

For more on MTC’s welding programs, visit <https://www.midlandstech.edu/career-guide/department-careers/welding-technologies>. ♦



• SCC (continued from page 2) •

work. One company brought virtual welders, allowing students to compete in a skills contest in hopes of winning a new welding helmet.

After visiting with manufacturers on campus, students and teachers had the opportunity to tour a local company and see first hand what a manufacturing company looks like, how they make their products, and what type of careers are available. “We anticipate a shortage of skilled workers as the current manufacturing workforce nears retirement age,” said Amanda Sizemore, St. Charles Community College Assistant Vice President of Corporate and Community Development. “The average age of the current manufacturing worker is 56. Between now and 2020, there will be an increasing demand for skilled professionals in the manufacturing sector who can design, program, and operate technology. We need to help students, parents, and job-seekers see the opportunities in these career paths.”

This yearly event, designed to showcase modern manufacturing technology and careers, brings some of the top manufacturing companies together in the St. Charles County Region. One teacher stated, “It was one of the best field trips I have been on. The booths were great. I heard nothing but positive comments from my kids. We really enjoyed the day. Thanks again for inviting us. We will definitely be back next year.” When asked what he liked about the event this year, one manufacturer proudly commented, “Getting students interested in manufacturing! I love that students tour our facility so they can see it is clean and organized, and that manufacturing is awesome!”

Manufacturing Day 2018 was possible thanks to the generosity of its sponsors: Patriot Machine, Seyer Industries, True Refrigeration, UAW/GM, LMI Aerospace, QTE Manufacturing Solutions, Modineer, Nike Air, The Woodbridge Group, Newco Enterprises, Permian Plastics, Reckitt Benckiser, and Heartland Coca-Cola Bottling Company, as well as our St. Charles County economic development and community partners.

To learn more, contact Amanda Sizemore, Assistant Vice President Corporate and Community Development at asizemore@stchas.edu. ♦



RCBI, America Makes Develop First 3D Printing Apprenticeship Program



The Robert C. Byrd Institute (RCBI), America Makes, ToolingU-SME, the National Coalition of Advanced Technology Centers, and AST2 have launched the first industry-vetted and U.S. Department of Labor-approved framework for a new 3D printing technician apprenticeship.

"RCBI is proud to have played a pivotal role in the development of this important program," said Charlotte Weber, Director and CEO of RCBI. "For the past 25 years Marshall University's RCBI has been bringing the most advanced technology to West Virginia and the region for use by our existing and future manufacturers."

Through the efforts of Apprenticeship Works, a program of RCBI, the new framework was developed so apprentices can continue to work while also learning 3D printing part design, material selection, quality, and a host of other topics.

A growing number of industries now incorporate additive manufacturing into their work processes, including aerospace, automotive, defense, medical, recreation, and others. With the DOL approval, manufacturers now can use the framework to develop their own registered apprenticeship programs.

Nearly 300 employees at 17 companies are enrolled in apprenticeship training established in partnership with RCBI's Apprenticeship Works. For more information about Apprenticeship Works, go to www.RCBI.org/online/apprenticeships or call 800.469.7224.

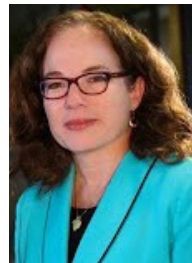
NCATC Board Welcomes New Members



Tim Baber
Faculty Driven Regional Group Chair
College of the Canyons
Santa Clarita, California



Don Hutchison
Dean, Engineering, Manufacturing and
Industrial Technologies
Oakland Community College
Auburn Hills, Michigan



Terri Burgess Sandu
Director of Talent and Business
Innovation
Lorain County Community College
Elyria, Ohio

SAVE THE DATES!

June 6–7, 2019

NCATC Summer Workshop

Hosted by Oakland Community College and Fanuc • Auburn Hills, MI



30th ANNIVERSARY FALL CONFERENCE

SEPTEMBER 19-21, 2018 • CLEVELAND, OH

Highlights



Celebrating 30 Years of Advanced Technology Expertise



Dr. Annette Parker and Marsha Danielson (South Central College) enjoying NCATC Board Reception with Dr. Maria Coons (Harper College)



LONG LIVE ROCK @ Rock and Roll Hall of Fame+ Museum – Cleveland



New NCATC Board Director Terri Burgess-Sandu and husband catching up with NC3's Roger Tadjewski and Dan Ramirez



NCATC Board Directors Kathy Rentch (Qunsigamond CC), Amanda Sizemore (St. Charles CC), Jeff Wyco (BridgeValley CC), and Nick Graff (Dallas County CCD) relax.



Cuyahoga Community College (Tri-C) President Dr. Alex Johnson welcomes over 200 attendees to Cleveland and the 30th Anniversary NCATC Conference.



Lorain County Community College President Dr. Marcia Ballinger welcomes over 200 attendees to Cleveland and the 30th Anniversary NCATC Conference.



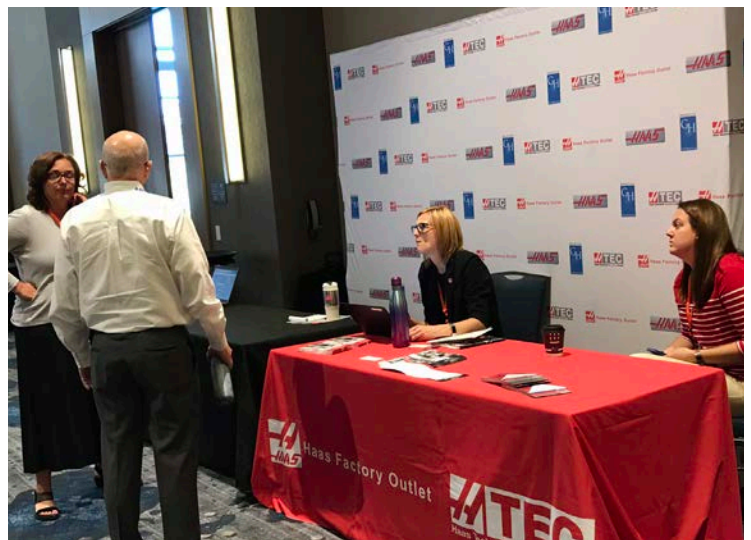
2018 NCATC President, Nick Graff, thanks Drs. Johnson and Ballinger for their co-hosting and welcome remarks for the 30th in Cleveland.



Opening Speaker Mark Perna, author of *Answering Why* – bestseller Q4-2018



NIMS Executive Director Montez King discusses the new Industry Recognized Apprenticeship Program (IRAP) with Gretchen Schultz (Tooling U-SME) and Susan Muha (Maher & Maher)



Diamond Sponsor of the 30th Anniversary NCATC Conference – Haas / H-Tec booth in the exhibit hall with Toni Neary



Current and past NCATC Board Directors and Staff – a wonderful group of friends and colleagues from Hawaii to Maine to Florida for many, many years



30th Anniversary NCATC Celebration Cake



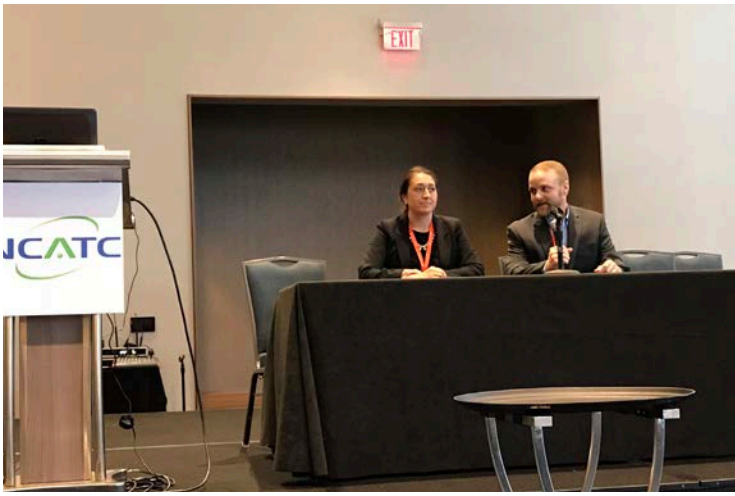
Key NCATC Partners and Sponsors cut the cake – (l-r) Toni Neary (Haas), Carol Dierdorf (OpusWorks), Denise Ball (Tooling U-SME), and Peter Zeirhut (Haas HQ)



NCATC's Holly Rolf and Craig McAtee glad to make it to Rock Hall for the BIG 30th Anniversary Reception



Nearly all 200 attendees pose for a "LONG LIVE ROCK" pic before entering the 30th Anniversary NCATC Rock Hall of Fame Reception + Tours



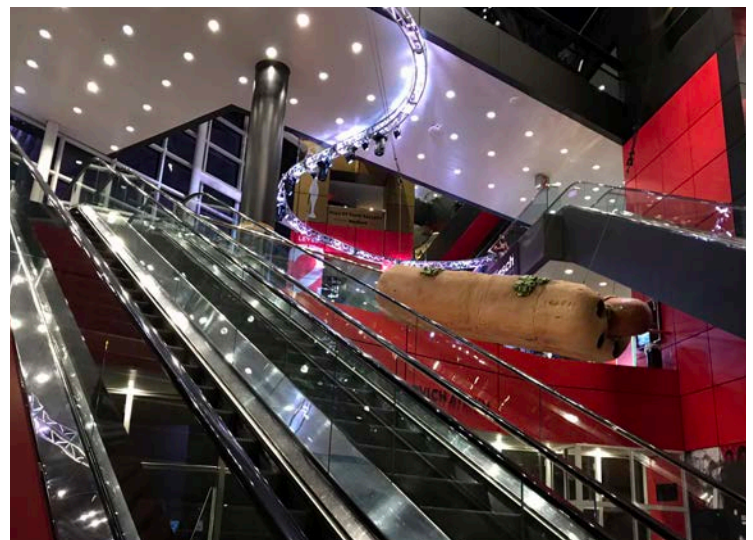
Amanda Kosty (AACC) and Ryan Kish (Arconic Foundation) discuss the partnership with NCATC and our nine community college cohort for the 2018 Industry 4.0 pilot project.



Rob Gorham, Director of America Makes, addresses NCATC attendees on the Manufacturing USA Innovation Institutes and additive manufacturing progress in the nation.



Todd Oldham (Monroe CC), representing the REMADE Institute, discusses the opportunity for colleges to become engaged with REMADE.



A sparkly escalator view inside the Rock & Roll Hall of Fame + Museum



Denise Ball, Nick Graff, Sue Mueller, and Mark Manuel enjoy one of the many exhibits during the NCATC / Rock & Roll Hall of Fame Reception + Tour, Night 1.



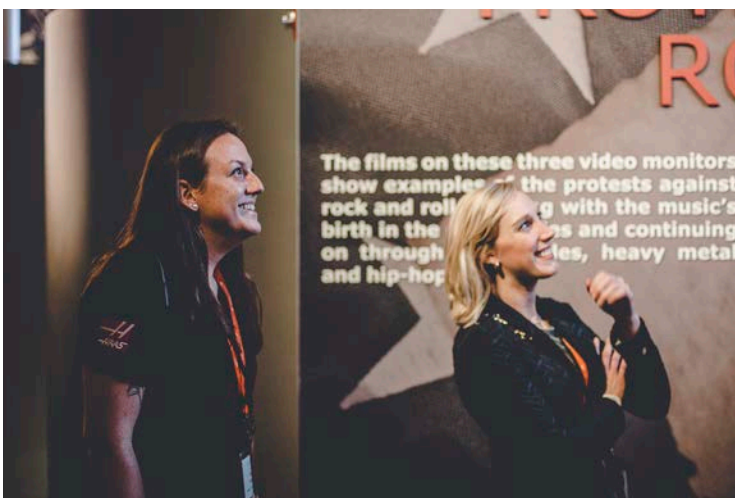
Lulu Copeland (Chattanooga CC) and her spouse pause their tour of the Rock & Roll Hall of Fame for a quick photo.



Don Robison (St. Louis CC), Holly Rolf (NCATC), and Jim Retka (Northland CC) yuck it up at the RRHOF.



Jarret Yip (Honolulu CC /PCATT) enjoyed the new Rock Pinball Exhibit at the RRHOF the most!



Meghan Shea-Keenan (Tooling U-SME) and Stephanie McCarten (Zeiss) enjoy one of the many exhibits during the NCATC / Rock & Roll Hall of Fame Reception + Tour, Night 1.



Dr. Ann Beheler (National Convergence Technology Center) “converging” her photo taking abilities with our pro, Heidi Rolf



Gerald Sexton (Jefferson CTC) viewing exhibits at the RRHOF with Scott Murakami (University of Hawaii CC System) and others



Peter Zierhut (HAAS) addresses attendees on Day 1 about the HTEC network, Gene Haas Foundation scholarships, and how they partner with education better than most.



Don Hutchison (Oakland CC) addresses the audience regarding his 2019 NCATC Board nomination and desire to lead the organization into the future.



Part of the 200+ attendees on Day 1



Jeff Wyco, 2019 NCATC President, presents Tooling U-SME (represented by Jeannine Kunz and Chad Schron) the first “Founding Strategic Partner Award” for being the first of two original industry partners beginning 15 years ago.



Nick Graff, 2018 NCATC President, and Jeff Wyco, 2019 NCATC President, present Don Robison, 2017 NCATC President and Director for eight years, an appreciation plaque for his long service and dedication to NCATC’s mission.



Outgoing NCATC Board Directors Don Robison (St. Louis CC) and Marsha Danielson (South Central College) receive their service appreciation plaques. Dr. Doug Jensen, President of Rock Valley College, will receive his appreciation plaque separately, since he was not able to be with us in CLE.



NCATC presented Tri-C’s William Gary (center) our appreciation award for co-hosting the 30th Anniversary Conference in Cleveland.



NCATC and NOCTI present Dr. Bryan Albrecht (Gateway Technical College) with the 2nd Annual “Innovation in ATC Workforce Development Award.”



Chris Mapes (CEO Lincoln Electric) shares his company’s vision for partnering with educators and workforce development professionals across the globe.



McAtee recognizes his long-time “mentor-in-chief” Susan Muha (Maher & Maher). She introduced NCATC to him in 2001 and taught him nearly everything he knows about workforce and economic development at Tri-C in the early 2000s.



The room is packed awaiting Day 2 keynote speakers.



The room is packed awaiting Day 2 keynote speakers.



Mike White (Tri-C) is recognized for his CNC expertise in the collaborative development of Tooling U-SME’s first nine online courses by Jeannine Kunz, VP.



Roy Swift (Workcred/ANSI) addresses the crowd on ANSI standard credentials and certifications with teammates Mary Ann Pacelli (NIST/MEP) and Jeannine Kunz (Tooling U-SME).



Nick Graff and Chris Lewis wait outside the conference hotel for the “all-clear” to re-enter along with all conference attendees and hotel guests.



Steve Catt (ARM Institute) shares how community colleges can partner more closely with robotics, automation, and industry 4.0 experts from industry to upgrade their curriculum, courses, certificates, and degrees.



Teri Brahams (Pellissippi State) and her team interact with one of the keynote speakers.



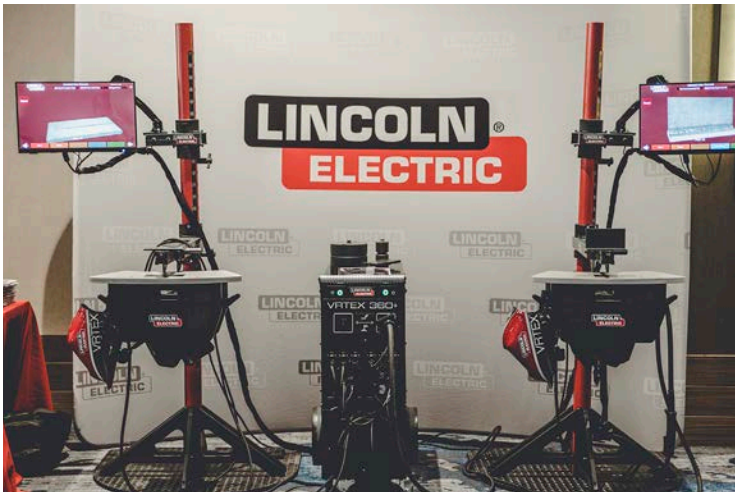
John Calver (Imagineering Futures) interacts with one of the expert panelists.



Mary Ann Pacelli (NIST MEP Workforce) shares the results of a newly documented manufacturing employers survey and translates what it means for education and workforce professionals.



Hope Cotner (CORD, right) and Carol Dierdorf (OpusWorks, center) share in a conversation with Ann Beheler at the second evening reception.



Platinum Sponsor – Lincoln Electric’s booth



Krista Mauer (Tooling U-SME) is ready for the Browns game right after a snack and conversation with Tom Crampton at the evening reception on Day 2.



Holly Rolf (NCATC) presents Scott Murakami (University of Hawaii Community Colleges) with a formal but fun “Worker Bee Award” for all the help he has given NCATC over many years.



A surprise “Rock Star Award” was presented to Craig McAtee (NCATC) by Don Robison (St. Louis CC) and the full NCATC Board of Directors.



Almost at a loss for (meaningful) words, Craig shares personal anecdotes and thanks each of the current and past NCATC Board Directors for all they have done for NCATC.



Graff, Roach, Calver, Retka, and Sexton crack up at something Craig said . . .



NCATC presented Lorain County CC's Terri Burgess-Sandu (center) our appreciation award for co-hosting the 30th Anniversary Conference in Cleveland.



Three Amigos 2018: McAtee, Wyco, Graff



Bryan Albrecht and Ray Koukari (Gateway Technical College) enjoying Chris Mapes, LECO keynote



Another full house on Day 3 wrapping up the 2-1/2 day 30th Anniversary Conference in Cleveland!



Craig McAtee, Nick Graff, and Jeff Wyco present Lincoln Electric (represented by Jason Scales and Chris Mapes) the first ever "Founding Strategic Partner Award" for being the first of two original industry partners beginning 15 years ago.



Brynt Parmeter (NextFlex) shows a flexible electronic replica of the much used Arduino Computer board and discusses FlexFactor with his panel of experts.



Terri Burgess-Sandu (Lorain County CC) discusses her college's partnership with NextFlex and implementing the FlexFactor program in NE Ohio.



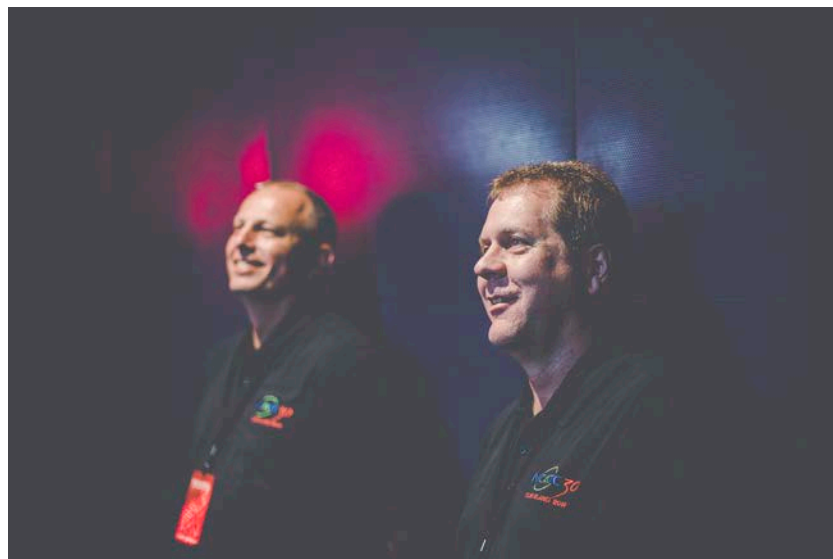
NextFlex panel of experts – Michael Britt-Crane (OSD), Terri Burgess-Sandu (LCCC), Tim Good (Blue Spark), and Emily McGrath (NextFlex) – fields questions from the audience.



Tri-C is recognized for its long-time collaboration with Tooling U-SME, represented by Jeannine Kunz, VP. William Gary, EVP, accepted the award for Tri-C.



Two new NCATC Strategic Partners – Chris Bien (immerse2learn) and Lauren Van Beek (Carl Zeiss Industrial Metrology) – visit in the conference exhibit halls.



Rich Waligurski and Scott Kearns (St. Charles CC) enjoy one of the many exhibits during the NCATC / Rock & Roll Hall of Fame Reception + Tour, Night 1.