



Advanced Technology Center (ATC) Strategies Under COVID-19 Conditions

J. Craig McAtee, NCATC CEO and Executive Director

A look at how community colleges are tackling hands-on, experiential learning during the pandemic ...



This spring NCATC pivoted—like the majority of organizations across the world—to seriously and thoughtfully following the national coronavirus pandemic experts from the Centers for Disease Control and World Health Organization, as well as the National Governors Association, AACC, and many others, in assimilating key factors in how and when our community and technical college

members would be able to restart necessary hands-on learning in many of the applied technology and advanced manufacturing fields.

With guidance from college advanced technology center (ATC) experts and many of our 38 industry strategic partners, such as the Association for Manufacturing Technology, Festo, Haas, the American Welding Society/Weld-Ed, and the National Coalition of Certification Centers, we developed a growing repository of best and promising practices that emulate safe, successful real-world working environments during the pandemic.

We also crafted a survey to learn how NCATC member colleges were handling hands-on labs in light of COVID-19. Here are some of the highlights:

Labs that are currently open and providing hands-on training:

- Industrial Maintenance/Mechatronics – 62 percent
- CNC/precision machining – 54 percent
- Welding/fabrication – 55 percent
- Computer labs – 46 percent

Who is responsible for sanitizing the instructional areas before each lab?

- Custodial staff – 77 percent
- Faculty/Instructors – 70 percent
- Students – 54 percent
- Lab assistants – 42 percent

Personal protective equipment provided by college for students and faculty:

- Hand sanitizer – 93 percent
- Surgical mask/face coverings – 77 percent
- Protective gloves – 58 percent

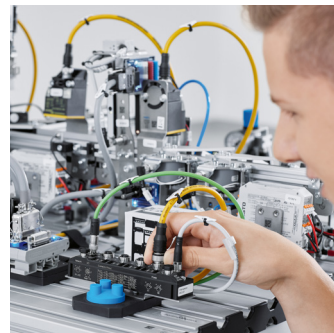
Registration is open for the August 27 webinar (2:00–3:30 EDT) of the NCATC summer 2020 series: “Advanced Technology Strategies Under Pandemic Conditions: Recruiting Students and Faculty for a Safe, High-Quality Return.” See page 5 for details.

See “Director,” page 2.

Becoming an Industry 4.0 Center of Excellence

Paving promising career pathways for students in Martinsville, Va.

As the digital world and the physical world continue to merge, it is becoming increasingly important for colleges and universities to upgrade, embrace, and fully integrate IoT- and IIoT-connected learning into industrial training programs. Patrick Henry Community College (PHCC) has built an entire educational model around Industry 4.0 career readiness. PHCC continues to innovate and invest in holistic pathway programs designed to meet the needs of today’s industrial employers. As a result, the school has redefined student success by taking it to the next level. PHCC students now have the opportunity to earn industry-approved certifications while working on their associate degrees. With the ability to access and attain competitive job skills quickly, rewarding high-tech careers are just within reach.



Known for its strong industrial programs, PHCC scaled up from a solid foundation in mechatronics to innovate and evolve into stackable credential offerings in Industry 4.0:

- Comprehensive mechatronics
- Advanced cyber-physical systems and simulation training
- FI4.OCP certifications

In the spring of 2018, PHCC integrated Festo’s Industry 4.0 Certification Program (FI4.OCP) into its existing programs in mechatronics, industrial electronics technology, and general engineering technology to provide a globally recognized validation and certification of students’ skills in areas such as mechanical systems, electrical systems, pneumatic systems, programmable logic controllers, and robotic systems.

As an Industry 4.0 Center of Excellence, PHCC is paving promising career pathways for students in highly skilled, competitive jobs of the future. To date, PHCC has issued over 300 certifications and plans to expand its certification offerings during the 2019–2020 school year. “We are creating a core workforce that can meet industry needs and attract future investments in this area,” said PHCC’s president, Dr. Angeline Godwin. “Focused industry training for both the future and current workforce is what our area needs for economic recovery.”

“We’ve had quite a few tours in our manufacturing engineering technology complex, and the quality of our labs and real-world experience that students are receiving impresses the economic developers and employers who visit,” said Rhonda Hodges, VP, Workforce, Economic, and Community Development for PHCC. “They say the quality is comparable to what they have on site. It’s definitely a benefit for students, but also for employers and our community as well.” ♦

Rowan-Cabarrus Community College and MSSC Collaborate to Increase Access for High Schools

Craig Lamb, Rowan-Cabarrus Community College

Rowan-Cabarrus Community College has been an innovator in connecting Manufacturing Skill Standards Council (MSSC) Certified-Production Technician (CPT) graduates with employers through the North Carolina Manufacturing Institute (www.ncmanufacturinginstitute.com). The institute provides employer-funded scholarships for MSSC CPT training and certification for adults who are interested in pursuing a manufacturing career. The institute's 50 investor-partner employers have provided over \$200,000 to help promote manufacturing careers and over \$350,000 in scholarships to sponsor certification training for future workers.

With the revamping of the CPT curriculum to include Industry 4.0 (through CPT4.0) and hands-on performance testing (through CPT+), employers are as eager as ever to hire graduates of the NC Manufacturing Institute. But access to high school students through their career and technical education (CTE) programs was limited because of the cost and accessibility of instructor training.

Rowan-Cabarrus is announcing a partnership with MSSC to deliver CPT and CPT+ instructor training sessions for high school CTE teachers within commuting distance of their school. Previously, instructor candidates had to travel to Jeffersonville, Indiana, to receive training and certification—incurring expense and time commitments that cash-strapped school systems were unable to meet.

The training will include 2- and 3-day options for CPT and/or CPT+ instructor certification and will be delivered at Rowan-Cabarrus's new Advanced Technology Center in Kannapolis, North Carolina. The training will be provided by MSSC master trainers and will

develop competencies in the CPT curriculum, instructional methods, test preparation, learning management system, Skill Boss

operation, and performance test administration. The goal of the initiative is to grow schools' capacity to prepare high school CTE students with skills and certifications during school and a job with an NC Manufacturing Institute employer upon graduation.

"This gives us the opportunity to better meet employer demand for certified production technicians and connect high school CTE students with high-quality jobs immediately upon graduation," said Stan Honeycutt, lead instructor for the NC Manufacturing Institute. "The barrier for our high schools was the cost and travel considerations for getting started. We plan to engage more schools, CTE instructors, students, and employers through this initiative."

In order to increase high school capacity statewide, two other North Carolina community colleges have started similar programs to keep commuting an option for accessibility to instructor certification programs. Sandhills Community College and Lenoir Community College joined Rowan-Cabarrus as MSSC instructor certification sites during the summer of 2020.

For more information about the North Carolina Manufacturing Institute or about the MSSC instructor training program, contact Donna Ludwig, RCCC Account Manager, at donna.ludwig@rccc.edu. ♦



• "Director," continued from page 1 •

Top safety protocols being provided to current and potential students:

- Health screening prior to classroom and lab participation each day
- PPE required for faculty and students
- Limited number of participants for each class
- Social distancing
- Online and hard-copy COVID regulations outlined on a handout with signature required
- Multiple communication points including email, dedicated website page, phone calling campaigns

Just a few of the best practice ideas and approaches shared in the survey are:

We spent time strategically planning how to go about the process in a safe, effective manner utilizing CDC guidelines and signage. Industry advised us on their needs and requirements. Also, the college established a COVID response team who reviews and approves or denies protocols before the start of labs and then they share best practices with others.

Chaffey College (California)

Offering more hybrid and online format as well as adjusting classroom capacity to meet the requirements of social distancing. Classroom settings are now at 50 percent or less the normal capacity.

Kentucky Community and Technical College System

A diesel instructor had a concern about meeting ASE Accreditation requirements during this semester. They solved this problem by using worksites to cover ASE-required tasks to complete the diesel program. The key piece to that was coming up with a Youth Apprenticeship Skills Checklist to make sure student progress was properly documented.

Gateway Technical College (Wisconsin)

Next Steps

There is a plethora of solid, well documented, and promising practices already happening in ATC/CTE hands-on training labs across the United States. NCATC's aim is to continue documenting, sharing, and promoting them for the greater good of our entire educational community.

To that end, our next-level approach has been to create a series of three helpful webinars with experts from industry, our strategic partners, and ATC/CTE-based education and workforce college members.

The July 31 webinar (see page 4) highlighted NCATC member colleges and industry partners collaborating to improve access to safely delivered advanced technology hands-on training in labs amid the COVID-19 pandemic. See page 5 for more about the webinars scheduled for August 27 and September 24. ♦

Collaboration Offers Workforce Solution



TOOLINGU



A partnership between Pellissippi State Community College and the Robert C. Byrd Institute (RCBI) led to a new registered apprenticeship program at a Tennessee company.

Pellissippi State Community College in Knoxville has supported apprenticeship programs in the region for years, but this is the first time the college has served as an apprenticeship sponsor, said Todd Evans, director of workforce solutions at Pellissippi State.

The company is Newell Brands of Maryville, Tenn., which is expanding its tool and die department. Newell selected two of its current employees to serve as tool and die apprentices.

Pellissippi State began laying the groundwork for the apprenticeship more than a year ago. For help in navigating the apprenticeship process, Pellissippi State collaborated with an organization with extensive apprenticeship experience, the Robert C. Byrd Institute.

RCBI's Apprenticeship Works program is supported by an American Apprenticeship Initiative grant from the U.S. Department of Labor. Apprenticeship Works provides companies and colleges with the tools they need to launch apprenticeships in 20 manufacturing occupations.

Lucinda Curry, director of Apprenticeship Works, consulted with Evans about registered apprenticeships and participated in outreach

events with manufacturers. Together they dispelled misconceptions about apprenticeships and emphasized the many benefits of a registered apprenticeship program.

The college and RCBI also collaborated to provide the online related training component at the company site through Tooling U-SME.

"We couldn't have done it as quickly as we did without RCBI," Evans said. "Once Newell decided they wanted to do it, we were able to get the program up and running in 30 days."

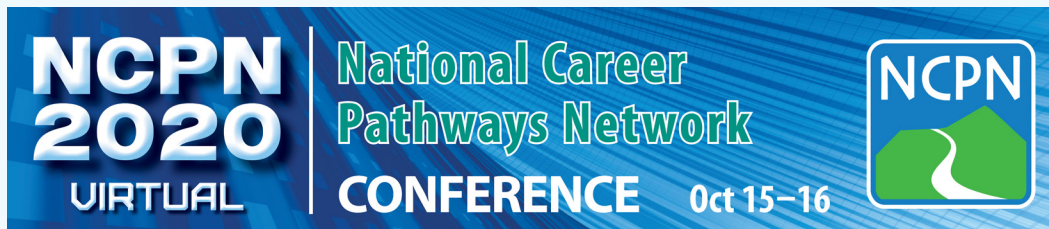
A second company in the region is expected to launch its apprenticeship program in the next few weeks, Evans said.

Apprenticeship Works now has industry partners in 18 states. When possible, the AW team partners with the local community colleges. Collaborations like the one with Pellissippi State are great for manufacturers, Curry said.

"Manufacturers and their apprentices benefit when organizations work together to provide them with all the tools they need for an apprenticeship program," she said.

For information on partnering with Apprenticeship Works, contact Curry at lcurry@rcbi.org. For information about the workforce efforts at Pellissippi State contact Evans at tevens@pstcc.edu. ♦

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Featuring Presentations by NCATC
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Great opportunity to network with career pathways stakeholders from across the country!

NCPN 2020 Virtual Conference includes:

- Live sessions on October 15 and 16
- Asynchronous breakout sessions (available for 10 months)
- Post-conference live sessions on October 30 and November 6

Special Conference Rate for NCATC Members:
\$100 (Use NCATC2020 as registration code.)

Learn More and Register Today!

WEBINAR 1: “Re-Opening ATC & CTE Hands-On Training Labs – Best Practices”

On July 31, NCATC hosted the first of its summer 2020 webinars. (See the following page for details on the two upcoming webinars.)

As the event opened, NCATC board president **Kathy Rentsch** of Quinsigamond Community College reminded viewers of NCATC’s four main focus areas:

- The Future of Work (includes Industry 4.0 and emerging trends in advanced technology, smart manufacturing, and smart automation)
- Work-Based Learning and Training (includes apprenticeships, internships, co-ops, and entrepreneurship)
- Competency-Based Education (includes applied skills and knowledge with industry-recognized credentials and certifications)
- Adult Learning Opportunities (includes a special focus on underserved and underrepresented populations)

Moderated by **Craig Lamb** of Rowan-Cabarrus Community College, the webinar brought together a panel of four experts to address strategies for safely returning to in-person instruction in postsecondary technical programs.



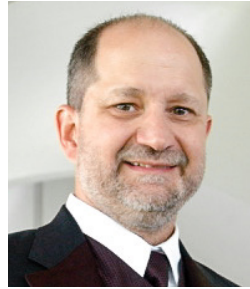
Panelist **Dan Ramirez** is Associate Director of the National Coalition of Certification Centers (NC3), an organization that focuses on the development and implementation of industry-based secondary and postsecondary certification programs across the country. Ramirez began by reminding listeners that in-person labs are critical to CTE programs.

That’s not going to change. No company will hire a welder, for example, whose only experience is virtual, he said.

Ramirez noted optimistically that the current situation is bringing about positive changes. For example, the pandemic has called for more flexibility in scheduling, along with smaller labs but more lab availabilities. This is actually preferred by students and should help to drive program enrollments, particularly when coupled with flexible remote learning opportunities.

Ramirez described lessons learned through NC3’s new virtual version of its train-the-trainer sessions, for example, that remote training can be very effective when it combines asynchronous pre-study with synchronous live sessions. In some ways, virtual meetings are actually superior to traditional classroom settings, he said. Participants are more focused and less distracted and can see and hear more easily. Elimination of the need to travel has made the virtual NC3 sessions more accessible, which has boosted enrollment. Participating trainees say they have learned techniques they can apply in their own classrooms.

How are students responding to the return to in-person teaching? Students want in-person instruction (especially in labs), Ramirez said, but combined with remote study for convenience and the ability to take courses while managing complicated life schedules and responsibilities.

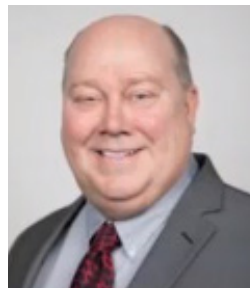


Panelist **Bruce Donato** is a principal at K&A First Aid & Safety, which helps its clients develop safety strategies that fall within the range of “acceptable risk.” In moving forward, the biggest concerns associated with hands-on technology labs, Donato said, include the danger of infection and the prevalence of misinformation.

The way to overcome those worries, Donato said, is to practice tried-and-true infection control methods and to focus on hard data and facts rather than anecdotes and speculation. It is easier to obtain people’s “buy-in” for safety guidelines when they understand the real risks.

Addressing the question of how to ensure adherence to COVID prevention protocols, Donato said that it is necessary to distinguish between laws (legally binding) and guidelines (not binding) and between permanent and temporary policies. For example, FDA Emergency Use Authorizations pertaining to “disinfectants without proof of effectiveness” are not legally binding but are accepted by the EPA.

Using welding labs as an example, Donato recommended individual workstations (already standard practice) and/or ample spacing within shared spaces, welding shields that provide respiratory protection, and wearing face coverings in general.



Panelist **Ray Koukari** is Dean of Academic Affairs at the SC Johnson iMET Center & School of Manufacturing, Engineering, and Information Technology at Gateway Technical College. Koukari talked about the “silver lining” on his campus, along with difficulties that had arisen.

The silver lining, he said, is that faculty had already been through training for online teaching, and GTC’s programs in areas such as welding and CNC were already looking for ways to increase the use of virtual teaching. Moreover, two weeks before the pandemic hit, GTC’s VP of IT announced that all programs would be transitioning from Blackboard Collaborate to Zoom as the preferred online platform.

The difficulties had to do with focus and communication, Koukari said. Everyone was excited about Zoom at first but as time wore on, enthusiasm waned, requiring more frequent communication and accountability for meeting deadlines.

Koukari talked about “the biggest worries about hands-on technology labs” and how to overcome them. The worries, he said, included capacity and its impact on social distancing. This was being overcome by limiting class size, requiring masks on campus, and applying proper disinfecting and cleaning routines and products that would ensure safety without damaging machines.

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Panelist **Matt Janisin** is Vice President of Business and Workforce Solutions at Gateway Technical College. Janisin described Gateway's plans and procedures for returning to in-person instruction, which include an overall template—the "Redhawk Return" plan—along with weekly meetings of a GPS committee. Where possible, the plan calls for limiting classes to twelve students and delivering lectures online, in conjunction with in-person labs.

In prioritizing programs for return to in-person instruction, the school followed the state's essential industry list. The GTC Police Academy was restarted the first week of April at the request of the Kenosha and Racine police chiefs. Hands-on essential-industry competencies left over from the spring semester were completed in May. During the summer, lectures have remained virtual with hands-on labs conducted on-campus in small groups.

The final speaker of the day was **Gavin Drake**, Chief Marketing Officer of EASE, NCATC's newest strategic partner and sponsor of the webinar. EASE is a global leader in high-frequency process verification audits for quality, safety, and other ISO standards. Thousands of COVID-19 protocol audits are being conducted by existing EASE customers. EASE is highly applicable to schools and colleges. The software is used via a mobile app.

The benefits of EASE include the following:

- Reduces COVID-19 outbreaks in NCATC member colleges by identifying safety process failures early
- Minimizes risk of losing large numbers of staff as a result of quarantine from Contact Tracing

- Reassures faculty and students with visibility and accountability
- Enables quick response to audit findings
- Provides real-time data and rapid, secure cloud deployment



During the webinar, Drake provided a demonstration of the mobile app, showing viewers how it would be used in different kinds of audits of safety compliance (e.g., adequacy of social distancing floor markings or sanitization procedures). Audit data recorded in the mobile app is reported to a desktop dashboard that provides real-time aggregate views of audit results. Audits can be scheduled in advance for automatic deployment.

Drake concluded by offering NCATC members an opportunity to participate in a six-week pilot involving the services of a dedicated EASE customer success manager and other benefits.

For more on EASE, visit <https://www.ease.io/>.



The webinar concluded with a Q&A session moderated by Toni Neary of Haas Tower - Morris Group Inc. Topics included the potential impact of disinfectants on lab equipment, responsibilities of faculty and students in ensuring on-campus safety, and the impact of the digital divide on virtual teaching and learning, among others.

To view the webinar, go to <https://register.gotowebinar.com/recording/699415148225813507>. ♦

WEBINAR 2: "Advanced Technology Strategies Under Pandemic Conditions: Recruiting Students and Faculty for a Safe, High Quality Return"

August 27, 2:00–3:30 EDT

This webinar will highlight NCATC member colleges and industry partners collaborating on best practices of attracting students and faculty to high quality, safely delivered advanced technology related career and technical education (CTE) hands-on training amid the COVID-19 pandemic.

Sponsored by NCATC Strategic Partner



Keynote
Mark Perna
Speaker, Author and
CEO, TFS Results



Speaker and Moderator
Chris Lewis
VP of Workforce Development,
Rock Valley College (IL)



WEBINAR 3: "Professional Development for Faculty During Pandemic Conditions"

September 24, 2:00–3:30 EDT

Sponsored by NCATC Strategic Partner



Registration for WEBINAR 2 is
open at www.ncatc.org.