



From the Director ...

NCATC Friends and Colleagues,

The “New Normal” is what all of us are working hard, smart, and safely to define, refine, and adjust to as we move through spring, into summer, then fall of 2020.

Through all the pain COVID-19 has caused and continues to cause in the world—we all have a chance to imagine and build a much better “New Normal 2.0.” The one thing we can control—right here and now—is our perspective.

There is no better time than now to begin this process. More than at any time in recent memory, these issues have our attention. There is widespread acknowledgment that these are changes—at both the collective and individual level—we can no longer postpone. So, let’s all take advantage of that.

For the foreseeable future, our economy will stumble through a slow thaw and millions of people will be out of work. Now is the time to help these unemployed workers and first-time college students acquire the skills they will need to thrive in our tech-powered economy.

The urgency to get people back to work means that a short-term program in cloud computing, for example, might be far more important to some underserved learners than the deferred payoff of a conventional four-year degree. Millions of Americans do not have the luxury nor the means of waiting.

Higher education is built around the *credit hour* as a measure of learning time. We build courses and programs on the number of credit hours required, assign faculty workloads on credit hours, allocate classroom space on a time basis tied to the credit hour, and disperse over \$150 billion in federal aid on the basis of time.

The problem is: time is a poor measure of learning—the credit hour is pretty good at indicating how long someone sat in a classroom, but not what they actually learned—and it often hurts the poverty stricken.

The “future of work” is changing at a ferocious velocity and we will all be learning and re-learning throughout our careers. Higher education’s “New Normal 2.0” task is to offer just the right kind of learning in just the right amount in just the right way. We’ll know we have it right when students can:

- Begin a program of learning on any day of the year.
- Go as fast or as slow as they need and pause when they want.
- Pay for mastery and actual learning instead of how long they spent sitting at a desk.
- Get learning from any source, if they can demonstrate it and it can be rigorously assessed.
- Get financial aid for a wider array of programs offering a wider array of industry-recognized credentials from a wider array of providers.

On May 1, the House Committee on Education and Labor introduced the \$15 billion [Relaunching America's Workforce Act](#) (RAWA), the first round in the fight for a better post-COVID-19 future for America’s workers. The proposed legislation builds upon precedents established by the Great Recession-era American Recovery and Reinvestment Act of 2009 (ARRA) as well as the workforce system streamlining authorized by the Workforce Innovation and Opportunity Act of 2014.

NCATC will continue to expand, explore, and exploit important, emerging technology trends in advanced technology related and industry-driven workforce development needs for the 21st century together with our education, workforce, and strategic industry partners and members.

We are committed to minimizing the spread of COVID-19 while maintaining quality membership value and benefits. We appreciate your ongoing connections, memberships, and partnerships with NCATC during this difficult time in our Nation’s history.

While we have taken prompt, decisive, and appropriate steps to postpone all NCATC in-person events originally scheduled for June and September 2020, we will be offering several virtual *Future of Work* and *Industry 4.0* related sessions and a **Summer 2020 NCATC Virtual Micro-Conference** in the very near future for all NCATC members. *Look for announcements in your inbox very soon!*



We encourage you to stay regularly connected and up to date on all ATC related “New Normal 2.0” activities and guidance via the weekly updated NCATC [website](#), social media (*LinkedIn*, *Facebook*, *Twitter*), and quarterly e-newsletters like this one.

J. Craig McAtee
NCATC CEO and Executive Director ◆

COMING THIS SUMMER

NCATC Virtual Event

Sessions will cover topics impacted by the “New Normal 2.0” such as:

Professional Development
Student and Instructor Recruitment

Best Practices in Safety and Finance

Watch your inbox for details!

Facing the COVID-19 Crisis: Resources for Educators Pivoting to Online Education

Jeannine Kunz, Vice President, Tooling U-SME



In just the last six weeks, our educational system has been completely transformed. To mitigate the spread of COVID-19, many states have now ordered or recommended that schools don't reopen this academic year, and instead, rely on remote learning.

In an impressive feat, Department of Education leaders and instructors across the country quickly pivoted to find virtual solutions for their students. Suddenly, online education has become an urgent national necessity.

As a non-profit organization committed to developing the workforce, we work extensively with schools, workforce development organizations, economic development groups, manufacturers, and departments of education to address this and other challenges.

Now more than ever, we are mobilizing to quickly transform traditional classrooms into overnight digital learning environments and to redesign our offerings to best meet short-term educator needs. And while we will eventually return to the classroom, we all recognize there will be a new normal. Technology will be a regular part of the classroom—and a source of continued innovation as new and improved technology becomes available.

We are proud to support the outstanding work and best practices being carried out as the community of educators and manufacturers comes together in this time of crisis. Today we want to share some of the initiatives that can help educators on the front lines.

Resources for CTE Programs—Career and technical education (CTE) programs face unique challenges. The hands-on portion of learning is as important as the classroom piece. How do we teach hands-on skills in a distant learning environment? For instance, how do you weld virtually? Educators are looking for creative solutions and technology to help answer these questions.

To help with these challenges, we have joined together with industry partners to form the CTE Coalition. This group of world-class leaders is providing the resources necessary to keep CTE programs moving forward despite the closures.

Just in the last weeks, to address immediate needs, we've given bundles of online classes to over 3,200 students at 74 schools across the county. These program bundles include core machining, mechatronics, welding, Industry 4.0 / Smart Manufacturing, and foundational skills classes.

We also are sharing videos, at no charge, on manufacturing processes, technology, and systems.

Best Practices for Instructors—To help share best practices, we recorded sessions with instructors as they share insights and real-world examples of how they have used eLearning with their students. These interviews are an important resource to help schools quickly transition to a virtual learning environment.

Online Curriculum—We are partnering with hundreds of high schools, community colleges, and universities to provide online curriculum as they shift from face-to-face instruction to an online format.

Despite some uncertainty of switching to a new learning system under such extreme conditions, students and instructors are sur-



prised with the ease of set up and welcome the flexibility it provides. School now goes beyond the classroom setting. It is 24/7 on tablets and smart phones via our mobile app.

We are here to partner with you to create tailored solutions for your distance learning needs now—and to help you think ahead to what you may need in the future. For instance, along with helping schools finish their current programs online, we have also been engaged with delivering related training instruction for apprenticeships online, certification training such as NIMS and MSSC online, and short-term training programs.

MEPs, Community Colleges, and Economic Development Organizations—Tooling U-SME has a long-standing partnership with The Manufacturing Extension Partnership (MEP) network combining each of our strengths and resources. For instance, we are working with the MEP at Columbus State in Ohio to offer a new online training program that pairs with one-on-one virtual coaching by the community college's faculty and professional staff. This online training allows employees to upskill in preparation for a new industry landscape in the coming months.

Preparing for New Technology—New guidelines related to COVID-19 have forced companies to take a close look at new technologies both to help address challenges today and for future growth and innovation. While early adopters are already embracing a smart manufacturing strategy, the vast majority of manufacturers have yet to begin their journey. This unprecedented time is accelerating the process, and it is essential that the workforce acquire new skills to meet the need.

To help, we are adding new eLearning classes on various aspects of Industry 4.0, including additive manufacturing, cybersecurity, data collection, and machine learning. Dozens of these classes are already available, and we are working with industry and academia to incorporate them into effective blended learning programs.

This fall we are piloting new XR (Augmented Reality/Virtual Reality) labs to deliver training. Student safety is at the top of the list of benefits. XR is a way to train and skill build before a student or employee uses real equipment. This breadth of delivering instruction means that we have Industry 4.0 training and development solutions that work for virtually every manufacturer, big or small.

Sharing Ideas and Experiences—We are in constant touch with hundreds of schools and manufacturers and can share ideas and practices that are making a difference in their worlds as they build the next generation of manufacturing workers—and might make a difference in yours.

Together we can make a difference every day. There is no doubt educators continue to play a critical role in getting our nation through this crisis by preparing the current and future manufacturing workforce. As the mother of two grade school children, including a high school freshman, I personally receive emails from educators and administrators using all the tools they can to continue teaching while keeping students focused and calm. The commitment to our youth has never been more evident.

Be safe and stay well. ◆

BridgeValley Workforce Blended Learning Models Provide Adaptability to Keep Going

Developing strategies for success in changing circumstances

BridgeValley Workforce and Economic Development non-credit programs in Utility Line Service and Commercial HVAC/Building Automation are offered in a blended model to fit industry needs and provide students with flexibility. This mode of delivery includes online modules that are aligned with in-person, hands-on requirements throughout the program.

The Utility Line Service program consists of four classes spanning a 24-week period as shown below.

Course Name	Wks	Hrs	Delivery Mode
Line Mechanic Climbing Fundamentals	3	120	In-person
Electrical Distribution 1 (ED1)	5	200	Online and In-person
Electrical Distribution 2 (ED2)	8	160	Online during OJT
Electrical Distribution 3 (ED3)	8	160	Online during OJT

The Line Mechanic Climbing Fundamentals class challenges students with the physical requirements of this career. Students must pass a DOT physical and drug test and have their Class A CDL learner's permit to start the class. They must also successfully climb 40-foot poles and perform a pole-top rescue in a timely manner.

Students who continue to Electrical Distribution 1 (ED1) will continue to develop skills in climbing and pole installation while completing 26 online course modules. Once the online modules have been successfully completed, the students must pass a proctored comprehensive exam.



Skills upon program completion include pole climbing with fall protection, pole-top rescue, aerial lift rescue, operation of a material handler bucket truck, operation of a digger derrick, rigging, chain saw safety, rope knots and slings, CDL Class A Pintle Hook, OSHA 30, first aid and CPR, fork lift certification, heavy

equipment (skid steer, backhoe, mini excavator), and single and three-phase transformers.

Students who successfully complete this 8-week period will be placed with an on-the-job training (OJT) opportunity with an employer partner for up to 16 weeks. During this OJT period, students are required to complete two 8-week online course modules (ED2 and ED3) while working in the field. These classes require passing a proctored exam to continue; the proctored exams are held on campus. For students working in remote or distant locations, the exam can be set up with a student's employer, if the employer completes the partner employer test supervision agreement.

Adjustments after the pandemic stay-at-home orders—When the state issued a stay-at-home order, our college moved to an online delivery mode for the remainder of the spring semester. The Utility Line Service program, which uses blended delivery, was able to pause the in-person instruction and move students to complete the

online portions. Once students completed the online requirements for ED1, our instructors developed the following method for proctoring the required exam to allow moving on to ED2.

As pictured below, students parked near the building and connected to WiFi (or a hotspot) to take the exam after the instructor sent them the exam link. The online instructor set up a conference call to review exam procedures and requirements, then had students place their cell phones on the dashboard of their vehicle as they completed the exam, while the in-person instructor proctored the use of cell phones. After the students successfully pass the exam, they are allowed to move forward in the ED2 online work. In-person activities will continue as soon as the stay-at-home order is relaxed and it is considered safe to continue while following physical distancing and sanitizing procedures.



For more, contact Jeff Wyco at Jeff.Wyco@bridgevalley.edu. ♦

ZEISS Academic Program Provides Latest Inspection Technology to Tech Colleges

Do manufacturing and engineering students know the value of industrial metrology? The ZEISS Academic Program is spreading the word by helping higher education introduce the latest inspection technology into lab curricula.



"ZEISS is committed to universities and students in the sciences," says ZEISS Academic Program Manager Lauren Van Beek. "We provide package discounts and donate ZEISS CALYPSO for free. Teachers can use the measurement software for offline operations that can be transferred to equipment." ZEISS also has experts for onsite training and phone support.

Two Midwestern schools have greatly benefited from the ZEISS Academic Program—Chippewa Valley Technical College (CVTC) in Eau Claire, Wisconsin, and Ozarks Technical Community College in Springfield, Missouri

According to Paul Girolamo, mechanical design instructor at CVTC, "A partnership developed with ZEISS the first time we sat down together." Girolamo uses a ZEISS COMET 3D scanner, ZEISS O-INSPECT coordinate measuring machine (CMM), and ZEISS CALYPSO measurement software for classes such as Measurement for Engineering and Geometric Dimensioning and Tolerancing in the Mechanical Design and Manufacturing Engineering programs. "The high-tech ZEISS equipment really catches students' eyes," says Girolamo.

See "ZEISS," page 5.

Annual State of the St. Louis Workforce Report Tracks Workforce Issues

Hart Nelson, Associate Vice Chancellor for Workforce Solutions, St. Louis Community College

Our chancellor, Dr. Jeff Pittman, frequently talks about the need for the college to change to meet current student and employer needs. He points out that we must recognize that the pathways to employment today are not the same as those from ten years ago, much less those available when STLCC was built in 1962. The workforce landscape has changed, and we at STLCC are committed to changing with it to ensure that none of our neighbors are left behind.

The State of the St. Louis Workforce Report has now entered its second decade of providing information and insight into the economic conditions and workforce issues facing our region. For the last 11 years, we have tracked the region's transition from the high unemployment of the Great Recession through a decade of growth to a labor market constrained by a lack of available workers.

While two years ago we were surrounded by evidence of economic growth and a full employment economy, our 2019 report provided indications that employers are at least somewhat concerned about the future and are taking steps to reduce risk.

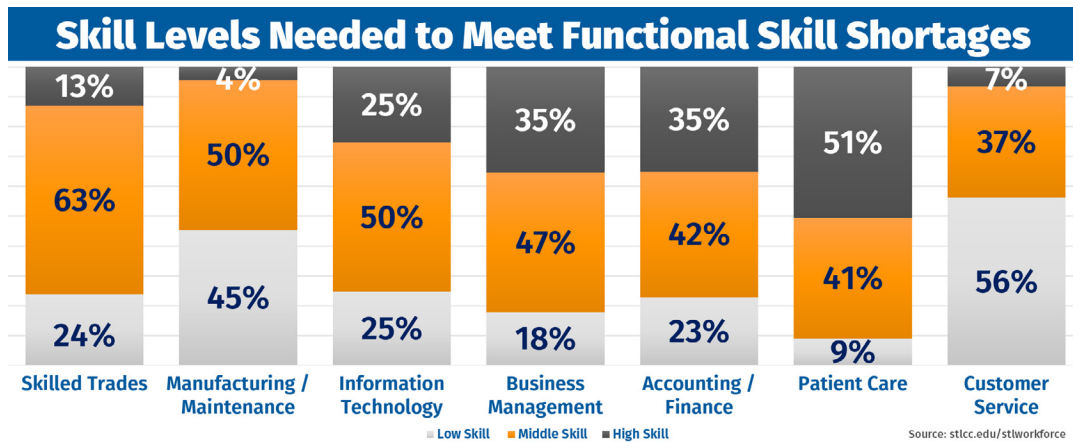
Over the last year, the economic conditions have reflected this decade of recovery and growth. The gap between the unemployment rate and the number of job openings remains at its lowest level ever. But the reality is that unemployment rates vary greatly depending on age, race, and other factors. Younger workers, particularly those under age 22, had unemployment rates at or above 8.5 percent in the St. Louis metro during 2017. Men in the 16–19 age range had the highest rate at 16.7 percent. And, as our report highlights, other groups within St. Louis are facing similar chal-

lenges. The 2019 report takes a closer look at three populations in the St. Louis region that are continuously under-represented in the workforce: African American men aged 18–24, people with disabilities, and justice-involved individuals. We partnered with three local organizations that serve these groups to obtain direct perspectives about the people being left behind, why this is happening, and what is currently being done about it.

Our 2020 State of the St. Louis Workforce report will be released this October.

We will look at the workforce in a time of pandemic and how COVID-19 has impacted employers, workers, the economy, and our community—and what is needed to achieve a successful recovery.

Find out more and download the full State of the St. Louis Workforce reports at STLCC.edu/STLworkforce. ♦



Reconnecting with Businesses Post-Pandemic

Creating a safer workspace through free safety awareness courses

Area business partners are preoccupied with keeping their business viable and profitable during the COVID-19 pandemic. How can you begin reengaging with your strategic business partners? One way is to offer something of value at little or no cost. Harper is doing this by offering free safety training to area businesses.

According to the Occupational Safety and Health Administration (OSHA), about 6,000 employees in this country die from workplace injuries while another 50,000 die from illnesses caused by exposure to workplace hazards. In addition, 6 million workers suffer non-fatal workplace injuries at an annual cost to U.S. businesses of more than \$125 billion.

In an effort to create a safer workplace environment for area businesses, Harper College is offering free safety awareness courses. Courses include:

- Preventing Slips, Trips and Falls: A Training Program for Small Businesses
- Introduction to Safety and Health Management for Managers and Supervisors
- Fall Hazard Awareness in Construction and General Industry
- Electrical Hazards Awareness (includes Lock Out Tag Out)

Benefits of attending Harper's free and interactive training courses include decreases in employee turnover, training expenses, workman's compensation expenses, and time away from work. The courses can also help businesses avoid workplace disruptions, loss of productivity, and insurance premium increases, among other negative impacts.

Experienced safety professionals and Occupational Safety and Health Administration outreach trainers will lead the sessions.

Harper College provides these courses with the support of a \$180,000 Susan Harwood Training Grant. This grant provides

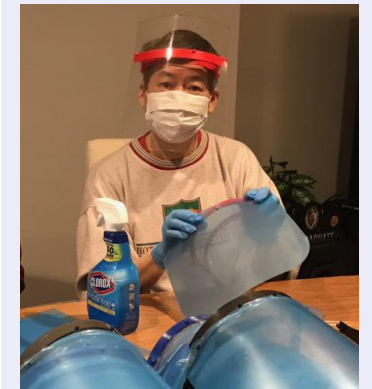
training and education for workers and employers on workplace safety and health hazards, responsibilities, and rights. Target audiences include businesses with two to 250 employees within the United States, including low-literacy and high-hazard industry workers and employers. With sufficient notice, Harper also can provide training in Spanish and American Sign Language. (Government employees are ineligible to participate due to grant regulations.)

The bottom line—Harper's FREE safety training will help you and your business:

- Avoid worker replacement costs
- Reduce employee turnover
- Reduce training expenses
- Avoid insurance premium increases
- Reduce workman's compensation expenses
- Reduce time away from work
- Increase productivity and worker morale
- Improve customer service and quality
- Avoid workplace disruptions
- Avoid loss of productivity

The goal is to create a safer environment for all employees.

For more, contact Maria Coons at mcoons@harpercollege.edu. ♦



Harper College students are doing their part to save lives and flatten the curve. For example, the college is partnering with one of its sender high school districts in the production of 3-D printed, laser-cut full-face protective shields for essential workers on the front lines of the coronavirus battle.

• "ZEISS," continued from page 3 •



Girolamo is tackling the manufacturing industry's widening skills gap. "ZEISS helps us provide skillsets to students that our local industry partners need," he says. And ZEISS helps keep up with technology trends guided by those local businesses. "We're currently building a fab lab for our plastic and metal 3D printers," says Girolamo. "Our ZEISS O-INSPECT will be relocated to the new fab lab so students can verify 3D-printed parts."

Chad Viele, precision machining technology instructor at Ozarks Technical Community College, has similar praise for ZEISS. The school's two-year Precision Machining Technology program acquired two ZEISS DURAMAX shopfloor CMMs in the last year to be included in a new Center for Advanced Manufacturing.

"This won't be the machine shop of your parents' generation," says Viele. The current lab is half manual and half computer numerical

control (CNC) machines. The new center will have ZEISS and other state-of-the-art equipment in a clean, high-tech manufacturing environment.

Students use the CMMs to learn how in-line metrology reduces cost, time, and waste to improve manufacturing efficiency. Viele credits the two CMMs as being user-friendly and very teachable. "They're durable, compact machines that we can put in rough production environments," he says. "We all make mistakes starting out, but we don't worry about these machines being damaged when students make those mistakes."

It helps that ZEISS is a readily available resource. "Lauren has been great to us," says Viele. "She did my initial training on the DURAMAX and CALYPSO software. She adapts training to the background of the user in really accessible ways."

Both instructors look to ZEISS as a supply leader. "ZEISS has been a stellar win for us and our students," says Girolamo. Viele anticipates adding even more to OTC's Center for Advanced Manufacturing. "We are looking to purchase a larger CMM for the new facility's dedicated quality lab."

For information about the ZEISS Academic Program, contact Lauren Van Beek at academicprogram.imt@zeiss.com. ♦