

Techniques

JANUARY 2019

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Business & Community PARTNERSHIPS

- Colorado Partners Educate a Strong, Prepared Workforce
- ACTE 2018 Annual Report
- Astronaut Alumnus Partners with School to Engage Students in CTE
- Energizing Education to Spark Change

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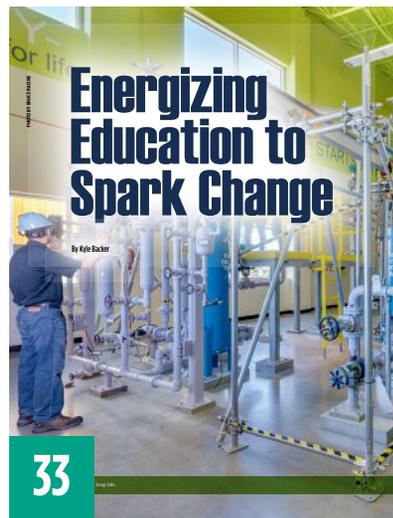
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acteonline.org/cte-month-nasa-hunch-video-challenge

BUSINESS AND COMMUNITY: PARTNERS FOR SUCCESS



CAREER AND TECHNICAL EDUCATION (CTE) PROGRAMS IN TODAY'S ENVIRONMENT

cannot “go it alone,” nor should they. Employers and other important colleagues in the community can be critical partners, helping to shape curriculum, support students and advocate to important audiences, to name a few of the benefits.

This issue of *Techniques* explores some of the ways that programs have developed effective partnerships. We'll investigate how secondary educators are working to build

shared purpose and expand opportunities for students through collaborative efforts with local, state and national public safety organizations.

This edition will also identify how school districts have partnered to fill a collective need, evidenced by the effective and innovative advanced manufacturing programming and partnerships at the MiLL National Training Center in Colorado.

Partnerships can materialize in a variety of different ways. We hope this issue will help to provide you some new ideas about how you might creatively approach partnership in the future. For instance, our cover story on Blue Hills Regional Technical School's collaboration with NASA, as part of their “A Year of Education on Station” initiative, evolved due to an alumnus:

“I had this goal [of becoming an astronaut],” said Tingle. “I wanted to make it happen. It was important for me to come back and speak to the people who helped me to achieve it. It

was really humbling and just a joy to be able to do that.”

States are currently developing plans for implementation of the new Perkins V law, which will reach local programs in a year or two. The new law stresses the importance of business and community partnerships, with business and industry, between secondary and postsecondary education, and through other connections, and a new local needs assessment will require more formalized consultation with these partners.

ACTE's high-quality CTE initiative and related program self-evaluation tool and resources can support your work in this area. This issue of *Techniques* includes an in-depth look at one of the 12 elements within the High-quality CTE Framework, which I know will be a support as you prepare to improve your program.

The term “partner” conveys a certain shared responsibility and mutual benefit. Admittedly, building partnerships is not always a simple and easy task. Programs have to communicate the value of building a relationship, and often the individuals you wish to reach are just as busy as you are, with their own priorities and goals. But effective partnerships can set you on the path to a stronger, more effective program.

I wish you the best as you seek to strengthen partnerships in your own communities, to help meet workforce needs and prepare all students for an exciting future in a career of their choice.

LeAnn Wilson

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South Dakota High School Students Embrace CTE

The beginning of the 2018–19 school year saw 100 students at Bridgewater-Emery High School enrolled in career and technical education courses. With a student body of just 112, this is an accomplishment worth celebrating! CTE programs at the Emery, South Dakota secondary school are built on a foundation of collaboration, where instructors, administrators and community stakeholders work together to equip students for success.

"Our programs have high enrollment and interest among students because our CTE teachers are passionate and very knowledgeable regarding their programs," said Christena Schultz, principal. "They do an excellent job of keeping their programs current, relevant and engaging." bit.ly/2Bc4e1b



Oklahoma School to Offer Agricultural Education Courses

In Bartlesville, Oklahoma, secondary students will soon enjoy opportunities to learn the science behind modern agriculture. Class offerings will begin in 2019–20 for eighth and ninth graders, including agriculture exploration and orientation and a foundational introduction to agricultural science.

"We feel that we're missing out on some students, and we can provide more opportunities [in this area of education]," said Stephanie Curtis, executive director of personnel and school support at Bartlesville Public Schools. "To my knowledge, we've never had agriculture education at the Bartlesville School District.

"Every year we'll add a new upper-level course; the program is going to grow really fast," she continued. "We're going to need a really dynamic teacher who can build a program from the ground up." bit.ly/2xmJQZ1



CTE Students Achieve on the World's Stage

JEE Foods, a student-run nonprofit at Ross High School in Ross Township, Ohio, received international honors at the 2018 SAGE World Cup for social enterprise business. Butler Tech information technology program students at Ross founded the initiative to address United Nations Sustainable Development Goals for no poverty and zero hunger. To this end, JEE Foods has partnered with local restaurants and companies to collect, preserve, store

and serve food throughout their community.

"It was heartwarming to know the international community could put differences aside and come together for a greater purpose," said Michael Rivera, CEO of JEE Foods and a Ross High School senior, of the SAGE World Cup. "We all have a responsibility to be global leaders, regardless of age."

bit.ly/2MK57AD





Rain, Rain, Go in the Garden Instead

With support from an invested community, fifth- and sixth-grade students at Pomfret Community School, in Pomfret Center, Connecticut, built a rain garden for science. Where local officials, including Jean Pillo of the Eastern Connecticut Conservation District, and residents face a challenge to address storm-water runoff and pollution, rain gardens have been an answer. Pillo received funds from the Long Island Sound Futures Fund to build 100 rain gardens throughout the district and to endeavor upon education and awareness efforts.

Students at Pomfret, led by their teacher Tim Hotchkiss, built a garden that measures eight- by 16-feet and 12 inches deep; the rain garden is filled with peat moss, mulch and “a variety of water-resistant plants.” No longer does rain water overflow the curb and run into the brook. Hotchkiss has imbued key science concepts — about the environment, plants and animals — with real-world application to make a difference in his students’ lives and the world. <https://cour.at/2ERCD9A>

PHOTO CREDIT: PHYLLIS LABELLE

Learning from the Pros

Borne out of the Madison School District Personalized Pathways program, annual events such as the recent “Food Matters” offer students opportunities to engage and learn from industry leaders in career fields of interest. La Follette High School’s Health Services pathway centers “leadership for community health and wellness,” explained Kris Howard.

“[When we began Personalized Pathways], we knew right away we wanted to get the ninth graders involved,” Howard continued. “We wanted them to meet adults from the community working in various, formal and informal, leadership roles. And we wanted to make sure we gathered a diverse group of adults who represent the community.”

Students asked questions about food and nutrition systems, access and more about necessary education for careers in the field of health and wellness. And the takeaway? Knowledge, yes, and action! Students are encouraged to use their newfound expertise to influence change. <https://bit.ly/2SzaPtw>



Do You Have News?

CTE in the News is a new monthly column in *Techniques* to highlight the buzz about career and technical education. If you have something exceptional (or exceptionally cool!) to share about your program, school, school district or organization, send it to techniques@acteonline.org.

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ENGAGING BUSINESS AND COMMUNITY IN THE FAMILY & CONSUMER SCIENCES CLASSROOM

By Natalie Hancock

IN THE REALM OF CAREER AND TECHNICAL EDUCATION (CTE) IT IS IMPORTANT THAT EDUCATORS BE

able to make connections with local businesses and the community; doing so helps to ensure that they stay informed on current trends and knowledgeable about how those trends impact what is taught in the classroom. Enabling students to make real-world connections is vital because they need to understand the opportunities available to them once they graduate high school, whether that is pursuing a certification program or a postsecondary degree.

There are different ways in which the classroom teacher can engage with businesses and their community. We are going to discuss a few of these and how they can be applied in your school environment and, in some instances specifically, the family and consumer sciences (FACS) classroom.

1. Connect with your local chamber of commerce.

Contacting your city's chamber of commerce, or attending a meeting, is a

wonderful way to connect with business leaders within your community. Your district's work-based learning staff may already have a contact with the chamber of commerce but, if not, reach out to the chamber yourself and invite its members into the classroom to give a presentation on their business(es). Some businesses are even open to field trips. These are excellent opportunities for students to learn about local industry and ask specific questions they have.

2. Ask a colleague.

As mentioned, work-based learning or career counseling staff can be a great resource. These individuals have opportunities (and time) to form connections with business and community that you, as a classroom teacher, may not; with connections such as these they can help you bring in guest speakers.

If you happen to live in a more rural area, then technology comes into play. The guest speaker can visit your classroom via Skype, Google Hangouts, FaceTime or Zoom, depending on what your district

has available. You may even be able to participate in a virtual field trip.

3. Leverage technology.

Third, as CTE educators we understand how beneficial technology can be for student learning. When leveraged to make connections between business and industry, technology can facilitate guest speakers and virtual field trips, and foster connections that may not have existed before. We can harness technology by utilizing social media to find and create connections with those who could volunteer in the classroom, provide internships, be a guest speaker or host a field trip at their location.

4. Host a career fair.

In a comprehensive high school where student interests vary, hosting an all-school career fair is a wonderful way to introduce students to business and their community. The all-school career fair offers an opportunity for students to explore their interests after high school and for educators to highlight career areas students may not even realize exist.

“When leveraged to make connections between business and industry, technology can facilitate guest speakers and virtual field trips, and foster connections that may not have existed before.”

5. Invite business and community leaders to judge student events.

Many CTE teachers are involved as advisers for career and technical student organizations (CTSOs) such as the Family, Career and Community Leaders of America (FCCLA). According to the National Coordinating Council for CTSOs (2018), these organizations “enhance student learning through contextual instruction... applied learning and real world application.” To facilitate this enhanced learning, the CTSOs have a competitive side. Events and contests make for great opportunities to invite business and community members as judges.

Judges with background knowledge relevant to each event will make the process even more significant for the students. There are businesses that require employees to do a certain number of volunteer hours. Do a little research, or contact your local chamber of commerce, to find a business in your area that may be willing to have their employees donate a few hours to judging.

Considering FACS Application

Remember this is not an exhaustive list. You do not need to implement every strategy for bringing business and community into your classroom. Identify a course and lesson for which you can enhance the career connection. For this course ask yourself, “What is the best way to begin to invite business and community into my classroom?”

Start small; invite a guest speaker on a specific topic. For example, if you are teaching a child development course and the topic you are to cover is adoption, reach out to your state’s adoption council and see if a representative would be willing to present in your class. The representative from the council may be a birth parent or adoptive parent. They bring with

them a unique perspective that you may not be able to present to your students.

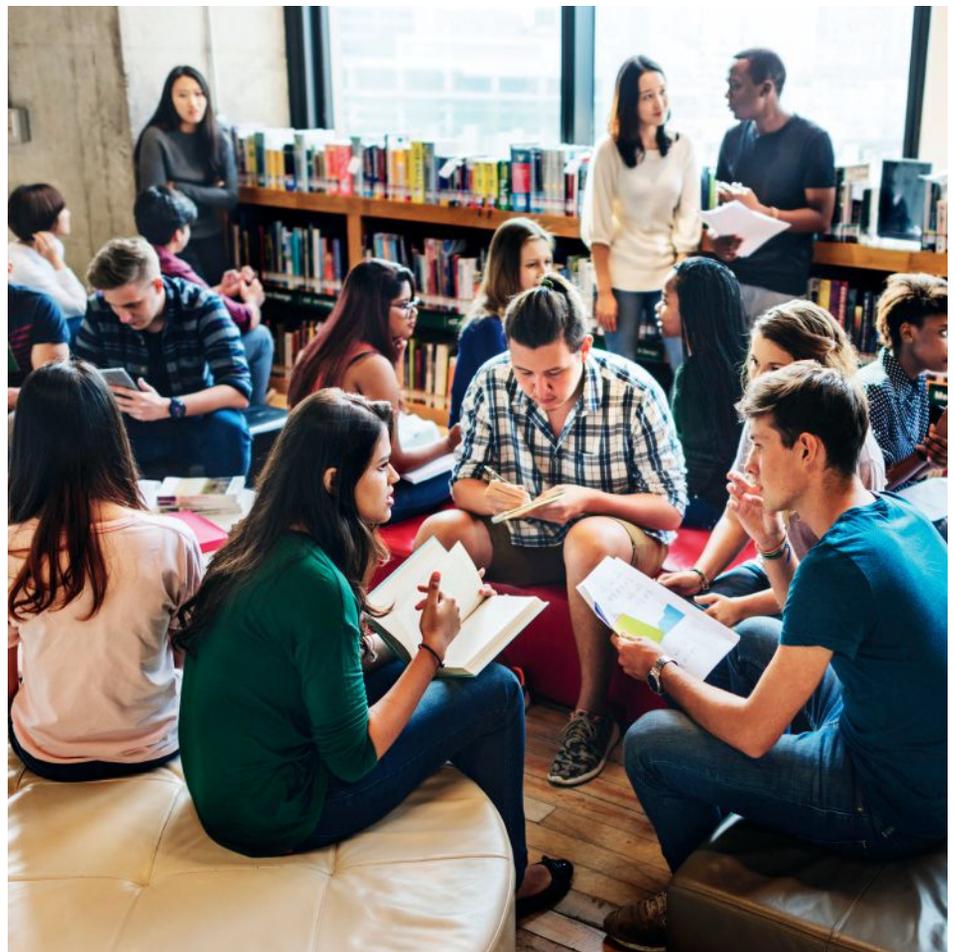
To make connections that work within the culinary arts curriculum, reach out to a local restaurant and ask the chef, manager and/or owner if they would be willing to give a tour of the facility and talk with culinary arts students. Topics might include: How does the restaurant run? What do the day-to-day business operations of a restaurant look like? How does the chef decide on their menu? This gives students an opportunity to connect what they have learned in class with how they can apply it once they complete high school.

Interactions with business and the community can happen in a variety of ways. What was shared with you are highlights of some aspects. The opportunities are limitless if you will ask. ■

Natalie Hancock is an assistant teaching professor of family and consumer sciences education at Brigham Young University. Email her at natalie_hancock@byu.edu.

REFERENCE

National Coordinating Council for Career and Technical Student Organizations. (2018). About. Retrieved from <http://www.ctsos.org/>.





BUSINESS & COMMUNITY PARTNERSHIPS

By Catherine Imperatore

IN NOVEMBER/DECEMBER WE INTRODUCED ACTE'S 12 ELEMENTS OF HIGH-QUALITY CTE. HEREAFTER, THE Quality Counts column will describe each element, sharing examples of successful strategies that support quality within that element and pointing readers to relevant resources in our High-quality CTE Tools online library. We will begin our element-by-element review with element No. 8, Business and Community Partnerships. The criteria shared below can be found in the 2018 version of the ACTE *Quality CTE Program of Study Framework*.

Criteria for Developing Business and Community Partnerships

a. Representatives of the program of study actively conduct outreach activities to develop partnerships to ensure the program of study is informed by employer and community needs.

Without recruitment to potential partners in industry and the community, programs of study can fail to connect with employers and organizations that bring the most value. To conduct active outreach, practitioners should consider the proper medium for contacting potential partners, the ideal frequency of recruitment efforts and the number of steps from first contact to full-fledged partnership. In addition, practitioners should prioritize partnerships that respond to specific, local needs.

b. Partnerships are formed with a diverse range of stakeholders who represent differing perspectives, including employers from small, medium and large businesses; industry representatives; community, workforce and economic development agencies; and other education stakeholders.

The second criterion encourages diversity across types of partners so that

relationships are formed not only with employers and industry representatives but also with community, workforce and economic development agencies, other education institutions and representatives of various student constituencies. In addition, programs of study should seek diversity from across small, medium and large employers and industries. Programs should strive to find partners who provide examples of success for young women, students of color and students with disabilities.

c. The program of study has a formalized, structured approach to coordinating partnerships, such as an advisory board or sector partnership.

When a program of study has an institutionalized approach to coordinating partnerships, those partnerships are more likely to be sustainable. In contrast, partnerships developed on the strength of

personal relationships between individuals rarely stand the test of time. Documents such as charters or bylaws provide evidence of a formal structure, as do standardized processes for hosting meetings, recognizing partner contributions and evaluating partnership benefits.

Two potential partnership structures are suggested in this criterion: advisory boards or committees for CTE programs, and sector partnerships, which typically encompass a range of employers within an industry operating across a state or region. Other structures may be more appropriate, or programs of study may decide to organize partners into multiple groups with differing activities and goals.

d. Partners ensure that the program of study meets current and future workforce demand and skill needs by:

- Identifying, validating and reviewing curriculum
- Identifying appropriate assessments and recognized postsecondary credentials
- Evaluating facilities, equipment, technology and materials to ensure consistency with industry standards

e. Partners support students' and teachers' extended learning by:

- Identifying, providing and evaluating work-based learning experiences for students
- Participating in CTSO activities; for example, by serving as mentors and judges
- Offering opportunities, such as externships, for educators to stay current with industry-relevant knowledge and skills

f. Partners support the program of study in tangible ways, such as by investing funds, providing in-kind support and/or helping raise external funds to meet program of study goals.

g. Partners support program of study sustainability by advocating for and promoting the program of study.

h. Partners help to evaluate the effectiveness of the program of study in preparing students for further education and careers.

Criteria d.–h. describe all of the ways in which partners provide support to the program of study. No one partner can provide assistance with all these projects; rather, the program of study should involve multiple partners whose combined capacity and talents can meet these needs.

These eight criteria within the Business and Community Partnerships element speak directly to the structure and role of partnerships in the program of study. However, other elements of ACTE's quality framework also contain criteria relevant to partners, such as the need to keep partners informed about program of study standards and data. Therefore, users of the framework should not confine themselves to this particular element when considering partnerships as part of a quality program of study evaluation.

Differing Approaches to Developing Partnerships

Within these criteria, there is room for practitioners to exercise flexibility as they develop and structure partnerships that best fit their needs and context. For example, St. Louis Park High School in Minnesota has one large advisory board for five CTE programs: business and marketing, health sciences, engineering and technologies, law and public policy, and media arts and communication. This structure avoids overlap, as several board members have expertise relevant to multiple industries. A career pathway advisory board facilitator organizes activities and recruits members for the board, which typically numbers 35–45 representatives from business and industry, community organizations, postsecondary education, and school and district staff. Board members have provided work-based learning experiences, hosted a Career Expo and given input on the school's five-year plan, and the board was instrumental in developing the health sciences and engineering and technologies pathways.

The Academies of Nashville, in contrast, have developed a tiered structure for partner engagement, with advisory boards for each academy that evaluate curriculum alignment to industry standards and provide work-based

learning; industry-specific partnership councils that take a districtwide perspective on academy resources and labor market alignment; and CEO Champions, who advocate for the Academies of Nashville across the region. These partnerships are coordinated with support from the PENCIL Foundation, a local organization dedicated to connecting Metro Nashville Public Schools with community resources.

Partnership Tools

To develop and sustain quality partnerships, practitioners can turn to ACTE's High-quality CTE Tools online library. Resources within the Business and Community Partnerships section of the library address engaging partner prospects, improving advisory board communication and building partnerships step-by-step using a variety of sample documents such as invitation letters, bylaws, meeting agendas, certificates of recognition and event scripts. ■

Catherine Imperatore is research manager for ACTE. Email her at cimperatore@acteonline.org.

REFERENCES

Imperatore, C. & Hyslop, A. (2018). 2018 ACTE Quality CTE Program of Study Framework. Retrieved from <https://www.acteonline.org/wp-content/uploads/2018/10/HighQualityCTEFramework2018.pdf>.

EXPLORE MORE

Practitioners can use the *Quality CTE Program of Study Framework Self-evaluation instrument* to assess a single program or multiple programs across a district or institution, in relation to the 12 elements of high-quality CTE. The rubric can be completed on paper or online, where users can receive automatically calculated scores, save and print their results, and be connected to the High-quality CTE Tools online library for areas identified as needing improvement.

Learn more at www.acteonline.org/high-quality-cte-tools.



SEEKING SUCCESS STORIES FROM THE FIELD

By Caitlin Rose Dailey, Kevin Jordan, Ivan Charner & Steven Klein

WHEN WE SET OUT WITH COLLEAGUES FROM THE NATIONAL CENTER FOR INNOVATION IN CAREER

and Technical Education to visit community colleges with robust business partnerships, we were eager to explore the factors that made these partnerships successful. After conducting a thorough search of the literature and consulting with experts at the American Association of Community Colleges and the U.S. Department of Education's Office of Career, Technical and Adult Education, we identified nine community college career and technical education (CTE) programs in the high-demand sectors of health sciences, information technology and manufacturing.

At each of the colleges we visited, local employers were deeply engaged in designing, running and making decisions for tailored workforce training programs. We wanted to know how and why these partnerships had been able to collaborate so closely.

In selecting sites, we took care to identify community colleges in a range

of regions and settings — including rural, urban and suburban locales — to understand how geography and local economics might influence community college-business partnerships. When we visited the partnerships to collect information for case studies, we hoped to learn about what made each partnership unique. But just as importantly we wanted to find out what, if anything, these nine very different partnerships shared.

After interviewing administrators and faculty and their business liaisons, we were able to winnow down their many valuable lessons; these practical tips can help any college leader consider how they engage with local employers — and how they can do it better.

Building the Partnership

To develop lasting, effective partnerships, successful colleges lay a programmatic groundwork that supports employer engagement. Careful planning and collabora-

tion is needed to establish a mutually beneficial partnership that serves the needs of students, employers and the college.

Create an environment conducive to engaging businesses.

Colleges that successfully engage with businesses invest upfront in laying the groundwork. They secure buy-in from senior leaders at the college and research potential funding sources at national, state, regional and local levels to support business engagement, partnership development and program implementation.

Seek appropriate partners.

Successful college-business partnerships involve employers who have a footprint in the state, regional or local economy; have workforce needs that the college is equipped to meet; and are willing to engage in reciprocal strategies for program development and implementation and student support.

“Effective partnerships require leadership, innovation and investment from both college and business leaders.”

Design a robust and effective program that meets business needs.

Successful programs focus on identifying the types of knowledge and skills that employers expect of program graduates; they collaborate to validate the curriculum, assessments and certifications, and to determine the student supports needed to ensure participants complete their training and obtain employment.

Running the Partnership

Community college and business partners collaborate on an ongoing basis to ensure that programs serve all stakeholders. Operational considerations focus on maintaining relationships and using data to inform continuous improvement; representatives from both colleges and employers review and, where necessary, revise elements of the program to maintain a successful partnership.

Maintain ongoing communication among partners.

Successful partnerships establish communication structures to regularly work through challenges and make decisions together.

Consider industry needs in making decisions about recruiting.

Many programs involve business partners in student recruitment and selection. After all, who knows better what's needed in the field? Employers can bolster college recruitment efforts by appealing to students' career goals and supporting the engagement of nontraditional CTE students.

Update the program with new information from industry.

Successful college program adminis-

trators engage employers in ongoing, in-depth review and revision of program curricula and materials.

Establish pipelines into employment for students.

Community college-business partnerships can facilitate hiring by building relationships between students and potential employers through work-based learning opportunities, job fairs, mock interviewing, job shadowing and employer reviews of student projects. By interacting with employers, students can gain employability skills valued by the employer along with new technical skills.

Use data to improve.

Business partners appreciate seeing the results of their efforts. Collecting performance data can help the partners evaluate the effectiveness of their programs and adjust as needed.

Sustaining the Partnership

Once a partnership is operational, colleges and businesses must work together to ensure that programs are maintained over time. Initial funding used to start up a partnership can run out, especially in the case of one-time grants. College-business partnerships will need to search for additional funding opportunities and consider how to do more with less.

Establish priorities for sustaining.

College and business partners may need to ask themselves, their students, and their employees hard questions about how the program has been most useful. The partners can hold on to their more successful strategies if their resources dwindle.

Bring in new funders and allocate resources creatively.

Colleges and businesses may need to pursue additional funding avenues to maintain or expand their partnerships. Engaging business partners to help promote college programs is the best way to show other employers and funders that investing in the program is worthwhile.

It is not easy to build and maintain community college-business partnerships. Effective partnerships require leadership, innovation and investment from both college and business leaders. We're hopeful that college leaders can apply the lessons shared here to maximize the potential of their business partnerships. The hard work proves worth it when more CTE graduates are hired and more open positions are filled. ■

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PHOTO COURTESY OF SAMANTHA BRIGGS, DIRECTOR OF COMMUNICATIONS, WIDEFIELD SCHOOL DISTRICT 3.

The MiLL (Manufacturing Industry Learning Lab) National Training Center in Colorado Springs, CO.

A STRONG, PREPARED WORKFORCE

By Nicole Carter



Skilled trades programs are expanding in southern Colorado Springs, Colorado. To meet the need for a more equipped labor force, communities, local businesses and national industry companies have come together to partner and support the growing requirement for skilled trades workers. In the fall of 2015, Tim Kistler, superintendent of Peyton School District 23-JT (PSD), hired a former professional cabinetmaker named Dean Mattson to teach advanced woodworking manufacturing classes, which would become part of the Peyton woods manufacturing program.

It was shortly after Mattson was hired that Widefield School District 3 (WSD3) Superintendent Scott Campbell attended an open house to learn more about the woods manufacturing classes. Inspired, he sought to get his students involved; in the spring of 2016, Widefield sent 30 students to PSD to participate in the program and learn this unique skill. While the long commute wasn't ideal — 45 minutes by bus to the Peyton facility where classes were first held — student interest

grew and job opportunities became evident. Kistler, Mattson and Campbell felt encouraged to form an innovative partnership that would allow the program to expand in southern Colorado.

Addressing a Need

Colorado Springs, alone, is home to more than 200 manufacturing companies that specialize in, among other areas, woods, metals fabrication and copper tubs. According to a recent article from the National Association of Manufacturers (2018), “nearly 3.5 million manufacturing jobs will likely be needed” over the next decade “and 2 million are expected to go unfilled due to the skills gap.” Together in an effort to sustain and strengthen the Colorado economy based on the employment need, Widefield and Peyton School Districts entered into a shared financial partnership and purchased a 46,000-square-foot building, located south of the Colorado Springs airport, known now as the Manufacturing Industry Learning Lab (MiLL) National Training Center.

As he understood the enormity of the physical space that would be available,

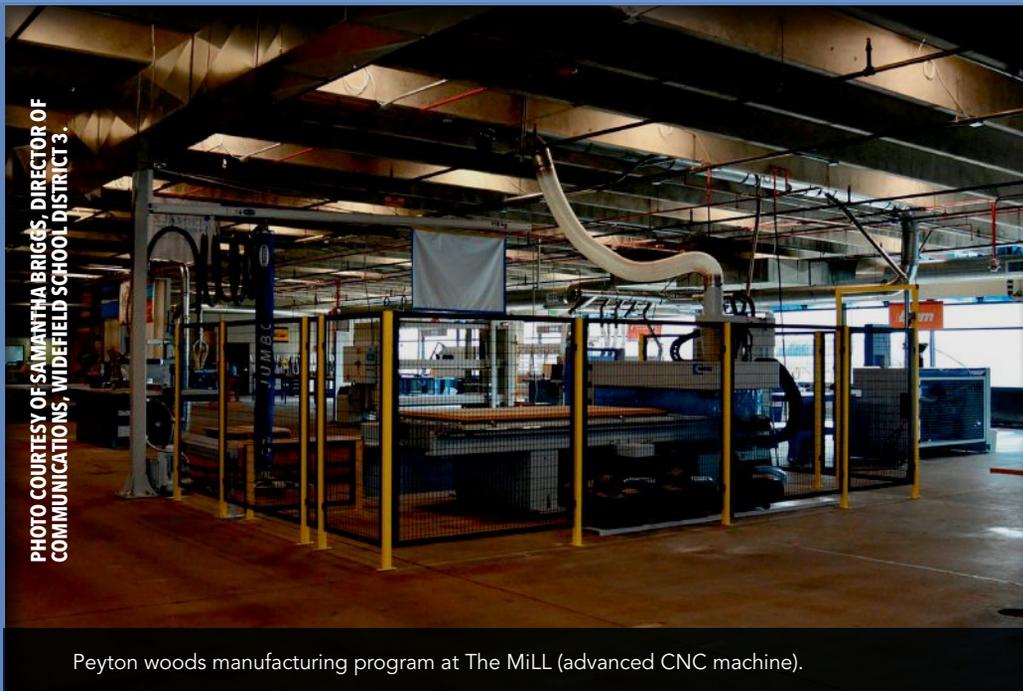


PHOTO COURTESY OF SAMANTHA BRIGGS, DIRECTOR OF COMMUNICATIONS, WIDEFIELD SCHOOL DISTRICT 3.

Peyton woods manufacturing program at The MiLL (advanced CNC machine).

Campbell re-established Widefield's construction technology program after identifying the potential growth in the construction industry. The original district program ceased operations approximately five years ago due to lack of student interest and the availability to hire instructors with construction knowledge. The Colorado Department of Labor and Employment (2018) projects a local need for an additional 53,000 construction workers within the next 10 years to support the growing residential building industry; given this need it made sense to use a portion of the MiLL to restart the program and allow students to learn a trade that could benefit them right in their own neighborhood.

Operating fully now and housing two extensive skilled trades programs (Peyton woods manufacturing and Widefield's construction technology), the districts share basic facility expenses at the MiLL, including maintenance and utilities. The unique nature of the establishment, due to the districts' shared financial operations, led stakeholders to realize that a separate school board would need to be formed, with decision-making authority, to best serve the MiLL and its students. Kistler and Campbell approached both school boards for permission to form a separate board and the districts voted unanimously to move forward. Currently,

the group is comprised of four members (two from each district), appointed by their respective school boards, to help make large decisions that impact the MiLL as a whole.

The innovative strategies in place at the MiLL relationship have drawn the attention of significant leaders throughout the state. Various local business and industry associates, including Colorado Springs Mayor John Suthers and State Representative Paul Lundeen, have shown their commitment to the skilled trades industry by attending open houses at the MiLL over the past several months.

"This is exactly what needs to happen in America at this point in time. It's exactly what needs to happen in our community to develop a workforce that's going to meet employment needs," commented Mayor Suthers at the MiLL open house in October 2016.

Overall, the ultimate goal of the partnership is to promote a stronger and more consistent workforce in Colorado by expanding pathways for learners and offering opportunities for students to become efficient in a chosen trade.

To Educate the Workforce

The Peyton woods manufacturing program, housed at the MiLL, has grown to include more than \$2 million in contributed equipment from some of the industry's

most significant names such as Stiles, TigerStop and Triton Tools. Altogether, the woods program has more than 40 inclusive partners dedicated to helping youth learn exclusive skills that will allow them to transition more successfully into the workforce. Students are fortunate to get hands-on experience using state-of-the-art manufacturing equipment and computer numerical control (CNC) machines. Peyton offers several levels of coursework to include "Cabinetmaking I" – "Cabinetmaking VIII" with the most advanced courses using precision software and advanced machining tools to design several cabinet components or chair pieces at once for efficiency. The students, who have found a purpose and passion for the manufacturing industry, now have the opportunity to enter into internships with local businesses where they apply their classroom skills into the field.

Students who complete two years of the Peyton Woods program earn an industry certification, the Woodworking Career Alliance Passport (WCA Passport), which indicates how the students have met and mastered the safe and appropriate use of different industry machines. Students who complete this project can earn more than a half-dozen additional certifications for their passport, including but not limited to:

- Dovetail machine
- Portable track saw

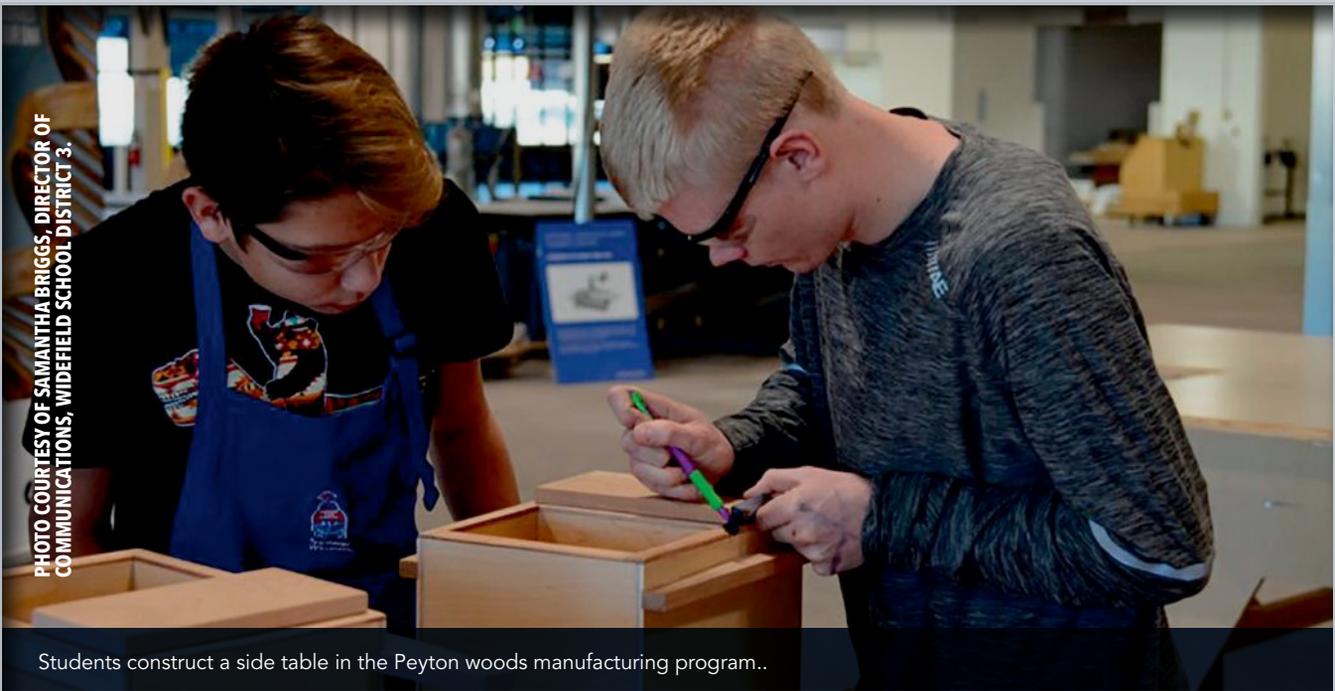


PHOTO COURTESY OF SAMANTHA BRIGGS, DIRECTOR OF COMMUNICATIONS, WIDEFIELD SCHOOL DISTRICT 3.

Students construct a side table in the Peyton woods manufacturing program..

“With the support of companies who understand the manufacturing and construction industries, the MiLL continues to expand opportunities.”

- Veneer saw
- Table saw
- Table router
- Plunge router
- Biscuit joiner
- Veneer press

Business support has increased as companies see value in the students being able to work almost immediately upon leaving the classroom because of the high-level training they receive. More involvement is expected as another industry partner intends to donate more than \$200,000 in equipment to the MiLL for paint booths and other technology that will allow students to fulfill a project from the beginning woodworking stages to final completion.

Widefield School District 3 has partnered with the Colorado Springs Housing and Building Association (HBA) to use the Home Builders Institute (HBI)

curriculum, which focuses on pre-apprenticeship certificate training, for their construction program. During the first year the curriculum emphasizes building trades safety, construction math, tools and construction materials, employability and green building before students go on, in subsequent years, to develop knowledge and skills in electrical and plumbing trades, masonry, landscaping and painting. The support of the local HBA is an important element in the success of the construction program.

The HBA invites construction teachers from the area to monthly meetings where the instructors can share best practices that will benefit student learning and receive updates on job initiatives in the city. Students are offered opportunities to take fields trips and observe many of their learned skills in action at residential home building sites. The dedication from these organizations to support local school dis-

tricts is a direct result of the need to fill vacancies in their industry and, ultimately, in their own companies.

Community support has been extremely encouraging; speaking of the MiLL, Rep. Lundeen, of the Colorado House of Representatives, had this to say, “The project is not only a national example of innovative cooperation between educators and industry, but also a critical step forward in providing greater opportunities for our students and toward building a more powerful Colorado workforce.”

Opportunities for Partnership Growth

The programs are growing at a rapid pace and enrollment has nearly doubled. Peyton has more than 100 students and Widefield increased their numbers to a current enrollment of 70 in the 2018–19 school year, with successes due, in large part, to the hard work and support demonstrated by Peyton and Widefield districts since



PHOTO COURTESY OF SAMANTHA BRIGGS, DIRECTOR OF COMMUNICATIONS, WIDEFIELD SCHOOL DISTRICT 3.

Students in the construction technology program at Widefield are prepared to test for their pre-apprenticeship certificate by demonstrating various skills throughout the school year.

the beginning. Because the MiLL is located several miles from the districts' traditional high schools, counselors and teachers coordinate yearly field trips prior to course scheduling for grades nine through 11 and also include the middle schools, so rising freshmen are exposed to the unique opportunities available to them. These site visits help students to gain a better sense of what a career in the skilled trades looks like. For the students who enjoy hands-on tasks, this is the place to be.

In the fall of 2018, the MiLL began offering the opportunity for students to earn college credit on site through the support of local community colleges. Eventually, the vision is for the training center to offer classes to working adults who wish to develop new skills. These training sessions will take place in the evening or on weekends so individuals can attend while maintaining their routine work schedule. The variety of coursework offered outside the traditional school schedule will expand options for any individual seeking a new career opportunity.

With the support of companies who understand the manufacturing and construction industries, and believe in transferable skills to help students be successful, the MiLL continues to expand opportunities. For success and future growth, each district su-

perintendent put aside their individual self-image and ego to concentrate on the overall goal: to offer a highly advanced training facility that would equip students with skills to support the local economy. A superintendent is placed in a position of leadership, often, due to their ability to delegate, solve complex problems and effectively collaborate; at the MiLL, each leader must leverage these characteristics in the name of a another district to achieve the desired outcomes for both.

It might be easy to boast about the MiLL as a personal accomplishment but it is through egoless leadership that the MiLL is enabled to strive for its goals of helping provide opportunities for students and developing community relationships. The MiLL's innovative approach to learning will benefit the workforce as students graduate and explore chosen career fields. Instructors in both programs teach curricula that allow for real-life practice so students gain a sense of accomplishment and success; additionally, inviting industry partners to teach various units allows students to gain knowledge from those actually working in the field and who can vouch for the lifestyle and career opportunities offered.

While the programs continue to grow in numbers, they will not, alone, fulfill

the need for a skilled workforce, nor will they meet the large gaps that exist in demand. They will, however, give students options. More importantly, the MiLL National Training Center has afforded all participants an opportunity to be involved and make a positive impact within the community, local workforce, industry partnerships and, most of all, the students who find value and purpose in their learning. ■

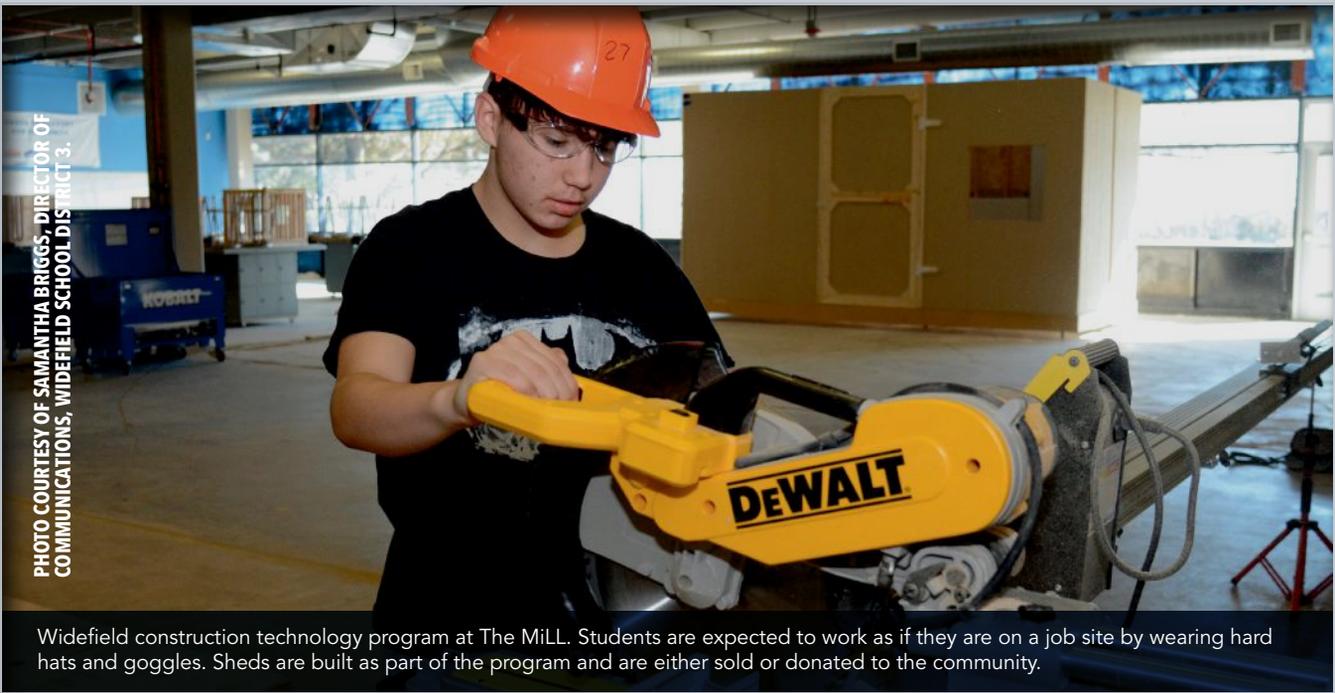
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PHOTO COURTESY OF SAMANTHA BRIGGS, DIRECTOR OF COMMUNICATIONS, WIDEFIELD SCHOOL DISTRICT 3.



Widefield construction technology program at The MiLL. Students are expected to work as if they are on a job site by wearing hard hats and goggles. Sheds are built as part of the program and are either sold or donated to the community.

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A LOST ART OF **ADVISORY COMMITTEES**

By Clyde Hornberger & John Foster



advisory committees are composed of experts in technical fields who are able to supplement the work of a given organization. Usually, the informal nature of these committees allows them to be a bit more flexible regarding the suggestions and strategies they provide. In the case of career and technical education (CTE), advisory committees provide a vital link to business and industry — a link that provides an essential communication mechanism. Successful school districts, career and technical schools, and colleges utilize a two-tiered business and industry advisory structure, with a school or institutional tier for strategic visioning and long-term planning (Foster, Foster, Hornberger, & McNally, 2015). This top or executive level tier is often referred to as a local advisory committee (LAC) or an executive council on CTE (Pennsylvania Department of Education, 2018). Its membership is composed of business and community leaders, secondary and postsecondary education, government, organized labor, community, and economic and workforce development organizations. This group focuses on visioning and guiding the institution on issues such as legislation, funding and future CTE programming. The LAC typically meets twice each year or more frequently, depending on the CTE needs of the school and community.

The second tier is generally known as the occupational advisory committee (OAC). OACs have been a vital component of CTE since the early days of vocational education, and are mentioned in legislation (Foster, Hornberger, & Watkins, 2017). Business and industry advisory committees add value and relevance to individual CTE programs through advice from subject matter experts. The CTE teacher and their students receive support and a direct benefit from the advice of OAC members.

A LOST ART OF ADVISORY COMMITTEES

Unfortunately, the implementation of advisory committees has become routine for many institutions and teachers and, as a result, the maximum benefit of the advisory committee may not be fully realized.

While the following story is fictional, it is representative of the types of inefficiencies we've encountered in our work with CTE programs across the country. See if you can spot potential issues as you read through our tale.

A new school year began & the committees prepared to meet.

The director of the Hometown Career & Technology Center (HCTC) announced the dates for the fall LAC and OAC meetings. The administrative team is busy preparing detailed progress reports on Perkins performance measures, state and HCTC goals, and performance indicators for the LAC breakfast meeting on Oct. 19. The information will be shared with teachers so they can address the school, program and student performance indicators with their OACs.

The LAC agenda is sent one month prior and the reports will be presented by the administrative team during the first part of the meeting. The fall OAC program meetings will begin with dinner on Oct. 29. Teachers and administrators prepare agendas for the OAC meetings, which include curriculum, instructional equipment and facility needs, student placement, and end-of-program assessment data. Of course, both the LAC and OAC agendas include attendance, approval of the minutes from the previous meeting, and any "old business and new business," as would be common with a public agenda using tax dollars.

In preparation for the OAC meetings, CTE teachers send a reminder to the committee members and a call is placed to new members to make sure they are planning to attend. They are also made aware

that dinner will be held in the cafeteria and the HCTC director will address the combined OAC membership, informing them about HCTC progress, goals and student achievement.

The October LAC breakfast meeting went very well, but attendance was lower than expected. The administrative team did an excellent job providing detailed reports and updates. The LAC members in attendance were pleased with the school goals and achievements reflected in the performance reports.

The OAC meeting hosted more than 100 OAC members for dinner and the director's remarks and update. Dinner started on time at 6:00 p.m. and remarks ended at 7:20 p.m. After a short break, the OAC members moved to their individual CTE program classrooms/labs to conduct their meetings. The individual program meetings began with introductions, and attendance was accurately recorded. Teachers responded to questions about the director's update and then provided an update on their individual programs. Teachers also discussed their needs regarding curriculum and instructional equipment and facility concerns, followed by a recap of the program accreditation, industry certifications, student placement and achievement.

The OAC members emphasized their need for additional skilled graduates. The opportunities to involve students in cooperative education placements were also discussed. The program equipment was reviewed and recommendations were provided. The CTE teachers recorded the minutes of the meeting and thanked everyone for attending. A reminder of the date for the spring meeting was provided.

Progress and Challenges

The HCTC director reviewed the minutes of the LAC and OAC meetings. He

was disappointed in the attendance of the LAC and noted that, even though the school had added three new CTE programs over the past five years, overall attendance was less than it had been 10 years ago. The director decided to conduct an anonymous survey seeking feedback from current and previous LAC and OAC members. Though the state requires that CTE directors survey advisory committee members concerning the committees' effectiveness, the school had not surveyed members during his tenure; he believed the 13-question, state-provided survey required too much time for busy members to complete.

He prepared a brief survey and sent it to members with a short explanation of the purpose, asking them to provide feedback on the meeting's effectiveness and requesting suggestions regarding how to improve the meeting and maximize the time and expertise of the members. He asked the following five questions, and provided an additional opportunity for comments or suggestions:

- Is the role of the committee clearly defined?
- Do meeting agendas reflect the purpose of the committee and role of its members?
- Are committee recommendations considered and a response provided in a timely manner?
- Is your time and expertise valued by the committee and institution?
- How do you rate the effectiveness of the committee?

When the responses were returned, the director was surprised but pleased by the honesty of the feedback. He was surprised that LAC members were very critical of the LAC meetings. The members indicated the reports should be mailed in

advance and administrators should only respond to questions from the committee about the reports. The members indicated their time and expertise were not fully valued due to the content and length of the meeting. Though the meeting was chaired by a business leader, feedback indicated that LAC members felt the administration dominated the meeting. In summary, the suggestions for improvement included “Send reports in advance.” and “Talk less; listen more.” The business and community leaders value the school and its role in education and workforce development, but they care less about the detailed mandatory reports that were discussed.

Results from the OAC member surveys had a similar theme. The members believed the information provided in the general session during dinner should have been mailed in advance with less time spent on those reports. The individual OAC meetings garnered similar feedback: too much detail about reports and not enough time for members to provide input on programs and industry trends and needs.

The members indicated that, while the teacher is their primary supplier of new employees and the students and graduates are an asset to their company, the meetings should not be dominated by the school or teacher. The meetings should be about advice, and not reports. Additionally, business and industry members expressed a concern over the number of

“The fictional scenario presented highlights great opportunities for learning.”

salespersons and vendors in attendance. They felt their presence created a direct conflict and placed undue influence on equipment procurement decisions. Finally, the OAC members expressed their concern for unresolved issues that are the same every year, and the members would like an HCTC administrator present during the meetings to respond to questions. Holding a large dinner meeting on one evening for 25 or more CTE program OACs makes it difficult for school administrators to attend every OAC meeting.

What are your thoughts?

The fictional scenario presented highlights great opportunities for learning. Certainly, there are key practices that can be improved. CTE educational entities have been conducting advisory committee meetings for over 50 years and they can become routine if not given the priority or attention to detail they deserve. Remember that these committees are a school’s primary connection to business and industry, and they provide a great opportunity for engagement and support! Fortunately, the advisory committees can easily be improved, with a few simple adjustments that can be accomplished at little or no cost.

NOCTI and ACTE have publications available that provide detailed information on OACs. From Chapter 9 in *Your First Year in CTE: 10 More Things to Know* (2015), and Chapter 4 in the first book in the administrator series, *CTE Administrative Leadership: 10 Things to Know in Your First Year* (2017), the authors provide helpful tips on establishing high-quality OACs and ways to ensure they are effective throughout the school year. It is critical to define effective best practices before establishing and conducting advisory committee meetings. We’ve assembled a few important attributes below.

Committee Membership

Organizing an OAC begins with identifying its membership. Every CTE program should have an OAC composed of subject matter experts that are currently employed in the occupation. While it is not uncommon for teachers to ask fellow teachers to serve on an OAC, this practice adds educators and not business and industry members to the committee. Teachers from other schools frequently talk about their school issues, which can cause confusion among your OAC members and generally detract from the specific agenda. Vendors and/or salespersons may be concerned about the CTE program, but it is a clear conflict of interest having them present and/or recommending equipment they sell. The practice should be forbidden by school policy. That’s not to say that OAC members shouldn’t be involved with vendor presentations, as inviting competing vendors to demonstrate their products to OAC members is different than vendors actually serving on a com-

“It is critical to define effective best practices before establishing and conducting advisory committee meetings.”

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mittee. This common practice should be a red flag for teachers and administrators who need to be aware of the potential for a conflict of interest, particularly if equipment is purchased from a vendor serving as an OAC member.

There are instances individuals not currently employed in the occupation, such as parents, students, counselors, and/or community members participate in OAC activities. It is important that these individuals be considered as supplemental and non-voting members. The role of non-voting members should be defined in the OAC policies and procedures. It should be noted that non-voting members should not be included in the count when confirming a sufficient quorum is present for a meeting. If there is not a quorum of subject matter experts from business and industry present (less than five or six subject matter experts per program area) the meeting should be rescheduled.

The Teacher's Role

The CTE teacher's role is to coordinate the meeting logistics, serve as a resource, and to provide the educator's perspective on OAC concerns and recommendations. Teachers should not serve as officers on the OAC. The CTE teacher should make educational decisions on how content and skills are taught, but the curriculum, or what is taught, and the instructional equipment recommendations must come from the subject matter experts on the OAC.

The Purpose of the OAC

It may appear confusing to some teachers and OAC members, but it must be understood that the OAC is "advisory" and not a governing body. It is essential that everyone involved with OAC activities is clear on their role. When an OAC is properly organized with rules and guidelines defining the duties and responsibilities of

the OAC and its membership, there should be no conflict or confusion. Both CTE teachers and OAC members should have written rules and guidelines regarding the conduct of the OAC meeting and the value of its recommendations.

Engaging OAC Members

Assuring OAC members are actively involved in school improvement discussions, tracking student achievement, and acknowledging student awards and recognition are also key engagement strategies. This engagement provides benefits for OAC members, teachers, students, and administrators as it strengthens the tie between OAC members and the program. Other strategies for engagement include instruction on the use of data, particularly third-party-generated competency data (from credentialing bodies). OAC review of data and the subsequent discussions can identify the need for shifts in instruction, curriculum updates, or additional work stations or equipment. Engaging OAC members in performance testing, especially those that take place at a member's facility, also increases buy-in to the teaching process and provides a unique perspective on individual student competence.

Other successful OAC and employer engagement strategies include scheduling at least one meeting each year at an OAC member's place of business, or having the CTE teacher and an OAC member(s) attend a trade or labor organization meeting. These meetings may provide a great opportunity to add CTE-related topics to their agenda or to speak about the school and his or her program.

CTE educators most often enjoy a special relationship with business and industry, but that is only achieved by developing and nurturing employer engagement. It happens because there is a mutual inter-

est among CTE educators and business leaders that is based on creating a highly skilled workforce. There is no better way to engage your local business committee than to develop strong, committed, innovative OACs. The time and energy it takes to achieve a successful OAC program is well worth the effort. ■

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Giving Back from **SPACE:**

Astronaut Alumnus Partners with
School to Engage Students in CTE

By Judy Bass



PHOTO CREDIT: JUDY BASS

T

he wintry morning of Feb. 13, 2018, was anything but typical for the staff and students of Blue Hills Regional Technical School in Canton, Massachusetts. They were excited; the student population — of approximately 840, drawn from nine suburban communities south of Boston — was about to experience something truly extraordinary.

Students in grades nine through 12 streamed into the cafeteria, set up with rows of chairs and a large pull-down video screen, and the adjacent gymnasium, where three 70-inch television monitors were set up to contain overflow. A reporter from WCVB-TV, Boston's ABC network affiliate, arrived with her cameraman as distinguished guests filed in; state legislators, Blue Hills Regional District School Committee members and officials representing career and technical education (CTE) throughout the Bay State took their seats.

Colorful posters created by Blue Hills design and visual communications teacher Joann Murphy bore the school's logo, the NASA logo, and a photo of one of the school's most illustrious graduates: NASA Astronaut Scott D. Tingle, class of 1983, below the triumphant slogan, "Celebrating the Journey!"



Excitement builds as students at Blue Hills Regional Technical School in Canton, Massachusetts, await NASA astronaut Scott Tingle's appearance on-screen in real time from aboard the International Space Station.

Giving Back from SPACE:

Astronaut Alumnus Partners with
School to Engage Students in CTE



NASA astronaut Scott Tingle aboard the International Space Station with a replica of the ISS made on a 3D printer by Blue Hills engineering student Christopher Bullock. It bears the inscription, "Blue Hills Regional Tech, Scott Tingle, Class of 1983." Tingle is wearing a Blue Hills t-shirt.

Celebrate the journey.

It was indeed a time to celebrate, as well as a time to learn, observe and vicariously experience the thrill of space exploration thanks to Tingle, now 53, who spoke with and responded to questions from students about his mission aboard the International Space Station (ISS). What made this session especially remarkable was the fact that Tingle was conducting it in real time from the ISS as it orbited 240 miles above the Earth at a speed of 17,150 miles per hour. (Tingle, whose hometown is Randolph, Massachusetts, could hear but not see the people at Blue Hills; the students saw and heard him as clearly as if he were in the next room.)

Tingle, along with Russian Commander Anton Shkaplerov of Roscosmos and fellow flight engineer Norishige Kanai of Japan's Aerospace Exploration Agency, lifted off almost two months earlier aboard the Soyuz MS-07 spacecraft, which launched from Kazakhstan's Baikonur Cosmodrome for a two-day flight to the ISS. The three men joined three other astronauts — Alexander Misurkin of Roscosmos, plus Mark Vande Hei and Joe Acaba of NASA — who were already on board. Completing some 200–250 experiments, many of which involved the effect of microgravity on plants and the human body, was a top item on the crew's agenda.

The occasion with Blue Hills was one of dozens of "down-links" — the technical term for the transmission from a spacecraft to Earth — held between the ISS and schools nationwide,

for students and educators at every grade level to ask probing questions galore about their experiences in space during NASA's "Year of Education on Station."

For Tingle, it was yet another way to give back to the school that gave him a foundation and the skills necessary to pursue a career in space exploration. At Blue Hills Regional Technical School he studied machine drafting under teachers Paul Dumas and William Cahill, where he developed a flair for discovering how things operate and liked to pore over the intricate way they are assembled.

He's been back before. Tingle's video visit from space wasn't the first time since he graduated; he was the keynote speaker at the school's commencement in 2012 and, when he was informed that he would be going up on the ISS, Tingle asked Blue Hills for a lightweight memento to take with him. For this, Superintendent-Director James P. Quaglia had an idea to 3D print a miniature replica of the ISS emblazoned with the words "Blue Hills Regional Tech, Scott Tingle, Class of 1983." Christopher Bullock, a student in engineering, created the replica. Two students from the school's construction program, Jill Yurewicz and Robert Devine, then crafted a wooden box for the model with the letters "N-A-S-A" carved into the lid in a futuristic font. Tingle did in fact take the replica with him and displayed it during his space chat with Blue Hills.

"[Attending Blue Hills turned] out to be one of the best decisions I've ever made," Tingle said in a podcast recorded for NASA (2017). "By the time I was in 11th grade, I was already working part time as a machine draftsman. And then, in my senior year, because I had excelled on a lot of the program requirements, instead of going to school on my shop weeks, I would go to work. And so I saved up enough money to get me through my first year of college. I never would have gone to college had I not had that opportunity."

After high school, Tingle attended Southeastern Massachusetts University (now the University of Massachusetts Dartmouth) to earn a Bachelor of Science in mechanical engineering, in 1987, and then a Master of Science in the same field from Purdue University the following year. Commissioned as a naval officer in 1991, Tingle is a captain in the U.S. Navy and a decorated pilot.

His ultimate achievement came in 2009, however, when he was chosen for the highly selective Astronaut Training Program at NASA. This was the culmination of a long-sought dream for Tingle, who declared to his mother that he wanted to be an astronaut after marveling at the moon landing on July 20, 1969

— a historic milestone that occurred just one day after Tingle’s fourth birthday.

Leverage the power of community.

The connection with Tingle in space, a headline-making first for the 52-year-old school, was a milestone in itself and one that required months of intensive planning and brainstorming. A team was formed, led by Quaglia, who is the immediate past president of the Massachusetts Association of Vocational Administrators (MAVA), and Blue Hills Principal Jill Rossetti.

Among the participants were the school’s two information technology staff members, IT Manager Michael Schantz and Technician Matthew Eisan; Academic Director Geoffrey Zini; Vocational Director Michelle Sylvia; and others who met frequently to vet scores of questions submitted by students for Tingle and plan the logistics of the event. The most challenging aspect involved navigating complex technical arrangements between the school and the Johnson Space Center in Houston, Texas, so all would proceed smoothly. If things went awry for any reason, the resulting educational opportunity would be lost.

Happily, though, Blue Hills’ visit with Tingle was a resounding success. First, he wanted the students to put themselves in his place, when he was a teen just like them who yearned with all his being to soar. “Picture yourself flying,” he said. “Then imagine you grow up and you realize you really can fly!”

In a few brief moments, he had captured them totally. The students were riveted as Tingle, characteristically articulate and upbeat, patiently responded to each question in detail. Questions asked by Blue Hills students ran the gamut:

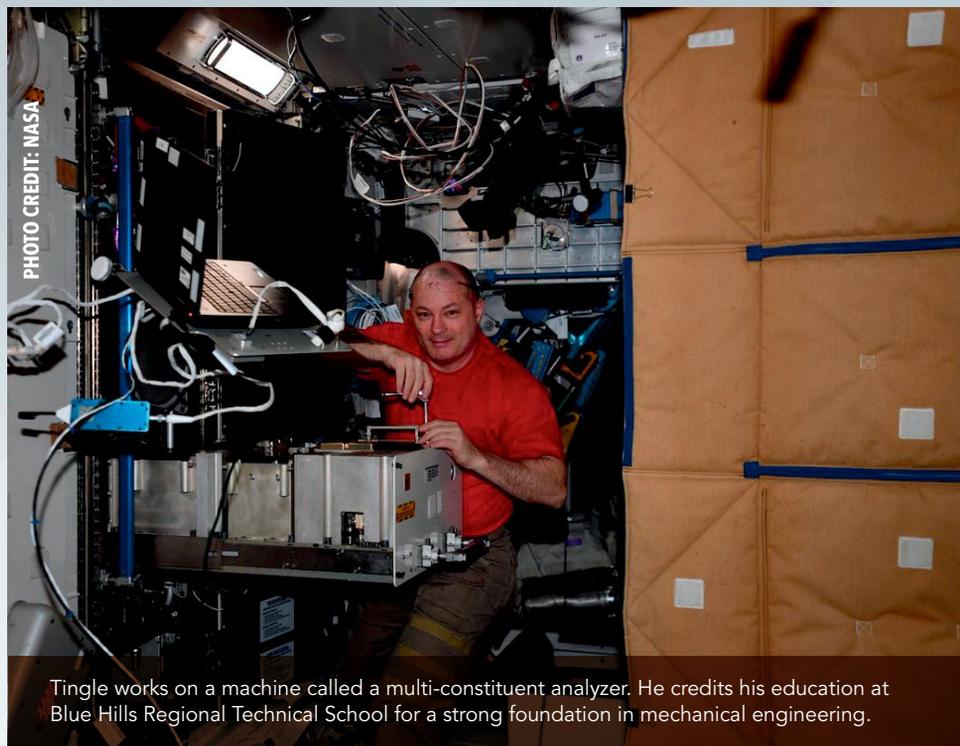
- How do you shave your face in an environment with no gravity? (He used a small electric razor near a vent.)
- What does it feel like to be in space? (“The view of our beautiful Earth is amazing,” Tingle said, adding that he could witness 16 magnificent sunrises a day as the ISS zoomed its way through the heavens.)

- How does the cuisine taste up there? (Tingle was enthusiastic; the dishes he ate, such as lasagna and beef ravioli, were rehydratable and “not bad”)
- Do you think NASA will someday go to MARS? (Read his answer in the box on page 33.)

The event concluded with a burst of sincere appreciation from Tingle, as well as a heartfelt exhortation: “Thank you for inspiring me! Don’t forget to dream big!”

The salient, overarching point Tingle made to the young people who heard and watched him at Blue Hills that day — not only with his words but simply by his presence as a respected member of one of the most elite professions anywhere — was about the lasting usefulness of what he learned at their school over three decades ago.

Lauding the education he received as “great technical and academic training combined with hands-on skills,” Tingle stated that the four years he spent at his beloved high school were an all-around “great opportunity that was really valuable in my career.”



Tingle works on a machine called a multi-constituent analyzer. He credits his education at Blue Hills Regional Technical School for a strong foundation in mechanical engineering.

Giving Back from SPACE:

Astronaut Alumnus Partners with
School to Engage Students in CTE

Several weeks after his return from space, Tingle reaffirmed that message. “It meant everything,” he noted of his Blue Hills background. “It put the importance of what I was doing in perspective. To me, the downlinks were about reaching out and communicating with students and teachers and letting the world know how important education is to space travel.”

“I had this goal [of becoming an astronaut],” he continued. “I wanted to make it happen. It was important for me to come back and speak to the people who helped me to achieve it. It was really humbling and just a joy to be able to do that. I did something very hard and challenging and showed the rest of the world they can do it, too.”

For Quaglia, the purpose of having the Blue Hills students see Tingle at work in space, in the habitat he loves, was three-fold: practical, motivational and esoteric. After all, here was someone of exalted stature in his profession who once walked

down the hallways they now walk in, who sat in the very same classrooms they presently occupy. “I wanted to provide a forum where students could see a high-level connection between technical education and its application,” Quaglia said. “It was one of those things that was destined to happen. Tingle was eager to do it; we were eager to do it.”

Harkening back to his own childhood when he was mesmerized by the sight of space flights launching on television, he continued, “Those were the things that made you want to dream. People still have a desire to explore. There are still barriers to be broken and technical developments to be made. You still have to have a goal.”

Observing that everyone who graduates from Blue Hills embodies their own particular success story, Quaglia called Tingle “an iconic representation of technical education.” Interacting with him on the ISS was “another expression of what we do at Blue Hills,” he said. “We didn’t talk about Tingle after he landed. We showed him to the students while he was in space” to make the experience so much more meaningful, vivid and real.

As for Quaglia’s personal reaction to Tingle’s downlink with Blue Hills, he said, “This was a highlight of my educational career. It was unique, special — and it will never happen again in my life.”

Tingle was a powerful source of inspiration for Blue Hills senior Marilee Rodriguez and her classmates. “My most memorable moment at Blue Hills,” said Rodriguez, “was when we got to see Scott Tingle in space. He dreamed big and he didn’t give up. He succeeded and was able to become an astronaut. Knowing that Blue Hills helped along the way gives me hope for the future.”

Judy Bass is the communications specialist for Blue Hills Regional Technical School as well as Minuteman High School in Lexington, Massachusetts. Email her at jbass@bluehills.org.

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PHOTO CREDIT: NASA

NASA astronaut Scott Tingle beams, back on Earth after 168 days in space on his first mission for NASA. He and his crew mates landed in Kazakhstan on June 3, 2018.

Journey to the Red Planet

"I do believe it's realistic that we could be going to Mars someday. It's going to take a lot of work and a few strong international partnerships," Tingle answered each student's question thoughtfully. He explained how it would take nine to 12 months to travel to Mars, to spend two on the surface of the red planet, and 9 to 12 months to get back.

Paraphrasing the famous words astronaut Neil Armstrong spoke when he landed on the moon, Tingle said of a journey to Mars, "It would be a large, large step for mankind." Asked if he would consider going to Mars if doing so were possible, he said, "I would do it in a heartbeat. Hopefully, some people from your school will be on that mission [to Mars]."

Lift Off!

ACTE and NASA HUNCH have teamed up on an exciting contest opportunity for CTE students working out of this world. Learn more in Inside ACTE on page 56.



PHOTO CREDIT: JUDY BASS

NASA astronaut and Blue Hills Regional graduate Scott Tingle with Blue Hills Regional Principal Jill Rossetti at Blue Hills Regional Technical School on November 13, 2018 - exactly nine months to the day after Tingle communicated with the students from space in real time while he was aboard the International Space Station (ISS). On November 13, Tingle spoke to the students about his six-month space mission — his first for NASA — answered their questions, and brought back the replica of the ISS that was made for him by a Blue Hills Regional student, along with a handsome wooden box for it, also made by Blue Hills Regional students, which Tingle had taken with him in space. His signature can be seen written on the underside of the box's lid.

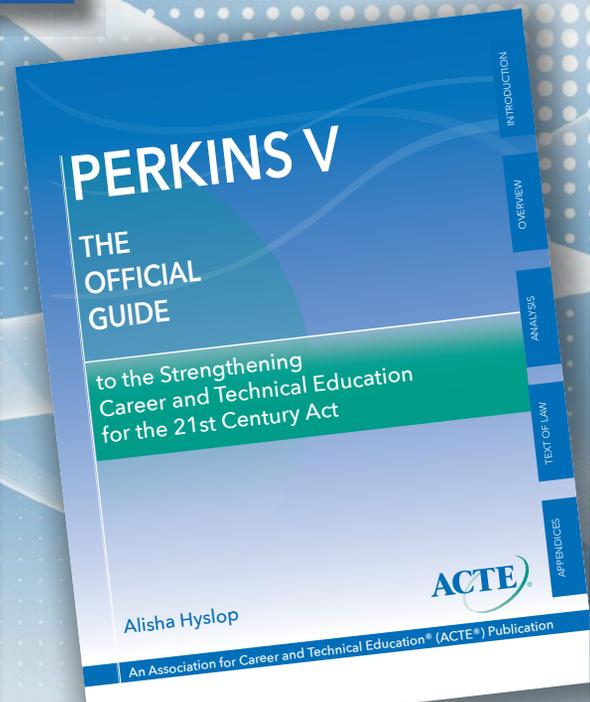
YOUR INDISPENSABLE GUIDE TO PERKINS V



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- Highlights of changes that will have the greatest impact on your programs
- A complete side-by-side comparison showing key differences between Perkins IV and Perkins V
- Section-by-section summary and analysis of Perkins V
- Summary and relevant sections of other federal legislation referenced within Perkins V for clear crosswalking, including the Workforce Innovation and Opportunity Act (WIOA) and Every Student Succeeds Act (ESSA)
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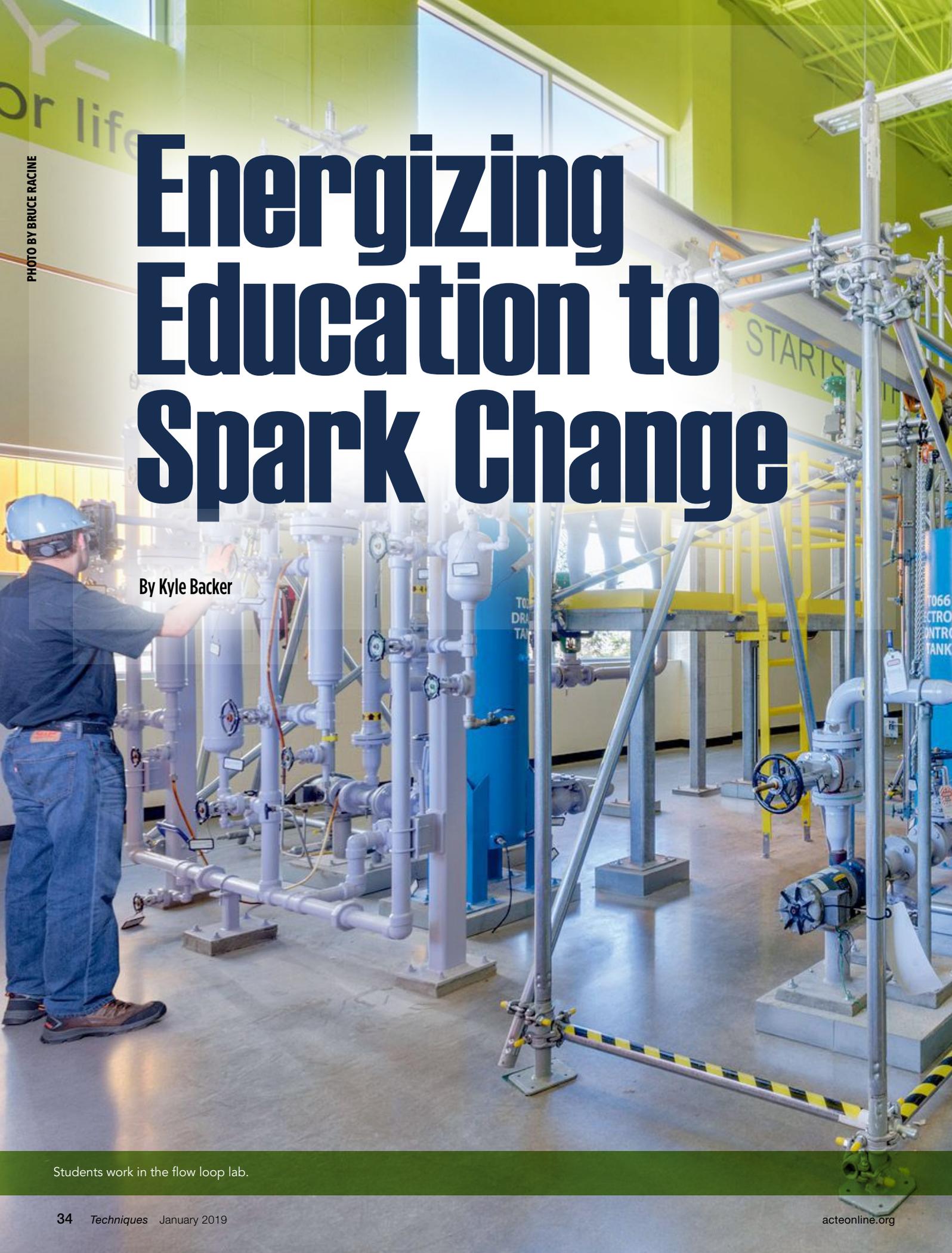


PHOTO BY BRUCE RACINE

Energizing Education to Spark Change

By Kyle Backer

Students work in the flow loop lab.



In the desert landscape 50 miles west of Phoenix, Arizona, three concrete domes sit south of Interstate 10. A fortified compound surrounds the structures, complete with razor wire and security checkpoints. Columns of vapor stretch to the sky during the mild Phoenix winters.

“People think it’s smoke, but it’s just water vapor,” noted James Hettel, human resources manager for Arizona Public Service (APS). “There are all sorts of misconceptions about generating facilities.”

The Palo Verde Generating Station is the nation’s largest power producer, supplying Arizona with 70 percent of its clean-air energy (“generation,” 2018). Truly a marvel of engineering, Palo Verde remains the nation’s only nuclear facility not located on a body of water. Instead, it recycles wastewater from the ever-growing metropolitan Phoenix area. Despite the proximity to America’s fifth largest city, Palo Verde is experiencing a shifting workforce demographic. According to the Nuclear Energy Institute (NEI) (n.d.), almost 40 percent of the nuclear energy workforce is able to retire in the next few years; yet, retirement isn’t the only cause of change in the energy industry.

“Lots of baby boomers are retiring, sure, but we also want to diversify our staff,” said Hettel. “In the past, many of our employees had a military or college background. We want to build a team of new thinkers, and that means reaching out to communities historically underrepresented at Palo Verde.”

A Faster Way Forward

In 2002, something novel happened in the Phoenix metropolitan area known as the West Valley: A new school district formed. Western Maricopa Education Center, commonly referred to as West-MEC, sprang into existence as the second career and technical education district (CTED) in Arizona, after legislation allowing for their formation passed a decade earlier. Unlike a traditional school district, a CTED focuses solely on the advancement of career and technical education (CTE). Communities vote to be a part of a CTED like West-MEC, and their school districts receive additional CTE program funding from their membership.

The West Valley continued to grow and so did the need for a skilled workforce. In 2012, West-MEC opened its first campus in Glendale. By 2017, four campuses dotted the 3,685-square-mile district. Any student living within boundaries is eligible for a West-MEC program, even if they don't attend their local high school.

All programs have advisory councils where business and industry experts help improve the quality of teaching and learning. These councils have three main functions. First, members of the council assess the program and highlight places where improvements can be made, whether they be modifications to curriculum or equipment recommendations. Second, instructors work directly with the advisory council to set up scholarship programs and internship opportunities. Additionally, advisory councils promote CTE in their industry and community.

"Advisory councils are the lifeblood of our communities. They help us look forward as we plan and process programs," said West-MEC Career Specialist Rahsaan Bartet.

A Disconnect

Before orange West-MEC campuses started popping up in north and west Phoenix, Palo Verde was still focused on training their staff and supporting a pipeline into the energy industry. A local college, Estrella Mountain Community College (EMCC), decided to partner with Palo Verde on a power plant program.

The college applied for and received federal grant dollars to build a Nuclear Energy Institute program. The NEI aims to develop the future nuclear workforce by training them to receive the National Academy for Nuclear Training Certificate.

"We worked with Palo Verde to create a program that would allow their employees and anyone interested in working in energy to get an associate in applied science degree," said Joanne Kingman, director of workforce development and community

partnerships for EMCC. "It works hand in hand with Palo Verde's internship program."

The Palo Verde internship program is an intense, year-long commitment, during which interns work full time at the generating facility during the day and then take classes at EMCC in the evening. Palo Verde covers tuition, but requires a letter grade of B or better in each course. The partnership between Palo Verde and EMCC was healthy, but something was missing.

"We needed these students to have lab experience, but the facilities at EMCC didn't support that," said Rickie Timmons, a Palo Verde employee who teaches West-MEC courses full time. "Students weren't getting the full picture."

The Perfect Triangle

A small group of decision-makers from West-MEC, EMCC and Palo Verde started to hold regular meetings, in 2013, to develop a shared vision of building energy industry pathways for students of any age.

"That's when [former Palo Verde Chief Nuclear Officer] Randy Edington started bending my ear about bringing West-MEC into the partnership," stated West-MEC Superintendent Gregory Donovan.

The challenge to overcome was the lack of space at EMCC for the necessary lab equipment. From a blank canvas, the West-MEC Southwest Campus was designed to support the required infrastructure. Representatives from West-MEC, Palo Verde, EMCC, DLR Group (architects) and McCarthy Construction all collaborated to build a learning environment that fit the needs of students and industry. The most valuable product of these meetings was the creation of a unified mission between partners — to champion lifelong learning.

"Together, we create a perfect triangle: West-MEC teaching secondary education, EMCC offering postsecondary credits and Palo Verde training adults. We wanted an every-single-day type of partnership, not

just our logos slapped together on a billboard," said Donovan.

With EMCC's power plant program already in place, articulation agreements could be made to provide West-MEC students 24 college credits if they chose to pay for dual enrollment. Palo Verde donated over a million dollars' worth of equipment to West-MEC, including a flow loop lab, diesel equipment and a power generator. One full-time Palo Verde employee was tasked with designing the energy and industrial technology program curriculum.

"There weren't any blueprints, so I was always talking to West-MEC and EMCC to make sure everything was aligning as it should for education standards and dual enrollment," said Rickie Timmons. "Having all the players at the same table let us create something truly beneficial for students and industry."

With curriculum and facilities in place, the most important part had yet to come: teaching and learning.

Energizing Students

In August 2016, the Southwest Campus opened its doors to eager learners for the first time. High school students from across the West Valley traveled to the bright orange building to take part in one of four programs. Some students commuted 45 minutes to attend class. Enrollment in a West-MEC program requires a considerable commitment. It involves travel, the challenge of balancing schoolwork, and often means forgoing sports. Students aren't likely to sign up for a program on a whim.

"When we survey our students about how they came to know about West-MEC, 'high school counselor' consistently ranks the highest," said Speranta Klees, postsecondary partners manager at West-MEC. "The energy program is very technical. It's difficult to understand. If counselors don't know the program, how can we expect them to explain the merits of working at a place like Palo Verde?"



Phase one of West-MEC's Southwest Campus.

To incentivize counselors with bloated caseloads to learn more about energy careers, Klees partnered with Palo Verde to create the Discover Energy Grant. Participants saw the state-of-the-art Palo Verde Generating Station and learned from employees how the plant operates as well as about the importance of nuclear to the United States' renewable energy portfolio. Leaders from APS spoke to the collaboration between West-MEC, EMCC and Palo Verde to create a workforce pipeline.

Producing Results

After a single year in operation, a West-MEC student earned a coveted internship with Palo Verde and, at only 18 years old, Ariel Gutierrez is one of the youngest interns at Palo Verde.

"About 300 people apply for the internship every year and only 15 or so make it in," said Timmons. "Applicants have to pass a mechanical aptitude test, along with three rounds of behavioral-based tests to make sure the applicant will be a good fit for Palo Verde. Character is a lot harder to teach than technical skills."

Gutierrez excelled in his coursework at West-MEC, saying that he was always me-



Water vapor rises from the Palo Verde Generating Station.

chanically inclined and loved getting to work with his hands. But his studies were not something he had always given his best effort.

"When I first started high school, I was getting Cs and Ds because that was good enough to pass. But my sophomore year I applied for West-MEC's welding program and didn't get in. That really pushed me to get my grades up," Gutierrez said.

His hard work paid off the following year when he was accepted into the energy and industrial technology program after speaking with his counselor. From there, Gutierrez blossomed.

"You know how, when you're super focused on something and time flies by? That's how I feel when I'm working. I pull something apart, put it back together, and

Energizing Education to Spark Change

then it's already lunch time. I don't think I could handle staring at a clock in an office all day," he laughed.

Gutierrez had the opportunity to work in multiple departments to determine what might be the best fit for him. Just like the other interns in the program, he hopes to secure an apprenticeship with Palo Verde.

"Learning about the mechanical side of things was my favorite, through and through, so I'm hoping I land an apprenticeship," said Gutierrez. "If you know what you enjoy, pursue it."

Naturally, the Gutierrez family is proud of his success. Better yet, he has inspired

other family members to work hard and pursue the opportunities given to them.

"My parents are very happy that I have this path in front of me. The skills I'm learning today will be relevant for the rest of my life, even if I don't stay with Palo Verde," Gutierrez said. "Some of my cousins have started to talk to me about their plans for their futures, which is awesome. I want to see them be successful too."

Empowering a Community

The city of Buckeye, Arizona, is a growing community (Coble, 2018). Charming new housing settlements tempt homebuyers to move out to the far West Valley. The

highway system in the Valley of the Sun continues to grow, connecting the farthest corners of the Phoenix metropolitan area. This combination, Buckeye hopes, will court employers to build facilities in the West Valley.

"Simply put," Donovan stated, "West-MEC and CTE make cities more attractive. What's the number one thing companies look for when deciding where to build next? A skilled workforce. With the help of our partners, that's what we provide."

However, the benefit to the community moves beyond pure economics. In the summer of 2018, Palo Verde and EMCC worked together to host a summer camp



PHOTO BY KYLE BACKER.

Ariel Gutierrez adjusts an instrumentation panel.

at the Southwest Campus for elementary and middle school students interested in STEM careers.

“We thought it was very important to promote early career awareness, especially in young females, so we decided to put together a camp focused on robotics, drones and science,” said Kingman.

The efficacy of West-MEC, Palo Verde and EMCC has been noticed by organizations at home and abroad, with industry leaders traveling to the Southwest Campus to see how they could implement a similar partnership in their own communities.

“What we have is an international model for how a workforce pipeline can be created through strong relation-

ships between local schools, colleges and industry,” said Donovan. “We’re all there helping students of all ages move forward and supporting each other. Isn’t this how education should be?” ■

Kyle Backer is the communications specialist for West-MEC. He writes on behalf of the district, manages their social media presence, and speaks at community events. Email him at kyle.backer@west-mec.org.

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2018 ANNUAL REPORT

“It’s a great time to be in CTE!”



As a kid growing up in Southern California, I spent many Saturdays at the beach with my family, learning to body surf and eventually to boogie board. It was such a thrill to catch a wave that you could ride for a long time or all the way into the shore line. It was epic! And it made you want to find another wave to ride over and over.

This year, in career and technical education (CTE) and for ACTE, has been epic. We have been riding an amazing wave of great successes. The Strengthening Career and Technical Education for the 21st Century Act (Perkins V) has passed and received increases in funding. The incredible work by ACTE staff and members at National Policy Seminar, on Capitol Hill and at home: We’ve done it. The advocacy efforts and direction provided by ACTE were the driving force behind this momentous achievement.

More and more policymakers and private industry stakeholders recognize CTE; they understand the vital importance of CTE and they are reaching out to ACTE for partnerships, information and collaboration. Isn’t it exciting?! Thank you for being a part of this. ACTE could not do what it does without our members. Member support is critical to the continuing success of CTE nationally and locally. Membership remains strong as CTE professionals see the value in the resources that ACTE can provide. Together, as members and an association, we can ride this incredible wave of positive energy.

Member value continues to be a top priority for ACTE. *Techniques* magazine (and the new PAGES blog) focus on innovative CTE programs across the nation, sharing best practices and strategies for success. What an incredible opportunity to learn from other professionals throughout the nation. In addition, CTE Month[®] activities are gaining momentum throughout the nation as CTE is becoming more and more recognizable in the media and among parents, students and educators in and out of the CTE realm.

We are so fortunate to be part of an association that works so hard so many ways. As you read through this annual report, you will be amazed at all that ACTE has accomplished on behalf of CTE nationwide. Let’s ride this wave and keep riding. It’s making a difference for our students, for our profession and for our national economy. It’s a great time to be in CTE!

A handwritten signature in cursive script that reads "Becky Cox".

Becky Cox
ACTE President
2018–19

PUBLIC POLICY, ADVOCACY AND RESEARCH

Federal Policy Activity

The year 2018 proved to be critical for federal CTE policy. Most importantly, the enactment of the Strengthening Career and Technical Education for the 21st Century Act ushers in a new Perkins law. ACTE, along with other organizations, is calling this new law “Perkins V,” as the 2006 Perkins Act was commonly referred to as Perkins IV (the fourth iteration of bills named after Carl D. Perkins), and this new Act merely amends that legislation. The new law is a culmination of roughly six years of hard work, and ACTE was engaged with policymakers and involved in discussions throughout the process. Perkins V was signed into law on July 31, 2018. The law will take effect on July 1, 2019 and begin with a transition year.

Perkins V makes some significant changes, including the addition of a new local needs assessment that requires local recipients to review student performance, program quality and labor market information no less frequently than every two years in consultation with a variety of stakeholders. Additionally, a new CTE concentrator definition is added; the local uses of funds section is streamlined; and funding eligibility is expanded throughout the middle grades. Other reforms include changes to the process for setting performance targets and accountability indicators. With a new law on the books, ACTE shifted gears to focus on implementation. A variety of resources can be found on our dedicated Perkins V implementation webpage.

Early in the year, as Congress worked to finalize the delayed Fiscal Year (FY) 2018 appropriations bills, ACTE focused on efforts to secure additional Perkins funding. In March, Congress passed an omnibus spending bill that included a \$75 million increase for Perkins Basic State Grants, the first significant increase in a number of years for Perkins. The increase came despite the Trump Administration’s proposed 15 percent cut to state grants.

Work then moved forward rapidly on the FY 2019 process, which was already underway. As in previous years, ACTE worked with policymakers to circulate a funding letter in support of increased investments in career and technical education (CTE). In total, 38 senators signed on to a letter calling for Perkins funding increases, as did a bipartisan coalition of 170 House members. In April, Dr. Tom Friedemann, superintendent and CEO of Francis Tuttle Technology Center in Oklahoma, testified before a House appropriations subcommittee about the important role that Perkins funding plays in supporting students.

Throughout the summer, ACTE continued advocating for Perkins funding increases as appropriations bills moved through the House and Senate. The House proposed a \$102 million increase to Perkins, while the Senate only provided level funding. In the compromise conference report, an agreement was reached to increase funding for Perkins Basic State Grants by \$70 million. This was ultimately approved by the full Congress and signed by the president, increasing the FY 2019 state grants total to nearly \$1.263 billion.

ACTE had success in pushing back against a proposal from the Department of Education to merge the Office of Career, Technical and Adult Education (OCTAE) into a new office of “postsecondary and lifelong learning.” ACTE strongly opposes this proposal, as a dedicated OCTAE Assistant Secretary is crucial to representing CTE’s unique role in education. With the support of ACTE, Reps. Jim Langevin (D-RI) and Glenn “GT” Thompson (R-PA) co-authored a letter to Secretary of Education Betsy DeVos outlining their concerns about the proposal. At their urging, the FY 2019 funding conference report expressed that the planned OCTAE consolidation could undermine the ability of the department to fulfill its mission and effectively implement federal programs that support CTE.

Action on other education- and workforce-related legislation is on hold. Reauthorizations of the Higher Education Act, Individuals with Disabilities Education Act and Temporary Assistance for Needy Families did not cross the finish line in the 115th Congress. However, ACTE continues to develop and promote our priorities on these issues and others and regularly provides feedback to Members of Congress on other CTE-related pieces of legislation.

ACTE also continued to work closely with the House and Senate CTE Caucuses. In 2018, ACTE helped organize four separate Senate CTE Caucus briefings, covering Perkins, the Higher Education Act, the intersection of veterans and CTE, and the National FFA Organization and agriculture education. ACTE also partnered with the Senate CTE Caucus to host a reception in conjunction with the National Policy Seminar. The reception, attended by ACTE members, Members of Congress and congressional staff, showcased seven different career and technical student organizations (CTSOs) with students participating from all across the country.

Publications and Research

The CTE Policy Watch blog remained an important resource for advocates on the latest federal policy

news. This year, the blog is on track to publish nearly 120 stories related to federal and state policy, regulatory activity, research and more. Additionally, as 2018 is a midterm election year, the blog included nonpartisan election coverage.

We have continued to track CTE policy efforts at the state level in an effort to identify trends and share best practices among CTE stakeholders. In January 2018, ACTE and Advance CTE released our fifth annual state policy paper, “State Policies Impacting CTE: 2017 Year in Review,” and participated in a corresponding webinar. We also continued our collaboration with myOptions to survey CTE students and educators nationwide about post-high school plans, perceptions of CTE and CTE program elements.

ACTE remains a provider of data- and research-based resources and publications to support advocacy and information efforts, continuing to update our line of Sector Sheets and developing a new advocacy handout for business partners. In addition, in 2018, ACTE published a new evidence-based fact sheet describing how CTE helps students develop employability skills that have value across industries and career fields, along with other new fact sheets and infographics.

We continue to act as a leader in the area of education and workforce data through partnerships with the Workforce Data Quality Campaign, the WorkCred Research Advisory Council and the PostSec Data Collaborative.

ACTE made major strides on our High-quality CTE Initiative, a multi-step project to identify a comprehensive, research-based quality CTE program of study framework, test the framework, and integrate it into our efforts to recognize and disseminate information on best practices within CTE. Pilot testing of the Quality CTE Program of Study Framework, Beta Version 4.0, was completed and feedback was incorporated into the final iteration and accompanying rubric, which was released this fall in paper and online versions. Users can now complete this self-evaluation rubric online, save or print their results, and access our High-quality CTE Tools online library for resources that support success in each of ACTE’s 12 elements of high-quality CTE. We also incorporated the 12 elements of high-quality CTE into the ACTE awards process and CareerTech VISION programming, and launched a new column on high-quality CTE in the November/December 2018 issue of *Techniques*.

PROGRAMS & COMMUNICATIONS

IN 2018, COMMUNICATION EFFORTS FOCUSED ON LAUNCHING OUR NEW WEBSITE TO ENHANCE AND expand ACTE's sphere of influence. We leverage multiple channels — from *Techniques* to the web and social media — to communicate myriad opportunities for active engagement with research and advocacy efforts as well as attendance at events.

Techniques



Offering insight readers trust, *Techniques* is written by and for career and technical educators. In each issue, columns and cover stories (called themes) address new technologies and the latest trends, leadership, pedagogy, professional development and what it means to engage students through CTE.

NEW! In 2018, we introduced new content for *Techniques*, in an effort to increase readership engagement with the magazine. In addition to the new Quality Counts column launched in November/December to replace Capitol View, member/program news briefs and an interactive quiz were added. Furthermore, ACTE added to its slate of digital offerings with a blog written by *Techniques* Managing Editor Lia Milgram.

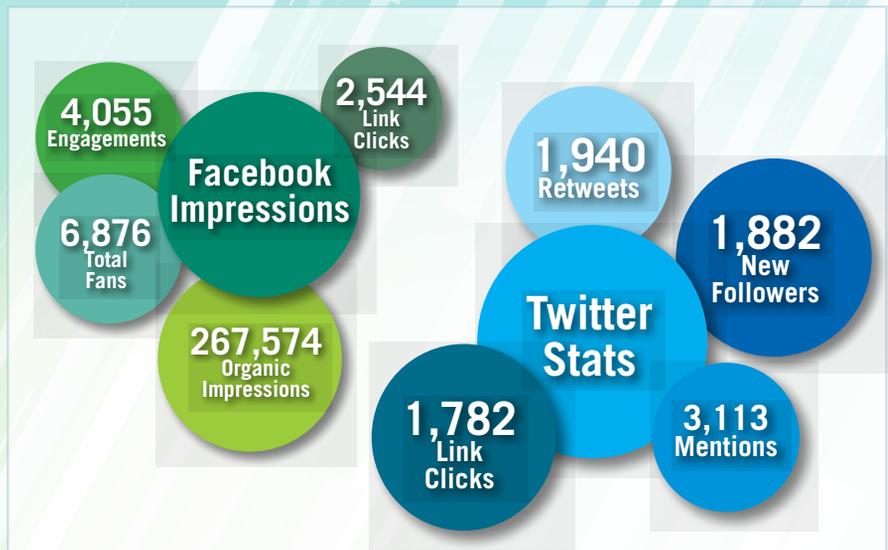
Social Media

The last year has brought a new wave of followers for, and engagement with, our social media presence. With a plethora of platforms to choose from, ACTE made the strategic decision to focus on Twitter, Instagram and Facebook.

ACTE promoted many CTE events and initiatives. In February 2018, for CTE Month, ACTE launched a campaign called #28DaysofCTE and featured a CTE program, video, infographic, event or celebration on Twitter and Facebook daily. In conjunction, we hosted our annual CTSO Twitter chat, during which students, teachers and CTE professionals gathered using the hashtag #CTSOchat to discuss the current state and future of CTE.

ACTE also promoted Download Day and the CareerTech VISION event app. We will continue to establish momentum on social media with more quality campaigns, videos and interactions for followers and members.

WELCOME TO THE NEW ACTEONLINE.ORG!



MEMBERSHIP

IT'S AN EXCITING TIME TO BE A MEMBER OF ACTE! THE FISCAL YEAR ENDED WITH 23,417 MEMBERS.

Thanks to ACTE's partnerships with state associations, along with continued efforts to support the CTE community, the year concluded with 5,185 new members. Additional member highlights are featured below.

- Crafted several joint membership e-blast campaigns, event pieces and membership campaigns, targeting new teachers, specific state members and ACTE event prospects
- Developed and released a direct mail piece welcoming TIVA as a unified division affiliate; a Kentucky ACTE postcard as well as a Virginia ACTE postcard promoting member benefits and professional development opportunities; and an Indiana postcard encouraging members to vote "yes" to unify with national ACTE
- Implemented campaigns targeting states, specifically in Region V, by sending e-blasts highlighting perks of both ACTE and state ACTE membership

We also deployed our annual membership drive in early 2018. From e-blasts that focused on professional development opportunities, ACTE's accomplishments (including policy) and highlighted membership benefits, we gained 325 new members. These e-blasts targeted lapsed members and CareerTech VISION 2017 non-member attendees.

In ACTE's 2018 member survey, members referenced most-valued benefits as attendance at both state and national ACTE conferences; networking; *Techniques* magazine, our flagship publication covering a variety of CTE perspectives and issues; attending CareerTech VISION, ACTE's premier event; and celebrating CTE Month in February by participating in school, state and nationwide events. Members also noted that they are interested in more workshops and peer-led professional development.

ACTE will continue to work to enhance its professional development offerings and cover members' most requested topics, including practices, processes and technology specific to career specialties and ACTE divisions; digital

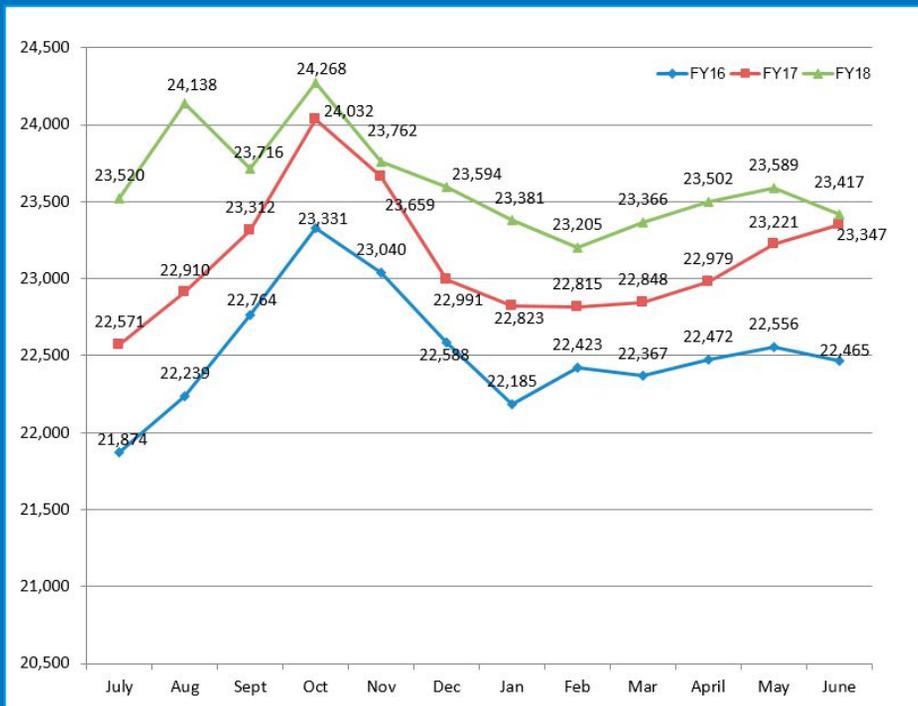
content; career development for students; support and development for CTE professionals; and work-based learning.



ACTE's CareerTech VISION 2018

ACTE's CareerTech VISION 2018 headed to the Lone Star State, Nov. 28–Dec. 1, for four packed days of high-quality professional development possibilities, prime networking opportunities and direct access to thousands of professionals representing all facets of CTE. With cutting-edge keynote speakers, more than 300 concurrent sessions, the CareerTech Expo, special awards and member recognition, STEM is CTE Symposium and more, VISION offers something for everyone in CTE. Join us Dec. 4–7 in Anaheim, California, for VISION 2019.

Membership Remains Strong



*Note: This graph does not include the one-time memberships from Connecticut.



National Policy Seminar 2018

Each year in March, hundreds of passionate advocates for career and technical education convene in Washington, D.C., for ACTE's National Policy Seminar. The 2018 event, March 5–7, attracted close to 400 attendees, and offered educators dedicated time with legislators to advocate for their CTE programs. The event also provided attendees with specific updates on legislation and federal funding for CTE with a symposium on increasing positive awareness of CTE's value. Join us again, March 25–27, 2019 in Arlington, Virginia, for opportunities to meet with policymakers on Capitol Hill, for policy and how-to sessions to help strengthen support for CTE, and for a Perkins V symposium.



Best Practices 2018

The ACTE and NCLA Best Practices and Innovations in CTE Conference hosted close to 300 CTE leaders in Louisville, Kentucky, Sept. 26–28. This year's signature event for CTE administrators included well-respected thought leaders, including Mark C. Perna, Bryan Albrecht and Josh Davies, and offered specialized workshops, tours and sessions on a variety of CTE administrator issues. Best Practices was also held in conjunction with the all-new Credential Summit, co-hosted with NOCTI and Nocti Business Solutions, and the ACTE Region II Conference, providing attendees with added professional development opportunities. Join us in Tucson, Arizona, for the 2019 event happening Sept. 25–27.

Boots on the Ground

ACTE is proud to support the tremendous work of its affiliated state organizations through participation in state CTE events to provide key legislative updates, details on important ACTE initiatives, membership information and more! In 2018, ACTE attended 43 CTE events in the following states: Alabama, Alaska, Arizona, Arkansas, Colorado, District of Columbia, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota,

Mississippi, Missouri, Montana, Nebraska, Nevada, New Mexico, New Jersey, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, Washington, Wisconsin and Wyoming.

ACTE also participated in all five region conferences: Region I (Maryland), Region II (Kentucky), Region III (Wisconsin), Region IV (New Mexico) and Region V (Colorado).

Expanding Outreach

ACTE is proud to represent member interests at a variety of events. Included below is a sampling of where we've been in 2018.

2018 National Career Academy Coalition (NCAC) Conference

Advance CTE Events

American Technical Education Association Annual conference

Collegiate DECA Conference 2018

FCCLA National Cluster Meeting

Louisiana Community & Technical College Annual Conference

National FFA Convention

NCCER Workforce Development Meetings

SkillsUSA National Leadership and Skills Conference

SREB Conference

U.S News and World Report STEM Solutions Conference

PARTNERS

ACTE'S NEW STRATEGIC PLAN INCLUDES A PRIORITY ON STRATEGIC PARTNERSHIPS AND confirms that ACTE is well positioned to create a coherent system for connecting employers in the CTE conversation. As with every year, it was important for our work to include strong connections to employers due to the symbiotic relationship between CTE and business and industry. In 2018, we partnered with a variety of other organizations to support membership services, organization activities and strengthening our community. While the following is not a comprehensive list, it provides a snapshot of some of our partnerships during the year.



Advance CTE—ACTE views our relationship with Advance CTE, which represents state government leaders responsible for secondary, postsecondary and adult career and technical education, as one of our most important partnerships. Our staff regularly meet with their Advance CTE counterparts to communicate, align strategies and ensure non-duplication of activities. This year, Advance CTE graciously included ACTE as a thought partner to design four counselor workshops as part of their work with the Siemens Foundation.



U.S. Army—The U.S. Army is a key workforce development partner and has supported ACTE for many years through a variety of activities. That partnership continued this year. In addition to their participation in the annual CareerTech VISION Expo and Career Pavilion, the U.S. Army supported two ACTE region conferences, the Oregon ACTE conference, our Best Practices and Innovations in CTE Conference, the Industry Connect blog, the STEM is CTE Symposium, and a Guidance and Career Development Division meeting, among other activities.

HARBOR FREIGHT TOOLS FOR SCHOOLS

Harbor Freight Tools for Schools—A philanthropic initiative of The Smidt Foundation, Harbor Freight Tools for Schools is dedicated to the advancement of skilled trades education in America. They invited ACTE to help coordinate the first round of judging for its 2018 Prize for Teaching Excellence, which will have awarded \$1 million to 18 outstanding public high school skilled trades teachers, teacher teams and their programs.



Pearson—Updates to ACTE's Sector Sheet series and related mailings to state leaders, such as governors, chief state school officers and state CTE directors, were made possible through Pearson's generous support. In addition, Pearson has forwarded the series to thousands of school counselors and communicated to its wide audience about ACTE's conferences and events. They have also contributed to programming at the CareerTech VISION and other conferences.



TechForce Foundation—The mission of TechForce Foundation is to champion students to and through their education and into careers as professional technicians, seen on display in the CTE documentary *True Pursuit*. Working with the support of TechForce Foundation, through outreach and communication efforts, ACTE promoted and sponsored the screening of the 25 minute video before more than 70 schools and career centers. Its component segments and online resources are made available, free to all, to use in convening local discussions about their efforts to prepare students for life after high school.



NOCTI—In 2018, NOCTI continued their expansive support through a number of activities to help the CTE field. The fruits of our partnership included publication of the first of three new CTE administrator professional development books (*10 Things to Know*); updates made to *Putting Your Data to Work*; the first-ever co-hosted Credential Summit; and sponsorship and exhibit arrangements at a number of ACTE workshops and conferences.



PMIEF—The Project Management Institute Educational Foundation (PMIEF) continued their support of CTE professionals through investment and involvement in the creation of a series of new online modules for "STEM and Workforce Readiness" and "CTE Administrator" both of which are currently available.



Industry Connect Blog—ACTE's emphasis on partners has expanded to bring their unique voice, as it involves career and technical education, to speak to our members. The Industry Connect Blog, sponsored by the U.S. Army, features original posts from our industry partners about their support for CTE and their efforts in workforce development programs and activities.

MEDIA ACTIVITIES

WITH AN AIM TO INCREASE AWARENESS ABOUT THE BENEFITS OF HIGH-QUALITY CTE PROGRAMS AND examples of outstanding programs all across the country, ACTE has continued its media outreach strategy through a variety of mediums. From television to radio, and newspapers to online platforms, ACTE implemented an aggressive media outreach strategy. ACTE was specifically quoted in more than 30 news stories, including in distinguished national outlets like *The New York Times*, ABC News, *Politico*, *Education Week* and others. Many of these stories were related to Perkins reauthorization, requiring ACTE to respond quickly to new developments. This rapid response helped set the narrative and led to some positive changes throughout the legislative process.

ACTE's media visibility extended to op-eds. ACTE Executive Director LeAnn Wilson co-authored a piece in *The Hill*, a prominent publication geared toward federal policymakers, to coincide with CTE Month and urge policymakers to increase investments in Perkins. Wilson embraced legislation to strengthen the agriculture workforce

in an *Agri-pulse* op-ed, and wrote about the impact of the technical skills shortage on economic productivity in a co-authored op-ed for *Transportation Today*.

In addition to the direct coverage ACTE receives in the media, reporters rely on the Association for background information and analysis. ACTE staff spoke with dozens of reporters for background to help them write positive and accurate stories on CTE and ACTE's policy priorities. Indeed, ACTE's fingerprints can be found on dozens of stories that did not feature our name, but nonetheless contributed to the CTE narrative, particularly related to Perkins reauthorization. ACTE also raised awareness about critical federal CTE policy issues by distributing nearly 20 targeted press releases on issues like appropriations, legislation and more.

CTE Month

In February 2018, CTE Month promoted program success stories and news articles via social media, hosted its second annual Thunderclap



campaign and a lively Twitter chat with CTSOs, and crafted governmental proclamations honoring the benefits of high-quality CTE. ACTE also hosted a CTE Month video PSA contest with the winning video celebrating "Generations of CTE," produced by CTE students at Indiana County Technical Center.

ACTE staff also participated in a CTE Month site visit at the University of the District of Columbia Community College's United Medical Center Campus for a tour and discussion of the college's Division of Workforce Development and Lifelong Learning. Featured programs included a variety of training in high-demand healthcare industries, from phlebotomy and direct care roles to healthcare administration.

LEADERSHIP

IN 2018, ACTE CONTINUED ITS ACTIVITIES AND INITIATIVES TO FURTHER ENGAGE MEMBERS WITH the Association and develop their leadership potential. These activities support ACTE's strategic goals to engage its membership and grow a strong leadership pipeline.

Educators in Action

Educators in Action is a small army of ACTE members who volunteer their time and expertise to advocate for ACTE and CTE in their communities; write for ACTE's publications; provide input on ACTE's professional development offerings; and serve on committees, task forces and advisory groups to work toward ACTE's strategic goals. This year, Educators in Action continued to host Virtual



CTE Discussions for their peers on a variety of topics and provided input on ACTE's new strategic plan.

Educators in Action Blog

Educators in Action blog has had a successful year building a loyal following of writers and readers. The interactive blog platform gives members a forum to share their best practices, opinions and stories. For cohesive messaging, the Educators in Action Blog topics calendar is synchronized with the editorial themes in *Techniques*.

Leadership Programs

ACTE provides members with three programs to develop leadership skills and involvement to support the advancement of CTE: ACTE LEAD, an intensive and focused leadership development program for new professionals; ACTE Connect, which offers attendees at region conferences a glimpse into getting involved with ACTE; and a New Professionals Cohort of the ACTE National Leadership Fellowship Program, which began this year as an extension of the current program.

AWARDS

ACTE'S RECOGNITION PROGRAMS IN 2018 HAVE CONTINUED TO GROW IN APPLICANTS AND ELEVATE THE PERCEPTION OF CTE. THE EXCELLENCE AWARDS continued to reward professionals in the field for spearheading innovations in their schools and fostering best practices in high-quality CTE programs.

2018 Award Winners

In November 2017, ACTE recognized the following career and technical educators, professionals and business leaders at the Awards Banquet presentation in Nashville. Award winners were invited to present sessions on their best practices at CareerTech VISION 2018.



Teacher of the Year, sponsored by Express Employment Professionals: Linda Romano, Newburgh Free Academy, Newburgh, New York



Career Guidance Award: Sharon Barrow, Ware County School System, Waycross, Georgia



Administrator of the Year: Donna McKethan, Waco Independent School District, Waco, Texas



Postsecondary Teacher of the Year: Sally E. Arnett-Hartwick, Illinois State University, Normal, Illinois



New Teacher of the Year: Sara Quintana, Rancho High School, Las Vegas, Nevada



Carl Perkins Community Service Award: Stephanie Jolliff, Ridgmont Schools, Mt. Victory, Ohio



Lifetime Achievement Award: Roxanne L. Trees, Seattle Public Schools, Seattle, Washington



Business Leader of the Year: William J. Nelson, Independent Consultant



Business of the Year: John Deere



Champion of the Year: Dr. Kenneth Wallace, Maine Township School District #207, Park Ridge, Illinois

2018 Student Trophy Design Contest

Since 2013, ACTE has partnered with Stratasys to present the national award winners with unique trophies that celebrate and embody ACTE's core values. Created by cutting-edge 3D-printing technology, the trophies reflect CTE's role in preparing students for 21st century careers, and they harness the power of collaboration between CTE and business and industry partners. In 2018, ACTE held its third annual student competition to redesign the trophies; the contest received a record-breaking 438 entries representing a continued increase over the past three years.

The winning design was submitted by Shreya Santhanagopalan and Rashi Kejriwal, juniors at Mount Hebron High School in Ellicott City, Maryland, and was used as the template for the national trophies presented at the Awards Banquet in San Antonio, Texas. For their winning entry, Santhanagopalan and Kejriwal received a \$500 scholarship each, and their school a one-year lease of a 3D printer, courtesy of Stratasys. They were recognized at the banquet alongside their teacher, David Lucania.

2019 Awards

In March 2018, 38 state associations moved a record 150 state member award winners forward for consideration at the region level for the 2018–19 awards program.

The national winners were announced and honored at the Awards Banquet during ACTE's CareerTech VISION 2018. For their generous support of the awards program and the event, ACTE would like to thank our sponsors: Express Employment Professionals, U.S. Army, CareerSafe and Stratasys.

New Awards Announced

This year, ACTE's Image Awards were retitled the Impact Awards, in an effort to revitalize their intent, and two new awards were announced to replace those previously awarded: the Business-Education Partnership Award and the Champion for CTE Award. This change brought forth a significant increase in awareness and applicants

A RECORD 150 STATE MEMBER AWARD WINNERS MOVED FORWARD

36 REGION WINNERS MOVED FORWARD TO THE NATIONAL LEVEL

2 NATIONAL RECIPIENTS OF THE ACTE IMPACT AWARDS





INDEPENDENT AUDITORS' REPORT

**Board of Directors
Association for Career and Technical Education
Alexandria, Virginia**

We have audited the accompanying financial statements of the **Association for Career and Technical Education** (a nonprofit organization), which comprise the statements of financial position as of June 30, 2018 and 2017, and the related statements of activities, functional expenses and cash flows for the years then ended, and the related notes to the financial statements.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditors consider internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

This published version of the auditor's report constitutes only a summary of the complete report.
Full reports are available upon request.

**Association for Career and Technical Education
Independent Auditors' Report
Page 2**

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the **Association for Career and Technical Education** as of June 30, 2018 and 2017, and the changes in its net assets and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Report on Supplementary Information

Our audits were conducted for the purpose of forming an opinion on the financial statements as a whole. The schedules of unrestricted, board designated net assets-regions and divisions and the schedules of temporarily restricted net assets shown on pages 20-23 are presented for purposes of additional analysis and are not a required part of the financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated in all material respects in relation to the financial statements as a whole.

DeLeon & Stang
DeLeon & Stang, CPAs
Gaithersburg, Maryland
September 13, 2018



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Full reports are available upon request.

ASSOCIATION FOR CAREER AND TECHNICAL EDUCATION
 Statements of Financial Position
 June 30, 2018 and 2017

	<u>2018</u>	<u>2017</u>
<u>ASSETS</u>		
<u>Assets:</u>		
Cash and cash equivalents	\$ 180,947	\$ 243,414
Restricted cash	5,745	3,794
Investments in marketable securities	5,657,705	4,894,066
Accounts receivable	117,227	97,332
Inventory	22,975	26,230
Prepaid expenses and other assets	233,733	244,075
Property and equipment, net of accumulated depreciation	1,725,429	1,631,624
TOTAL ASSETS	<u>\$ 7,943,761</u>	<u>\$ 7,140,535</u>
<u>LIABILITIES AND NET ASSETS</u>		
<u>Liabilities:</u>		
Accounts payable and other liabilities	\$ 290,304	\$ 301,772
Deferred revenue	1,542,396	1,401,539
Rental deposits	7,010	7,010
Note payable	331,214	393,635
Total liabilities	2,170,924	2,103,956
<u>Net Assets:</u>		
Unrestricted net assets	1,782,595	1,359,409
Unrestricted net assets, Board-Designated Regions and Divisions	453,487	445,448
Unrestricted net assets, Board-Designated Capital Improvements/Reserves	3,224,380	2,975,042
Total unrestricted net assets	5,460,462	4,779,899
Temporarily restricted net assets	312,375	256,680
Total net assets	5,772,837	5,036,579
TOTAL LIABILITIES AND NET ASSETS	<u>\$ 7,943,761</u>	<u>\$ 7,140,535</u>

This published version of the auditor's report constitutes only a summary of the complete report.
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ASSOCIATION FOR CAREER AND TECHNICAL EDUCATION
 Statements of Activities
 For the Years Ended June 30, 2018 and 2017

	2018		
	Unrestricted	Temporarily Restricted	Total
<u>Revenue and Support:</u>			
Membership dues	\$ 1,714,380	\$ -	\$ 1,714,380
Contributions	40,224	74,165	114,389
Sponsorship	266,596	-	266,596
Program service revenue:			
Convention, conferences and workshops	2,598,409	-	2,598,409
Publications	146,961	-	146,961
Advertising	164,853	-	164,853
Rental income	199,075	-	199,075
Service fees	21,295	-	21,295
Other revenue	180,945	-	180,945
Investment income	142,702	936	143,638
Net assets released from restrictions	19,406	(19,406)	-
Total revenue and support	5,494,846	55,695	5,550,541
<u>Expenses:</u>			
Program services:			
Convention, conferences and workshops	1,187,475	-	1,187,475
Publications	930,801	-	930,801
Government relations	267,628	-	267,628
Regions & divisions	176,134	-	176,134
Education services	270,426	-	270,426
Total program services	2,832,464	-	2,832,464
Supporting services:			
Finance & operations	1,075,797	-	1,075,797
Membership	452,298	-	452,298
Governance	453,724	-	453,724
Total supporting services	1,981,819	-	1,981,819
Total expenses	4,814,283	-	4,814,283
Change in net assets	680,563	55,695	736,258
Net assets at beginning of year	4,779,899	256,680	5,036,579
Net assets at end of year	\$ 5,460,462	\$ 312,375	\$ 5,772,837

This published version of the auditor's report constitutes only a summary of the complete report.
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The 2018–19 graduating class of the Bonanza High School Fire Science Academy

STRONG COMMUNITY PARTNERSHIPS CREATE DYNAMIC CTE PUBLIC SAFETY PROGRAMS

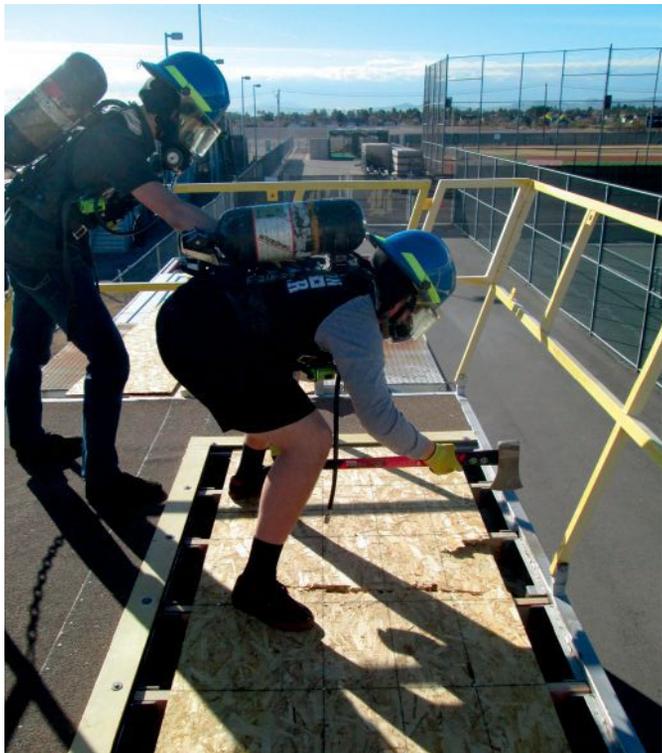
By Christopher Batterman

RED AND BLUE LIGHTS FLASH; WATER FLOWS IN A STREAM FROM FIRE HOSES AS LARGE PLUMES OF white smoke billow out of a red trailer near the football field: These images are a normal sight at Bonanza High School in Las Vegas, Nevada. Bonanza hosts the state's only fire science academy. This three-year hands on program exposes students to the many rigorous operations within the fire service industry.

Created in 2011, the Bonanza High School Fire Science Academy has successfully graduated more than 800 students interested in opportunities in the career and technical education (CTE) fields of law and public safety. Dual credit agreements with the College of Southern Nevada have led students to continue their education after high school and obtain their associate degrees within a year

after graduation. Numerous students have gone on to obtain careers at the local fire departments in Las Vegas, and others have been hired by wildland fire departments on the West Coast.

This program could not have happened without a strong community partnership board, support from local fire departments, involvement with explorer programs and an innovative



vision for a high school student CTE public safety program.

Community Partnerships

Building a fire science academy from the ground up takes time and a lot of money. In 2010, Las Vegas Fire and Rescue built and opened a new fire station on the campus of the College of Southern Nevada. And on that occasion, the city's Mayor Pro Tem Lois Tarkanian suggested a high school fire academy be created across the street at the current Bonanza High School. Las Vegas Fire and Rescue Chief Greg Gammon headed the opportunity and a partnership was formed. State standards were developed and the first class was taught in 2011; creation of an end-of-course exam would follow. But it wasn't always easy. The program began with one fire hose, one set of turnouts and a class set of *Essentials of Fire Fighting* for students to learn from and share.

Unfortunately it's often true that states and school districts cannot fully support funding programs with essential equipment to make the educational experience worthwhile. Proper community partnerships can be the answer. Over the years at Bonanza we formed

partnerships with other local fire departments, and with fire protection and fire equipment companies to supply the academy with equipment and opportunities for guest speakers.

Creating a board of various community and business leaders, including members from local fire departments, ambulance companies, fire protection businesses, and local colleges, can guide public safety programs into success. Consider how each organization will benefit from a successful local public safety academy that supplies educated individuals ready to enter the workforce. Support from partners such as these helps nurture CTE programs to become more effective and successful year after year.

State Curriculum and Standards Committee

Creating state standards that meet industry standards should be key in developing partnerships with a CTE program. Having a board that supports the idea of the program will facilitate easier and more successful attempts to obtain donations that meet industry standards. Partnering with local stakeholders, business leaders and public safety adminis-

FEMA got involved!

In the summer of 2018, the Federal Emergency Management Agency (FEMA) created a High School to College Pathways Workgroup to expand programs like the Bonanza High School Fire Science Academy nationwide. With similar curriculum and industry certifications, the Bonanza program serves as a blueprint model to align CTE fire science academies with a common vision.

The workgroup meets twice a year at the National Fire Academy in Emmitsburg, Maryland, to advance opportunities for high school fire academies across the nation. Members of the High School to College Pathways Workgroup include Christopher Batterman, instructor of the Bonanza High School Fire Science Academy, fire chiefs, CTE directors, firefighters and state education officials from each of FEMA's 10 regions.

trators will enable career and technical education (CTE) programs to build a strong foundation. Advice and input from industry personnel on the state curriculum creation committee will guide programs to align with industry standards more closely. This also allows students a better workplace experience within the classroom if community members state, within program standards, what they must see in future employees.

The Bonanza High School Fire Science Academy state curriculum committee — made up of six individuals, including a fire chief, firefighters and a local college program director — helped build a cur-

riculum that was adopted and approved by the Nevada Department of Education in October 2012 and led to students earning college credit. The committee met again a year later, in 2013, to create an end-of-course exam to test students' knowledge at the end of their three-year commitment to the fire science academy.

College Dual Credit

Involvement with the Bonanza High School community partnership board among local colleges is leveraged to offer dual credit opportunities for students. Additionally, their hand in the creation of the program's state educational stan-

dards paved a way for dual credit opportunities. The Bonanza High School Fire Science Academy has an agreement with the College of Southern Nevada that issues college credit to be applied toward their associate degree in fire science. Students must keep a 3.0 grade point average through all three years of the program, pass a state workplace readiness skills test, and pass a CTE fire program-of-study test in order to obtain credit.

The fire science classes taught at Bonanza mirror the curriculum and standards set forth by the College of Southern Nevada. Placing a local college program director on the community partnership board of a public service CTE program will benefit students. Many community colleges offer degree programs in career and technical education fields; if students take similar classes at the high school level, it seems only appropriate that these would lead to dual credit opportunities. Participating colleges are supplied with students who want to enroll because they already have credit within that educational institution.

As an added benefit, colleges in partnership with public safety programs at the high school level can donate (or "get rid" of) equipment that must be retired when new equipment arrives... What better use than to train a new generation of fire science personnel?

Donations

Supplying a CTE program with equipment that meets industry standards is a massive undertaking that can cost a small fortune. Collaborating with local businesses can prove beneficial as they update and must dispose of their older equipment to make space. The added benefit of community support with donations can lead to incentivized success. If you receive donated equipment, give a social media shout out! It's free advertising for the business and could be more valuable than a paid ad when it shows their support of educational programs.

Some retail stores have wonderful programs set aside for educational institutions that may be able to supply vital uniforms, equipment, and labor to support your program. For example, Target

SERVING SUBS. SAVING LIVES.

THANKS TO YOU MORE THAN \$21,000 DONATED!



YOUR SPARE CHANGE AT WORK!

Bonanza High School Fire Science Academy received a digital fire training system, worth more than \$21,000. The donated equipment will create real-life scenarios that will assist the academy's students when training to respond to any fire situation.

Firehouse Subs has donated more than \$126,000 in Nevada.



P U B L I C S A F E T Y

The Firehouse Subs Public Safety Foundation is a registered 501(c) (3) nonprofit organization.

offers community education donation programs and grants. And Costco has programs set aside to donate goods to nonprofit organizations. The Bonanza High School Fire Science Academy was grateful to receive more than \$21,000 worth of state-of-the-art firefighting equipment from the Firehouse Subs Public Safety Foundation.

Ask store managers if such programs exist in your area. Any donation made to your program can provide needed resources. If broken equipment is donated, turn that into a learning opportunity for your students by taking apart that item to see the inner workings. Students of all ages love to see how items work; the experience and knowledge gained could not have happened with working equipment! No matter, working or not working equipment, businesses that donate to your program should be included in any appreciation events to show your gratitude.

Explorer Programs

Due to insurance and school district policies, students are unable to experience live burns within the fire science academy's teachings. Nevertheless, this is a key component to gaining a Firefighter One certification in the state of Nevada. By collaborating with local fire department explorer programs, Bonanza fire science students are able to utilize their academy education while training with fire departments in live burn situations.

Explorer programs are based on more than firefighting. Many cities have police, emergency medical, food service, woodworking, and other hands-on CTE explorer programs. Explorer programs are an excellent way to collaborate with community partners in order to receive donations, allow students to build employee rapport, test student skills in the workplace, and keep program standards equal with industry standards. These explorer programs allow students to gain authentic work experiences while, at the same time, ensuring they are safe and supervised. Explorer programs also allow community partners to see, firsthand, the skill education the students are receiving in the program by applying them to true industry activities.

The Bonanza High School Fire Science Academy entered its eighth year, in 2018–19, with more than 225 students enrolled. These numbers continue to rise each year and we've even had to place student caps on entry level programs due to the number of applicants. Students will sell your program to other students if the class is successful, fun and beneficial for future employment. Overall, explorer programs present opportunities for program growth, drawing in potential students and fostering community partnerships.

Showing Appreciation

Community partnerships are wonderful in many ways, yet programs must provide recognition to keep those relationships strong. Holding an end-of-year banquet to celebrate students' graduation from a CTE program can be a wonderful way to show gratitude to community partners. Inviting the community partnership board and members who have helped the CTE program throughout the year will create excitement for the following year.

With an end-of-year golf tournament, the Bonanza High School Fire Science Academy has established an innovative way to show great appreciation. This private charity golf tournament celebrates a successful partnership year while fundraising for the following year. Consider how an event like this might work for your program as well:

- Collaborate with a local golf course and ask if they will donate tee time (or offer reduced rates), during a slow season, at the end of the school year.
- Create and send a flyer announcing a foursome golf tournament to raise funds for the program. The response, year after year, has been tremendous when the foursome costs \$150 and less.
- Ask business partners to donate items for raffles to help future CTE program success.
- Recruit student volunteers to work at tee boxes, as ball washers, to hand out water and thank all participants.
- Post a small sign thanking each business and organization individu-

ally. This is a simple but unique and thoughtful touch to make the partners know they are valued.

This is also a fun event for potential future community partners and a great golf outing that businesses look forward to for connecting with other community companies. All community partners should receive some token of appreciation. Simple plaques with a class photo, or even a simple spoken "thank you" can go far. Businesses need to remember why they help CTE programs; the way you show appreciation will guide businesses in a direction of future help and support.

Final Thoughts

The largest part of creating an effective public safety program is to remember patience. Success will not come overnight; community partnerships are as important for a fruitful public safety program as an effective instructor in the classroom. The support of a partnership board, staffed with business and community stakeholders, can lead to years of needed sustenance. Donations, guest speakers, field trip opportunities, internships, and community buy-in are all examples that occur from a strong partnership committee.

The creation of a board of leaders who will promote your CTE program and help you outside of the classroom, can make living in the CTE world that much more enjoyable. Businesses will make sure local CTE programs succeed if they see the programs help lead students to community careers, where they know they can have a say in tomorrow's employees today. ■

Christopher Batterman is the lead instructor of the Bonanza High School Fire Science Academy in Las Vegas, Nevada, a program he started in 2011 and for which he helped write the state curriculum and built community partnerships. Batterman is the 2018–19 Nevada ACTE Teacher Educator of the Year. Email him at battec@nv.ccsd.net.



CTE: Moving Forward

Building on the momentum of significant career and technical education policy achievements this year, National Policy Seminar, **March 25–27** in Arlington, Virginia, will provide:

- Policy and advocacy how-to sessions to help you continue to strengthen support for CTE
- Dedicated time on Capitol Hill to meet with legislators and advocate for your CTE programs
- Opportunities to exchange best practices and lessons learned for the future
- Perkins V symposium offering practical guidance as we move from reauthorization to state and local implementation

Early bird registration is now open! Learn more and register today when you visit www.acteonline.org/nps.

State Leadership Training

Are you looking to further develop your leadership skills in your role as a state association leader? Join us one day prior to the start of NPS, on **March 24**, 8:00–5:00 p.m., for state leadership training. All current state leaders and those interested in service are welcome to attend. Cost is \$25; sign up when you register to attend National Policy Seminar at www.acteonline.org/nps.

ACTE's CareerTech VISION 2019 Opens Call for Proposals

ACTE invites you to participate as a presenter at CareerTech VISION, the premier event for CTE professionals, **Dec. 4–7** in Anaheim, California. Featuring an abundance of professional development possibilities, prime networking opportunities and direct access to thousands of educators, industry representatives and business leaders, VISION presenters will have the opportunity to:

- Take advantage of more than 300 informative CTE sessions, influential keynote speakers and the CareerTech Expo
- Contribute to the CTE field by sharing best practices, program innovations and successful collaborations



- Advocate for CTE to key stakeholders from across the nation
- Receive a speaker discount on the VISION early bird registration rate

We are seeking high-quality presentation proposals that address the full range of issues facing CTE professionals striving to prepare students for 21st century careers as well as the High-quality CTE Program of Study. Sessions are typically 60 minutes in length and should allow time for questions. The deadline to submit proposals is **February 28**.

Learn more online at www.careertechvision.com.



CTE Month and NASA HUNCH Student Video Challenge

ACTE, host of CTE Month®, and NASA HUNCH are excited to collaborate on this year's student video challenge, showcasing career and technical education and project-based learning programs in high-demand, 21st century career fields on earth and in space. This year's theme, "Working Out of This World," calls on high school students to consider the following when preparing their video (two minutes or less in length):

1. Feature an imaginative or real future career, product or service that could be used on the International Space Station, an asteroid, the Moon, Mars, remote exploration and/or in other future space missions.
2. Talk about essential skills the rising workforce will need to thrive in a space exploration project.
3. Showcase a future scenario in outer space that incorporates CTE and/or project-based learning

The deadline to submit a video is the first day of CTE Month, **Feb. 1**. To learn more and enter, visit www.acteonline.org/cte-month-nasa-hunch-video-challenge.

For additional CTE Month resources and products to help celebrate CTE Month, visit www.acteonline.org/why-cte/cte-awareness/cte-month.

ECMC Foundation

ANNOUNCING the Postsecondary Leadership Success Program at ACTE – Sponsored by ECMC Foundation

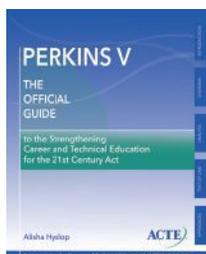
We are pleased to announce the launch of the Postsecondary Leadership Success Program (PLSP) at ACTE – Sponsored by ECMC Foundation. The program is designed to elevate the leadership of postsecondary CTE professionals — known as ECMC Foundation Fellows — from career and technical education centers, community and technical colleges, and other diverse organizations that serve adult learners. The PLSP will support two annual cohorts of 20 emerging leaders each.

Participants will spend a full year working as a team on a variety of projects and experiences under the direction of Dr. Belinda Cole, retired professor of education from Oklahoma State University, and with the guidance of a mentor. The program is funded by ECMC Foundation's CTE Leadership Collaborative, an initiative that equips postsecondary CTE leaders with the tools, resources and skills needed to advance the field.

For more information about the program and how to nominate a candidate for the Postsecondary Leadership Success Program at ACTE – Sponsored by ECMC Foundation, please visit www.acteonline.org/PLSP-ECMCF.

Essential Perkins V Resources

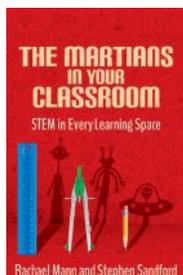
Check out the latest resources ACTE continues to amass on the Strengthening Career and Technical Education for the 21st Century Act, the bill that reauthoriz-



es the 2006 Carl D. Perkins Career and Technical Education Act.

- One-page and full summaries of the new law
- Perkins V recorded webinar including changes from prior legislation, definitions of key terms, accountability indicators, state and local planning and more
- Bill text as passed and redline showing changes to current law
- Tweet questions to our Twitter account @AskPerkinsV, using the hashtag #AskPerkinsV or email questions to publicpolicy@acteonline.org
- Purchase your copy of *Perkins V: The Official Guide to the Strengthening Career and Technical Education for the 21st Century Act*, by ACTE's Public Policy Director Alisha Hyslop. Member price is \$41.95.

For additional implementation guidance, visit www.acteonline.org/perkins-implementation.



STEM Careers of the Future via CTE

Revealing the urgent need for STEM and CTE in every learning space, Rachael Mann and Stephen Sandford's

The Martians in Your Classroom shows how the study of space stimulates young people interested in science and technology and the important roles educators as well as business and political leaders play in advancing STEM in schools. Member price is \$24.99. Purchase your copy today at www.acteonline.org/shop. ■

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SMALL ENGINE MECHANIC

By Susan Reese

SMALL ENGINE MECHANICS INSPECT, DIAGNOSE, SERVICE AND REPAIR MOTORIZED POWER EQUIPMENT

such as motorboats, motorcycles, dirt bikes, ATVs, snowmobiles, snow blowers and lawn maintenance equipment; they often specialize in one type of equipment. The duties of a small engine mechanic may include testing, routine maintenance, replacement of parts, and repair of mechanical, electrical or other system issues. They should be able to maintain records of their work and they should be able to work well with customers.

The Workplace

Small engine mechanics may find employment at motorcycle dealerships and other motor vehicle and parts dealers, for lawn and garden supply stores, and in the amusement and recreation industries. Some work for companies that provide maintenance and repair services, while others are self-employed.

Education

Small engine mechanics may begin their training through high school career and

technical education (CTE) programs in automotive technology and power equipment mechanics. They can supplement their on-the-job training with postsecondary education at two-year community colleges and technical schools, where they will not only learn technical skills but employability skills, including customer service, as well. They may also earn certifications like those offered by the Equipment & Engine Training Council.

Earnings

According to the *Occupational Outlook Handbook*, a publication of the U.S. Department of Labor's Bureau of Labor Statistics (2018), the median annual wage for small engine mechanics was \$35,990 in May 2017, with the highest 10 percent earning more than \$58,050.

Job Outlook

The *Occupational Outlook Handbook* projects that overall employment of small engine mechanics will grow about five percent from 2016 to 2026. One reason cited for this growth is that engines and parts

for boats and outdoor power equipment have become more sophisticated and efficient and, as a result, skilled technicians will be required for their maintenance and repair.

EXPLORE MORE

For more information about the career of small engine mechanic and the education and training required, here are some resources to explore.

Equipment & Engine Training Council
www.eetc.org

Marine Career Training Institute of North America
www.mctina.org

Outdoor Power Equipment Institute
www.opei.org

Outdoor Power Equipment Aftermarket Association
www.opeaa.org



SCHOOL SPOTLIGHT

TRUMBULL CAREER AND TECHNICAL CENTER

SINCE 1978, TRUMBULL CAREER AND TECHNICAL CENTER (TCTC) HAS PREPARED MORE THAN

35,000 students to be college and career ready. Located in Warren, Ohio, TCTC serves 20 Trumbull County school districts, providing quality education and training to both high school and adult students.

High school students who attend TCTC spend approximately half of each day in their chosen program of study, and the other half in academic studies. TCTC offers 32 full-time CTE programs and two senior-only programs representing 13 career fields, giving students the opportunity for active participation in hands-on, real-world learning experiences.

TCTC's Adult Training Center offers training in areas that include health care, information technology, welding, and trade and industry. For both public and private sector organizations, the Adult Training Center also offers services that range from strategic planning and needs analysis to testing, placement and training.

Among the programs offered at TCTC is power equipment technology, a two-year program teaching all aspects of small engine and agricultural mechanics. The current instructor, Howard Fraley, is himself a 1985 graduate of the program; today, students learn about two-cycle, four-cycle and diesel engines. Other areas of study include electrical, hydraulics, transmissions, carburetion and welding. Throughout the course of the program students are graded on their ability to inspect, diagnose, service or repair major system areas. They also learn skills such as customer service and relations, tool identification and usage, and tool crib management.

The students' related academic projects include

research and creation of a basic service price list and operating procedures. Other projects include calculating the cost of parts and labor, and designing and building an electrical circuit as well as a troubleshooting flow chart.

The power equipment technology program at TCTC places a heavy emphasis on safety. Students take a general lab safety course intended to introduce safety issues associated with the program. Prior to their use of each machine or piece of equipment, students take equipment-specific safety courses that teach safe and proper usage. They also take an online course in safety and pollution prevention issues associated with the industry. The students are required to take tests on these safety issues during the course of the program.

Through successful completion of the TCTC power equipment technology program, students can earn outdoor power certifications from the Equipment & Engine Training Council. TCTC also has a number of articulation agreements with two- and four-year colleges and universi-

ties, so students have options to continue their postsecondary education. Such agreements include up to 18 credit hours in equipment systems at the University of Northwestern Ohio and up to four credits toward an agribusiness management degree at Washington State Community College, as well as similar offerings at Kent State University.

TCTC remains committed to its mission of providing comprehensive, high-quality academics and career and technical education. *For more information about Trumbull Career and Technical Center and its Power Equipment Technology program, visit www.tctchome.com.* ■

Susan Reese is a *Techniques* contributing writer. Email her at susan@printmanagementinc.com.

REFERENCE

U.S. Department of Labor, Bureau of Labor Statistics. (2018). *Occupational Outlook Handbook*. Retrieved from www.bls.gov/ooh/.



Simulation Training

and Assessment for Medical Procedures

By Cameron Ricks

A GREAT WAY TO GET STUDENTS INTERESTED IN CAREERS IN MEDICINE IS TO UTILIZE SIMULATION

to train them in procedures frequently performed in the medical field. Getting students interested in careers in medicine prepares them for high-wage, high-demand careers. According to the United States Department of Labor's Bureau of Labor Statistics (2018), employment in healthcare occupations is projected to grow 18 percent from 2016–26, which is much greater than the average for all occupations, adding about 2.4 million new jobs. The median annual wage for healthcare practitioners and technical occupations (such as registered nurses, physicians and dental hygienists) was \$64,770 in May 2017, which was, again, higher than the median annual wage for all occupations.

Simulation training exposes students to the day-to-day activities of careers in medicine, connecting their STEM course knowledge with practical skills. Medical simulation training also demonstrates

student interest to prospective employers and schools and improves their career readiness. Ideally, students become certified to demonstrate how they have obtained hands-on practical knowledge.

Obstacles

With all of the benefits of medical procedure training, there are also a number of obstacles that can lead to instructor and student frustration. Many career and technical education (CTE) instructors struggle to:

- Determine which procedures are appropriate for simulation
- Find the physical space for simulation
- Decide what equipment is required for simulation

A common mistake simulation centers make is dedicating space and purchasing equipment without knowing exactly how it will be used. This leads to underutilized, or even unutilized, space and equipment.

One of the greatest obstacles is the lack of instructor knowledge and comfort surrounding procedures they may or may not have performed themselves. Additionally, once a student has learned a procedure, the challenge becomes how to prove their proficiency to employers, supervising clinicians, professional schools or colleges. Finally, there is the challenge of funding the equipment, certifications and training. While these obstacles can be daunting, there are solutions available.

Solutions

The medical procedures you choose to teach should strike a balance between those that meet your students' interests and those that fit best with the learning objectives of the courses being taught. Procedures such as hand washing, IV placement and ultrasound are applicable to most medical career paths and in courses that range from "Emergency Medical Response" to "Advanced Place-

SimRated[®]

Training and Assessment for Procedural Excellence

ment Biology.” And they don’t require much space.

Contrary to most assumptions, a majority of medical simulation does not require a dedicated space. In fact, most dedicated simulation spaces are underutilized; it is sometimes preferable to train students to attend medical procedures in multi-use spaces. However, medical simulation does require ample storage for disposables, task trainers and medical devices. It also is important to let your learning objectives drive your procedural simulation curriculum, which should then dictate your equipment choices, space and certification spending.

Once you have decided on which medical procedures align with your learning objectives, you will need to prepare to teach a procedure you may have never performed before. Extending an invitation to medical professionals to train your instructors and students is probably the best way to learn how to perform any given procedure, but we

know it can be difficult; it is often not feasible, nor practical. An alternative opportunity exists in the use of online curricula and videos that demonstrate medical procedures.

SimRated is a complete solution that combines procedural education with simulation-based assessment. SimRated provides online medical procedure curriculum, videos demonstrating the procedure, critical action checklists and the opportunity to upload videos of students performing each procedure for evaluation and feedback from expert clinicians. If students pass the multi-component evaluation, they receive a certification. This certification is accessible online and is transparent in the scoring and evaluation metrics used so clinicians, trade schools and colleges understand exactly what the certification means.

Now that you have decided on a set of procedures to train and a place to perform them, you will need to purchase the

equipment. This must include both disposable and non-disposable equipment such as task trainers. Task trainers are mannequin body parts like an arm for practicing IV placement. When purchasing task trainers, consider both initial and replacement costs, as task trainers can have varying lifespans.

Conclusion

Medical simulation training can be an exciting and enriching experience for your students that will ultimately prepare them for careers in medicine. Appropriate planning and industry partnerships can ensure a successful, viable simulation center for your organization’s future. ■

REFERENCE

United States Department of Labor, Bureau of Labor Statistics. (2018). Healthcare occupations. Retrieved from <https://www.bls.gov/ooh/healthcare/home.htm>.



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Across

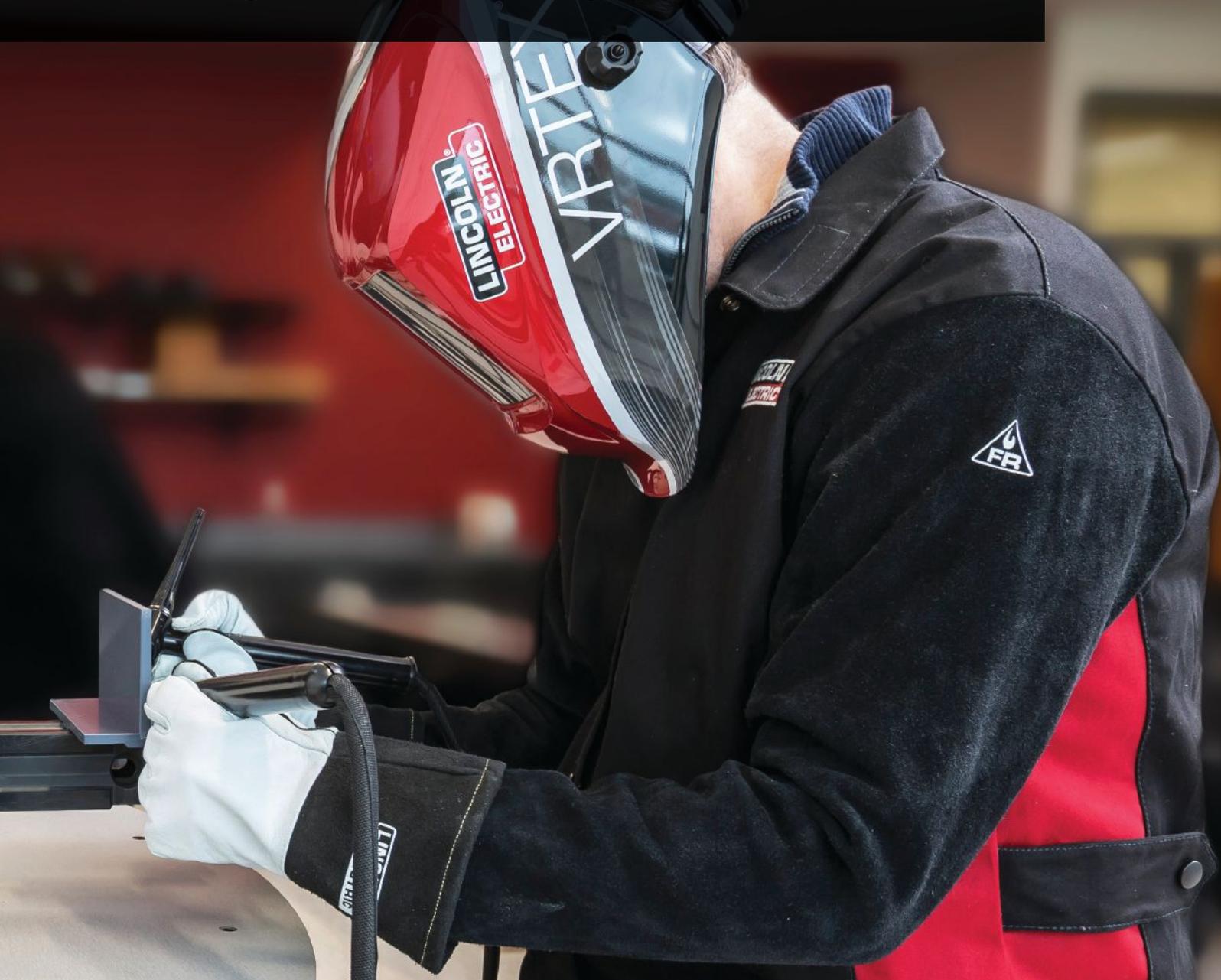
5. [blank] Counts, a new column in *TECHNIQUES*
7. An organized group of experts that, "in the case of career and technical education, provides a vital link to business and industry... for strategic visioning and long-term planning"
8. Partner organization with whom ACTE hosted the first-ever Credential Summit in 2018
9. The site of a nuclear generating facility that partnered with two schools in Arizona to develop a skilled workforce
11. The technical term for the transmission from a spacecraft to Earth
12. Wisconsin high school where students participated in "Food Matters" to ask questions and learn from business and community leaders

Down

1. Industry sector experiencing high demand for employees and CTE training programs
2. The E in FEMA
3. Business and community [blank]
4. ACTE partner organization that "represents state government leaders responsible for secondary, postsecondary and adult career and technical education"
6. The N in CNC
10. A telecommunications tool to facilitate virtual classroom visits from guest speakers

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