

2020 Harbor Freight Tools for Schools  
Prize for Teaching Excellence  
Finalists

**Alabama**

**Betsy Anderton** and **Luke Stewart** team-teach agriculture at Daphne High School in Daphne, Alabama. Anderton earned a doctorate in instructional design from the University of South Alabama and began teaching to pass hands-on skills to the next generation, including her three daughters. Stewart earned two bachelor's degrees from Auburn University and a master's degree in agriscience education from Murray State University. Together, the teachers promote collaboration in their classrooms, where students build a playhouse from the ground up each year and refurbish old equipment. Students also assist other teachers and programs by installing a marine science aquaponic system, using drone technology to help the landscape class develop a plan for their plants, building lockers for the girls' locker room and crafting props for theater productions. This past year, over 150 of Anderton and Stewart's students earned an industry credential. In a recent poll they conducted of their graduates, 90 percent have found employment that draws on the skills they learned in the agriculture program.

**Arizona**

**Jeremy Tarbet**, a graduate of Canyon del Oro High School in Tucson, Arizona, returned there to teach automotive technology eight years ago. During the school year, Tarbet's students restore classic cars while doing research on restoration techniques, applying mathematics in the fabrication process and working collaboratively to problem solve and produce a quality final product. His advanced automotive students are dual enrolled at Pima Community College and earn nine hours of credit. In the 2019-2020 school year, Tarbet's students earned over 360 credit hours of community college at no cost to them. Tarbet has led his students to over 22 state medals at competitions held by SkillsUSA, a national nonprofit association of trades students. Tarbet was also a 2020 SkillsUSA Advisor of the Year. Previously, Tarbet worked at Watson Chevrolet, a local dealership, after earning a bachelor's degree in psychology from the University of Arizona. Tarbet was a finalist for the 2019 Prize for Teaching Excellence.

**California**

**Angela Arnett** began teaching at Escondido High School in Escondido, California in 1998. She started as an English and dance teacher and took over the technical theater and stagecraft program in 2012. Though she already had earned a bachelor's degree in English education and a master's degree in dance, Arnett pursued further education via numerous conferences and professional development programs to grow her technical theater program. Her course attracts many students picking up tools for the first time

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and teaches skills that they can build on in the future, including through earning credits at Palomar College. Half of her stagecraft students are girls, and 65 percent of students are English learners, who she supports by translating her curriculum and coursework into Spanish. Over the past eight years, her program has built sets, installed lighting and provided other production skills to 21 theatrical productions.

**Benjamin Carpenter** is entering his third year teaching welding at John F. Kennedy High School, a Title I school in Richmond, California. For the past 20 years, Carpenter has been a professional fabricator, earning degrees in metalsmithing and design along with certifications in fire inspecting and fire safety. Before teaching at Richmond High School, he taught welding at the industrial arts school, The Crucible, for 12 years. Carpenter emphasizes the importance of collaboration and diversity in his classroom by dividing each class into groups of five students of different experience levels, backgrounds, academic expertise and personalities. These groups are responsible for the success of each of their members. He works with local community college welding program to connect to their curriculum and is building a pathway for students to gain college credits towards a postsecondary certificate or degree. Carpenter is a certified emergency medical technician.

**Nicholas Jordan** is entering his seventh year of teaching construction at Montecito High School in Ramona, California, after a 23-year career as a journeyman carpenter and contractor. Hailing from a family of educators, Jordan has won several state and district teaching awards. At the most recent regional competitions hosted by SkillsUSA, a national nonprofit association of trades students, 14 of 14 Montecito construction students won medals. Jordan teaches his students not only practical skills like framing, roofing, plumbing and electrical, but also the importance of being dependable and having a good work ethic. Students support their high school by repairing siding on portable buildings, building a snack bar for the high school swim team and expanding the weight room for the football team. They also mentor elementary school children, working with them to construct benches, planter boxes and Adirondack chairs. Jordan was a finalist for the 2018 Prize for Teaching Excellence.

**Stephen Marsh** teaches advanced digital manufacturing at Juan Rodriguez Cabrillo High School in Long Beach, California. Next year will be his 30th as a teacher. After his service in the Marine Corps and a career in injection molding, fabrication and aerospace, Marsh discovered a love of teaching and bringing industry skills into the classroom. His students learn engineering, machining, welding, product innovation and energy and power technologies, and how they connect to other academic subjects and to advanced degrees at the local community college. He connects his students to real world opportunities through visits to and apprenticeships in local industries—from inside union shops to onboard aircraft carriers. His students also pursue their interest in the trades through afterschool activities, where students create solar boats, electric cars and robots. In the 2019-2020 academic year, Marsh began offering students dual

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enrollment with Long Beach Community College. Marsh was a finalist for the 2019 Prize for Teaching Excellence.

**Chris Mollkoy** teaches industrial arts at Dos Pueblos High School in Goleta, California. Despite having learning challenges as a young student, Mollkoy was the first person in his family to graduate from college, earning a bachelor's degree in English and a teaching credential from the University of California, Davis. After teaching high school wrestling and English for seven years, Mollkoy switched careers, obtaining a contractor's license and starting his own finish carpentry company. He returned to teaching—this time as a trades teacher—and, in 2018, received the Marvin Melvin Award given to the Santa Barbara County Department of Education's career and technical education teacher of the year. Mollkoy has partnered with local organizations like Tradart, Partners in Education, the Santa Barbara Contractors Association, and Santa Barbara City College's Construction Technology program to create pathways for his students. Mollkoy's students also support their community by designing and building hiking signs damaged in a recent wildfire and donating a tiny home to a local nonprofit to help victims of trafficking.

**Brent Tuttle** is a welding instructor at La Mirada High School in La Mirado, California and has taught for 19 years. Tuttle has developed a four-year welding program that includes more than 1,000 hours in the welding shop and the completion of all traditional academic classes by graduation. Students in Tuttle's welding pathway have a 98 percent graduation rate. Many of Tuttle's students are "nontraditional"—meaning that their gender is not well represented in the welding trade. Several of Tuttle's female students have won statewide SkillsUSA competitions, and one student earned second place in the country in SkillsUSA's welding sculpture contest. In 2016, Tuttle was selected as National SkillsUSA Alumni of the Year. Tuttle was a finalist for the 2019 Prize for Teaching Excellence.

**Kathryn Worley** teaches industrial technology at West Hills High School in Santee, California. A 31-year teaching veteran, Worley was a 2018 San Diego County Teacher of the Year and a finalist for California Teacher of the Year. Students in her program learn design principles and applications, then a variety of building and fabrication techniques, including computer numerical control (CNC) manufacturing, milling, laser and additive manufacturing, welding and robotics. With deep relationships to industry, Worley's students make connections to employers like Taylor Guitars, LifeProof, the carpenters union and drone manufacturers. Her students compete in "Shark Tank"-inspired design competitions, where they design, manufacture and market unique products to industry and community professionals. Worley was a finalist for the 2019 Prize for Teaching Excellence.

**Travis Wyrick** has 12 years of experience teaching agriculture, including for the past two years at Visalia Technical Early College in Visalia, California, where he currently teaches agriculture. An alum of California Polytechnic University, San Luis Obispo, Wyrick works to expose students to several in-demand trades like welding, concrete,

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woodworking, agriculture mechanics and irrigation installation. From introducing students to using hand tools and welders for the first time to having them build welding trailers and disc harrows, tools used to prepare fields for planting. Wyrick was a finalist for the 2018 Prize for Teaching Excellence while teaching at Ann Sobrato High School.

### Colorado

**Brian Manley** teaches automotive technology at Cherry Creek Innovation Campus in Centennial, Colorado. Manley's love for all things automotive guided him toward career and technical education classes when he was a high school student. This fall, he will begin his 26th year of teaching. His program was one of the first two certified through Automotive Youth Educational Systems in 1998, and ever since, he has facilitated ongoing apprenticeships with local industry partners. Prior to accepting his current position, Manley had a career as a master automobile technician, an experience that fostered his passion for continued learning. He is currently in the final year of a doctoral program focused on leadership for education equity.

**Mike Shallenberger** is an engineering teacher at STEM School Highlands Ranch in Highlands Ranch, Colorado. Shallenberger, a 21-year veteran teacher, discovered a passion for repairing and creating while working as property staff at a youth camp after his high school graduation. Today, Shallenberger fosters connectivity between his students and industry with Career Discovery, a program he designed in partnership with local industry experts to keep his curriculum current, offer tours and facilitate paid internship opportunities. His students have the chance to earn their associate's degree, tuition-free, while still in high school. Students also leave prepared to earn industry certifications in robotics, programming, mechatronics and mechanical design.

### Florida

**Kelli Prescott** teaches agriculture at Lake Placid High School in Lake Placid, Florida. Prescott taught kindergarten for 20 years before joining Lake Placid High School's skilled trades education department five years ago to reshape their agriculture courses. After seeing her children and their friends work largely through worksheets and videos, Prescott was determined to change the program into a hands-on learning lab. Through skills-based and problem-solving curriculum, Prescott has turned the program around to produce experienced graduates who go on to fill needed tradesperson and leadership positions in their small, rural farming community. She also frequently invites industry professionals to speak to students and provides multiple tour and educational experiences in partnership with Florida FFA (formerly known as Future Farmers of America).

**Kyle Thompson** teaches construction at Middleton High School in Tampa, Florida. Thompson has been teaching construction at Middleton High School for the last eight years. Thompson was initially inspired to work in the trades by his grandfather, a union carpenter who taught him how to work with tools at a young age. He carries this passion into the classroom, where his students work through a practical curriculum that prepares

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them for future careers in the industry. All of Thompson's students complete an Occupational Safety and Health Administration 30-hour certification in construction, and work on a variety of independent and group projects so they can better understand how a jobsite functions. Last year, nine of 33 of Thompson's graduating seniors secured placement in the construction industry and have found success and pay raises thanks to certifications earned in Thompson's classes.

### Georgia

**Dave Darden** teaches automotive technology at Cedar Shoals High School in Athens, Georgia. Darden started teaching 10 years ago, following a 35-year career in the automotive, truck and heavy equipment industry. His program is Automotive Service Excellence Education Foundation certified, something that benefits his students as they graduate from high school and matriculate at technical colleges and trade schools. To further aid his students, Darden works with an advisory committee that includes industry partners in the community to offer apprenticeships and project-based learning. He frequently enjoys visits from graduates of the program who come to share their success stories with him and current students.

**Josh Hall** and **Connor Lee Bratton** teach construction and agriculture, respectively, at Statesboro High School in Statesboro, Georgia. They have 30 years' experience in education between them. Hall, who has been teaching construction for one year, previously worked in carpentry and had his own part-time handyman business. In his first year as a construction teacher, Hall's students won a Gold Chapter of Distinction honor from SkillsUSA, a national nonprofit association of trades students. Bratton, who taught science for two decades before branching out to agricultural education three years ago, views his shift to teaching skilled trades as a pivotal moment in his career, one that lets him help students use what they know to solve real-world problems. Both teachers' programs continuously instruct students in employability skills and model classroom practices to mirror future workplaces.

**Nicole Taylor** has taught construction at Warren Technical School in Chamblee, Georgia for 11 years. Prior to taking her current position, she earned a bachelor's degree in building construction technology from Norfolk State University and worked as a superintendent and project manager for two homebuilders. Taylor utilizes the National Center for Construction Education and Research curriculum, offers her students safety certifications, and encourages community service work like restoring and building shelters for Atlanta's unhoused population. A believer in continuously improving her practice, Taylor earned a certification in special education to better serve students. Last year, she was named a teacher of the year for her school, the only career and trades teacher to win the honor.

### Idaho

**Francis Carlson** teaches cabinet making and millwork at Bonners Ferry High School in Bonners Ferry, Idaho. Carlson is a native of Bonners Ferry and a 2011 graduate of the



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high school where she now teaches. She developed a passion for woodworking as a child, and as a teacher, she has established a pathway of four courses to connect students to postsecondary opportunities. After six years of teaching, her program has grown and surpassed her expectations, producing future workers in plumbing, construction, timber and military industries. This year, to overcome COVID-19's hurdle to her usual student tours at local mills and involvement with competitions, Carlson developed career-centered curriculum that guided students through applying for a job, building a resume, and further exploring the cabinet making industry. Carlson was a finalist for the 2019 Prize for Teaching Excellence.

### Indiana

**Chad Sutton** teaches construction trades at Garrett High School in Garrett, Indiana. Sutton started teaching construction trades in 2008, after owning and operating his own construction company with his wife for a decade. Through a special career-oriented academic program, students in the Garrett-Keyser-Butler Community School District start exploring construction and manufacturing as early as fifth grade, selecting career paths in their junior year of high school. Those career paths shape their academic course load—English, math and science are incorporated into construction classes and vice versa, as Sutton is a firm believer in collaborating with colleagues. Sutton's background in the construction industry has also helped facilitate partnerships with more than 50 local businesses, opening the door to career exploration and development of employability skills for his students. Sutton also serves as director of career development for the Garrett-Keyser-Butler Community School District.

**Andrice Tucker** and **Steve Owen** teach automotive service technology at Central Nine Career Center in Greenwood, Indiana. Tucker and Owen have between them more than 40 years of experience in the automotive industry. A former student at Central Nine, Tucker spent 14 years at Firestone before he returned to the school in 2017 as a teacher. Owen has been teaching for six years and is an Automotive Service Excellence Master Technician and an adjunct instructor at Ivy Tech Community College. Tucker and Owen's program is Automotive Service Excellence Education Foundation-certified, and students can earn up to 21 college credits through a dual enrollment program with Ivy Tech. The duo also encourages practical experience and skills in their courses, allowing students to handle orders from local parts stores and customer communications, as well as job shadowing and earning internships at local automotive facilities.

### Maryland

**Wayne Violet** teaches automotive technology at his alma mater, Washington County Technical High School in Hagerstown, Maryland. Violet holds 12 Automotive Service Excellence (ASE) certifications and attends training courses year-round to provide students with a competitive education. Violet's cooperative work program allows students to begin their careers while attending school, including job shadowing and paid

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apprenticeships. His class also runs a used car dealership where students conduct mock inspections, repair cars and compare costs to the book value of a vehicle before its purchase by a community member. Violet supports his students to qualify and pass the nationally recognized Maintenance and Light Repair Entry Level ASE exam. Apprenticeship Maryland is the latest partnership that Violet helped to cultivate, and the program hires automotive students as paid apprentices with the goal of continued employment after graduation. Violet was a finalist for the 2019 Prize for Teaching Excellence.

### Michigan

**Gary Mishica** is a 38-year veteran industrial arts teacher at Hancock High School in Hancock, Michigan. His love of the trades started early, when he and his brothers worked with their father to build their family home. Today, Mishica's students start out learning the basics of safely operating machinery and completing individual projects before advancing to group work and problem-solving using wood and metal, like restoring a 1962 Chevrolet pickup truck, creating copper and steel sculptures, and pursuing school improvement projects. Mishica continues to improve his skills and keep his course up to date by learning from engineering students and professionals in the field. More than half of Mishica's graduating students continue working in the vocational trades after high school.

**Jeff Webb** teaches mechatronics at Southern Michigan Center for Science and Industry in Hudson, Michigan. He is a second-generation skilled tradesman, learning from the success of his father who worked for over 40 years in manufacturing. Webb keeps up to date on the field by regularly expanding his skills—in the last two years alone he received training in working with programmable logic controllers—computers used in manufacturing settings—and tool handling from FANUC, a robotics company. Students in Webb's class build a hovercraft, a hydroponic plant system, and a solar-powered golf cart while receiving coaching for job interviews and resume writing, as well as opportunities to attend tool shows to immerse themselves in the industry. Webb was a finalist for the 2019 Prize for Teaching Excellence as part of a team of three teachers.

**Demetrius Wilson** is an engineering, robotics and mechatronics teacher at Oakland Schools Technical Campus-Northeast (OSTC-NE) in Pontiac, Michigan. Wilson has been an educator for 29 years. In addition to helping students learn computer-aided design, robotics, fluid power, mechanical drive systems and computer numerical control (CNC) programming, Wilson also mentors fellow teachers and coordinates with industry partners to create curriculum. Wilson's mechatronics program allows students to receive articulated credit with numerous postsecondary institutions and to pursue advanced learning through the Michigan Advanced Technician Training Program (MAT2). Within the last seven years, Wilson assisted more than 30 of his students to place into the MAT2 program, resulting in a \$2.5 million-dollar investment in his students. Wilson was a finalist for the 2019 Prize for Teaching Excellence.

### Minnesota

**Ryan Dewey, Scott Frischmon** and **Scott Leffler** teach industrial technology at Chisago Lakes High School in Lindstrom, Minnesota. Their courses cover woodworking, automotive, small engines, computer-aided design, welding, manufacturing and construction. Students in their program can earn college credits while in high school and access opportunities like work-based learning, field trips and mentorships with local tradespeople. These relationships often grow into summer jobs and postsecondary employment opportunities. In the shop, students have rebuilt school buses and fabricated a supermileage vehicle—a car that squeezes hundreds or even thousands of miles to one gallon of fuel—from scratch to race competitively. All three teachers are members of the Minnesota Technology and Engineering Educators Association and Professional Learning Community, where they share best practices with teachers across the state.

### Mississippi

**Robert Caylor** teaches automotive technology at Gulfport High School in Gulfport, Mississippi. Caylor is a National Board Certified Teacher and Automotive Service Excellence-certified Master Technician who began his career as a scientist for the National Oceanic and Atmospheric Association. He changed careers after realizing he made more money and preferred running his own auto repair business. When his auto shop and home were destroyed by Hurricane Katrina, Caylor decided to apply for an open teaching position at his son's high school. Caylor's automotive students work together in teams to master concepts, perform hands-on work, and gain exposure to different subjects. Students can work for hours in a covered tool storage and vehicle work area, not just on cars, but watercraft, engineering projects, or anything that puts their mechanical skills to use. Caylor's students regularly find employment in the Gulfport region, including as automotive technicians and as Freightliner diesel technicians. Caylor was a finalist for the 2019 Prize for Teaching Excellence as part of a team with fellow Gulfport teacher Scott Pfaff.

### Missouri

**Coley Hanes** teaches agriculture at Schuyler R-1 Schools in Queen City, Missouri. A love of agriculture runs deep for Hanes, who grew up on a diversified family farm in southern Iowa before becoming a teacher. A fourth-year educator, Hanes emphasizes student-driven, project-based learning in his classroom, which incorporates animal systems, agri-business, electrification, plumbing, engine mechanics and welding. His students have a record of success, passing certifications, pursuing technical college degrees and starting well-paying careers, crucial in Schuyler County, where average income is well below the poverty line. Hanes teaches both middle school and high school students. He has successfully sent 12 students to the Missouri Welding Institute and all have graduated to explore welding careers in different states or have resettled



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back at Schuyler County to demonstrate their talent at local businesses. Hanes was a finalist for the 2019 Prize for Teaching Excellence

**A.J. Tinker** teaches construction at Salem R-80 High School in Salem. He honed his trades skills starting 20 years ago, as a high school student building a house with his classmates and an inspiring teacher. When that teacher retired, he asked Tinker to take over for him. Today, Tinker's program provides students onsite learning and training to enter the carpenters union, where they can be put on a fast track to journeyman certification. The early start on this pathway has helped Tinker's students secure well-paying jobs. In only its second year, Tinker's construction program has been at or over capacity in enrollment and he is working to expand it.

### New Jersey

**Michael Shephard** teaches automotive at Union County Career and Technical Institute (UCCTI) in Scotch Plains, New Jersey. He has taught at UCCTI for four years. Shephard's students learn how to rebuild engines by running diagnostics and performing repairs. During his time teaching, Shephard has expanded his program to include a third year, during which students fix customer cars. In the shop, Shephard teaches students according to their learning styles, using the Visual, Auditory, Read/Write, Kinesthetic (VARK) method. Upon completion of his program, 90 percent of Shephard's students earn an Automotive Service Excellence certificate.

### New York

**Alfia Anderson** teaches low voltage theory and installation at the High School for Energy and Technology (HSET) in the Bronx, New York. After a 14-year career as an electrician specializing in roadways, bridges and tunnels and an active member of the International Brotherhood of Electrical Workers Local 3, Anderson decided to use her skills to educate a new generation of electricians. Her students begin with low voltage theory, then learn residential, commercial and industrial wiring. They must also complete at least 50 internship hours in the field and learn onsite with local utilities, transit agencies, military divisions, and others. This past semester, a quarter of HSET's students were enrolled in some type of work-based learning, from job shadowing to being an electrician's helper. Anderson is HSET's lead advisor for SkillsUSA, a national nonprofit association of trades students, and their chapter has partnered with the school's National Honor Society chapter to create leadership and community service opportunities for students, such as peer-to-peer tutoring.

**Thomas Aubin** has taught welding at Clinton-Essex-Warren-Washington Board of Cooperative Educational Services (CEWW BOCES) in Plattsburgh, New York for more than 20 years. A graduate of a New York welding program himself, Aubin served in the Navy Reserve as a hull maintenance technician and as a battle tank welder for General Dynamics, providing him a strong foundation to apply to the classroom. Deeply credentialed as an educator, he is an American Welding Society certified welding inspector and instructor, and has accumulated 136 college credits and numerous

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certifications to bring ever-evolving expertise to his students. Despite his school's rural location, Aubin connects students to real-world opportunities by collaborating with businesses in Montreal and local manufacturers like Volvo, Bombardier, Nova Bus and Jeffords Steel. Upon graduation, 85 to 94 percent of Aubin's students pursue further education, enroll in the armed forces or begin a career in the trades. Aubin has been a finalist for the past three years of the Prize for Teaching Excellence.

**Crystal Aukema** teaches agriculture at Marathon High School in Marathon, New York. A 12-year teaching veteran, Aukema draws on her deep relationships in her school's rural community to connect students to opportunities to learn and work in the region's vital agriculture field. Aukema's students learn agriscience, as well as carpentry and other agricultural mechanics, and she has recently added work on a computer numerical control (CNC) router to the curriculum. She started an Agriculture Fair at her school, where students showcase their work to the community and connect to local industry representatives. Aukema runs the school's FFA (formerly known as Future Farmers of America) chapter and works closely with the Marathon FFA alumni group to secure work-based learning, apprenticeship and job opportunities for her students.

**James "Jim" Buck** teaches electrical at Wayne Technical and Career Center in Williamson, New York. After a career as a nationally certified chief electrical inspector, Buck came as a guest speaker to his nephew's high school electrical class and caught the teaching bug. In nearly his 20th year of teaching, Buck offers a robust program in not just electrical theory, safety and wiring, but also training in Category 5 cable—a type of cable used to connect computer networks—fiber optics, first aid, and fork lift use among other skills. Buck also teaches renewable energy technologies, and his school's solar and wind systems were both installed by his students. Each year, his students collaborate with the school's carpentry classes to build a house for the local community.

**David Krawczyk** and **Robert Mroz** teach automotive technology and collision repair at Potter Career and Technical Center in West Seneca, New York. Their program curriculum tracks the highest-quality professional standards and aligns with the local community college, and students begin earning college credit as early as tenth grade. Mroz, a 25-year teaching veteran, is an Inter-Industry Conference on Auto Collision Repair (I-CAR) certified instructor and adjunct professor at two local community colleges, where he also trains new teachers. Mroz and Krawczyk partner with local dealerships and collision repair professionals to connect students to internships and post-graduation jobs. Working in small teams in the classroom, their students rotate through every aspect of auto technology and collision repair, from tire patching to metal inert gas (MIG) welding. Mroz and Krawczyk's students not only earn national automotive certifications in I-CAR, but they also develop maturity and professional skills, from ethics and communications to resume-building and workplace attire.

**Andrew Saweikis** teaches welding at Rockland Board of Cooperative Educational Services Career and Technical Education Center (Rockland BOCES-CTEC) in West Nyack, New York. After developing a love of welding in high school, Saweikis went on to

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earn a degree from Cornell University in Applied Economics and Management. That passion for welding called him back to the trade, and he embarked on a career as a certified union welder. In the workforce, Saweikis “found the most joy” in training others in welding and fabrication skills, and he transitioned to teaching by starting the welding program at Rockland, where he has taught for five years. Saweikis’s curriculum is aligned with the American Welding Society’s certifications, and each year, his students progress from safety protocols all the way through advanced tungsten inert gas (TIG) welding. This year, Saweikis’s students won both a local welding trade show and the national “Rulers of the Flame” competition, receiving \$8,000 in equipment for their shop. Many of Saweikis’s students pursue welding after graduation, with an average of 20 percent continuing their welding education and 30 percent going directly into the welding or construction industry.

**Leif Sorgule** teaches technology, engineering, construction and manufacturing at Peru High School in Peru, New York. Before becoming a teacher 11 years ago, Sorgule earned a bachelor’s degree and a master’s degree in technology education and worked previously as a marine mechanic and carpenter. He is also an adjunct professor at Clinton Community College. At Peru High, Sorgule boosts workplace readiness and skills by modeling his classrooms on working businesses: construction students bid on mini residential construction jobs, robotics classes build scale robotic arms for factory use and engineering students design, build and test scissor lifts. His courses integrate cutting-edge technology with hands-on use of tools, from coding computer numerical control (CNC) machines to metal fabrication, computer-aided design to woodworking.

**Robert Verone** teaches set design construction and stage crew at Lawrence High School in Cedarhurst, New York. Over the past 25 years, Verone has melded his training as a visual artist with a life-long love of creating and building to teach his students to design, build and bring to life performances, school events and construction projects. Drawing on deep regional relationships, Verone has established partnerships with local universities, community organizations and the local stagehand union in Manhattan—his students have even worked on a Broadway production while in high school. Verone emphasizes collaboration in all aspects of his stage crew courses, with small groups of students leading the design, construction, painting, lighting, sound and technology of every production.

### **North Carolina**

**Erik Mortensen** teaches automotive at Watauga High School in Boone, North Carolina. He has been a teacher for two years, after retiring from his 25-year career as a mechanic. An Army veteran, Mortensen assists his students with securing apprenticeships and part-time employment, and has students work alongside master mechanics, service writers and parts managers. Students learn how to perform oil changes, tire repairs and other minor repairs by working on teachers’ cars. By the time his students enter their third semester of the program, they make estimates, order parts and perform repairs on customer cars, all while learning how to build relationships.

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Since Mortensen started teaching, the number of students enrolled in the automotive program has nearly doubled.

### Pennsylvania

**Kent Brady** teaches small engine equipment technology at Dauphin County Technical School in Harrisburg, Pennsylvania. His program is certified by the Equipment and Engine Training Council, which sets industry-based standards for classroom facilities, instructor qualifications and subject matter competencies. Over the course of their studies, Brady's students learn tool technique, electrical theory, troubleshooting, engine building and repair. They also maintain and improve the school grounds, training in the operations and maintenance of commercial landscaping equipment. Brady's students are currently building a mile-long community trail throughout the school property, traversing woods, hills and open fields.

**Brian Diehl** teaches diesel technology at Dauphin County Technical School in Harrisburg, Pennsylvania. Driven by a passion for diesel technology since high school, Diehl brings 14 years of workforce experience to the classroom. Citing the critical importance of staying up to date in the field, he has deepened his technical credentials and obtained his associate's degree in workforce education. Drawing on his relationships in the community, Diehl offers his students field trips, job shadowing and work-based learning opportunities in local business, military, aviation and post-secondary settings. Every year, several local companies bring their vehicles to be serviced by Diehl's classes, burnishing his students' reputation for professional work and underscoring the importance of customer service in a highly technical field.

**Thomas Ritchey** teaches agriculture at Central High School in Martinsburg, Pennsylvania. He has taught agriculture in the Spring Cove school district for 34 years. Growing up on a dairy farm nearby, Ritchey was an active participant in FFA (formerly Future Farmers of America), 4-H and other trades organizations. A summa cum laude graduate of Pennsylvania State University, Ritchey studied agricultural education before taking a job with Cargill and ultimately becoming a teacher, running a four-year program that culminates in a senior project showcased for the school community. Ritchey works to keep his classroom innovative, most recently by working with teachers across Pennsylvania to develop and share online resources for teaching agriculture and connecting with local businesses to further expand that curriculum for his students. He regularly aligns his classes to local demand—teaching more welding as he observes the local market for welding jobs, for example—and encourages community service projects like building picnic tables and constructing calf kennels for farmers.

### Texas

**David Gibson** teaches machining at Caprock High School in Amarillo, Texas. His love for the trades began in his high school machine shop class in 1971. After a career working on aircraft and oil fields, Gibson earned an engineering degree and operated his own manufacturing company. In 2013, wanting to give back, Gibson started teaching

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machining at Caprock High, developing his teaching skills by working with his school's welding teacher and groups like Titans of CNC and pursuing professional development, including completing a University of Texas course that covered distance learning shortly before the COVID-19 pandemic. In Gibson's classroom, students are asked to teach each other and work independently, and even run their own recruitment program for middle-school students. Nine in 10 of Gibson's students pursue further education after high school, whether two- or four-year college or apprenticeships and certifications. Gibson was a finalist for the 2019 Prize for Teaching Excellence.

**John Gunderson** teaches automotive at John Jay High School in San Antonio, Texas. He enrolled in his first automotive class as a senior in high school and immediately took to the trade. Soon, he had convinced his mother—who wanted him to go to college—that the trades could offer a good, stable salary and a career. After a decade as a master technician in the industry, including mentoring young tradespeople, Gunderson decided to become a teacher in 2005, inheriting a neglected shop that he revitalized. His students operate a live shop, working on customer vehicles, sourcing their own parts, explaining repairs to customers and running diagnostics and research, all while dealing with real-world problems like seized bolts and complications from rust. The experience helps Gunderson's students earn higher wages if they choose to enter the trade right after graduation. Local employers recruit from Gunderson's program, and in some cases, former students hire seniors. Gunderson also offers four dual-credit courses and is working to create an automotive certificate program in collaboration with a local college.

**Mindy Howard, Hunter Parrott and Justin Smith** teach agricultural science at Troy High School in Troy, Texas. Their classes prepare students for careers as machinists, welders or agricultural engineers, among other trades pathways. In class, students learn safety and tool basics before advancing to complex projects like building a welding trailer or showcasing furniture at their local county fair, where one pair of students won Grand Champion in tractor restoration. Central Texas, where Troy is located, has a high demand for tradespeople due to its expanding cities and highway construction, allowing students to access opportunities close to home. Within six months of graduation, every student seeking employment can find work.

**Raul Ortega** teaches plumbing at Sam Houston Math, Science and Technology Center in Houston, Texas. A licensed plumber for two decades, Ortega hadn't planned on becoming a teacher until he was invited to observe a class. He decided to succeed the retiring plumbing teacher at Sam Houston eight years ago. His classroom includes simulators of kitchens and bathrooms, where students learn to install fixtures and piping systems before building their own workstations, using lessons from their National Center for Construction Education Research Core curriculum, and pursuing advanced learning in the engineering and architecture of plumbing systems. His students also perform basic plumbing repairs for homeowners in their community and learn directly from local employers, who visit Ortega's classroom regularly to hire graduating seniors.



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## TOOLS FOR SCHOOLS

Eighty percent of Ortega's students receive all three levels of their NCCER credentials after three years in his program, and 90 percent of them graduate high school, higher than the national graduation rate for all students. Half of his graduating seniors enter a plumbing or construction trade upon graduation.

### Utah

**Jay Hales** teaches automotive technology at Riverton High School in Riverton, Utah. After serving in the Army National Guard as a light wheel vehicle mechanic, Hales began taking automotive classes, graduating with a bachelor's degree in technology education. Twenty-one years ago, he joined the staff at Riverton High, then a new school. To keep up to date on industry trends, Hales teaches at a technical college and works summers and weekends in the field. His program offers students opportunities to learn from professionals at ACDelco and Ford. Students also earn college credits while in high school and enjoy unique field trips to the Bonneville Salt Flats, meeting with drivers setting land speed records. Sixty percent of his students enter the field or earn a related postsecondary degree. Hales won the Huntsman Award for teaching excellence in 2012. He is a previous Advisor of the Year for Utah from SkillsUSA, national nonprofit association of trades students.

### Virginia

**Shawn Burns** teaches mechatronics and robotics at Burton Center for Arts and Technology in Roanoke, Virginia. After serving as a Navy machinist for 25 years, Burns retired from the military and earned his bachelor's degree in workforce education and a graduate degree in occupational technical studies. Today, he teaches mechatronics, robotics and manufacturing at Burton Center, a hub for five schools in Roanoke County, and adjuncts at a local community college. His high school students use project-based learning to design, prototype and manufacture products, all while learning collaboration and communication skills. Students can also earn college credit toward a mechatronics certificate or a two-year degree and earn their National Institute for Metalworking Skills credentials. For the past two years, Burns's students have participated in an apprenticeship program—working at three local manufacturing companies, earning apprenticeship credits and making up to \$13 an hour. During the onset of the COVID-19 pandemic this spring, Burns received a grant that will allow him to teach students programming and robotics remotely in the coming year. Despite school closures, Burns also made sure his students were able to receive their certifications.

### Washington

**Eric Morton** teaches a program called Skilled Trades Pre-Apprenticeship at Peninsula High School in Gig Harbor, Washington. Morton's inspiration to become a teacher came from his mother, an educator. After a career running his own business in painting and drywall, Morton completed a teaching certification that allowed him to teach the trades and science, technology, engineering and math (STEM). In 2017, he launched a program called Skilled Trades Pre-Apprenticeship, a course that covers carpentry,

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plumbing, electricity, masonry and finishing and is modeled on the country's oldest, continuously running pre-apprenticeship program. Morton's class also allows students to complete their math requirement for graduation. Industry partners of Morton's program invite students to tour construction sites and fund projects, like a tiny house that Morton's students build for the Low-Income Housing Institute. Every student graduates with five industry-based certifications and the great majority pursue a career in the trades or further education in the trades.

### West Virginia

**Kevin Cornell** teaches automotive technology at Carver Career and Technical Education Center in Charleston, West Virginia. A 15-year industry veteran and an Automotive Service Excellence-certified master technician, Cornell decided to become a teacher in 2003. That year, he reached out to his former high school shop teacher, who told Cornell that trades teaching positions were opening in Kanawha County due to retirements. After earning his bachelor's degree in career and technical education, Cornell entered the classroom, teaching an Automotive Service Excellence-aligned and -certified curriculum. Since then, Cornell has created internship agreements with local dealerships for his students and offers college credits through his program. Advanced students run a live shop working on customer cars and pursue projects with peers in welding and collision repair programs. The majority of Cornell's students are considered "at risk," on a path toward leaving high school without graduating. To support his students, Cornell uses trauma-informed teaching practices based on the Adverse Childhood Experiences study. His students graduate at rates near 100 percent. Cornell is the first finalist for the Prize for Teaching Excellence from West Virginia.

### Wisconsin

**Jay Abitz** teaches automotive and collision repair at Freedom High School in Freedom, Wisconsin. Born and raised in Freedom, a town of 5,000 residents near Green Bay, Abitz took over the automotive program at Freedom High from his father, a 35-year veteran auto teacher. After a successful high school trades career—landing in the top 10 at SkillsUSA's national competition in collision repair—Abitz earned Inter-Industry Conference on Auto Collision Repair (I-CAR) certifications, a bachelor's degree in education from the University of Wisconsin-Stout and a master's degree from Cardinal Stritch University. In Abitz's classroom, students work on cars for paying customers while building museum-quality pieces like the Mohs Opera Sedan and a 1937 Oldsmobile from the chassis up. Students also design and fabricate their own parts, including body mounts, steering shafts, running boards, engine cradles and more. Abitz encourages students to join a youth apprenticeship program in a field of their choice, so they can experience work-based learning and build relationships with an employer. After graduation, the majority of Abitz's students enter the automotive or manufacturing fields, join family businesses in Freedom or pursue postsecondary education.