

CTE Monthly

April 2014

CTE Quick Facts

Did you know?

- ▶ About 50 percent of all STEM jobs are open to workers with less than a bachelor's degree, and 30 percent of today's STEM-intensive jobs are in blue collar fields.ⁱ
- ▶ In Malaysia, Turkey and the Shanghai area of China, where more than one in eight students are enrolled in a vocational program, these students demonstrate better problem-solving skills in comparison to students with comparable math, reading and science scores in general education programs.ⁱⁱ

CTE State Policies in 2013

2013 was a major year for CTE! All but three states had legislative or regulatory action in the 2013 calendar year that impacted one or more elements of CTE. In an effort to capture information on these state policy changes, ACTE and NASDCTEc partnered to compile and release a new research paper, [State Policies Impacting CTE: 2013 Year in Review](#).

This paper provides both an overview and a state-by-state review of CTE-related policies that were enacted in 2013, including a chart showing key trends across the country.

ⁱ Rothwell, [The Hidden STEM Economy](#), Metropolitan Policy Program at Brookings, 2013.

ⁱⁱ OECD, [PISA 2012 Results: Creative Problem Solving: Students' skills in tackling real-life problems \(Volume V\)](#), 2014.

ⁱⁱⁱ Georgetown Center on Education and the Workforce, NRCCTE and NASDCTEc, [Career Clusters: Forecasting demand for high school through college jobs: 2008-2018](#), 2011.

^{iv} Ibid.

^v Ibid.

^{vi} Burning Glass Technologies, [Real-Time Insight Into The Market For Entry-Level STEM Jobs](#).

^{vii} Wheaton High school [website](#).

Career Spotlight



Despite the immense amount of attention that Science, Technology, Engineering and Mathematics (STEM) occupations have received from policymakers in recent years, the STEM Career Cluster[®] is among one of the smallest occupational areas within the 16 Career Cluster framework. Nonetheless, employment in this vitally important cluster is projected to grow by 9 percent between 2008 and 2018.ⁱⁱⁱ This projected growth is even higher among specialty occupations such as petroleum engineers (18 percent), industrial engineers (14 percent) and mathematicians (22 percent).^{iv} Advances in technology and other innovations within the U.S. economy will likely keep demand for these highly skilled positions strong over the coming years.

As the skill requirements for these careers continue to expand, so too has the demand for additional education in preparation for these critically important occupations. By the year 2018, 90 percent of the occupations in this Career Cluster will require at least some postsecondary education.^v However, wage premiums for entry-level STEM positions make these additional educational requirements well worth the investment—those who achieve at least a B.A. or higher in a STEM field can expect to earn 26 percent more than their non-STEM peers at the start of their careers.^{vi}

[Wheaton High School](#), located in Silver Spring, Maryland, offers a promising array of pathways for its students to enter into this dynamic Career Cluster.^{vii} Wheaton's Academy of Engineering (AOE), a state-certified Project Lead the Way Program, is designed for students who plan to enter into advanced careers in engineering. A rigorous program of study, beginning in the ninth grade, offers introductory engineering courses which later progress into more advanced courses providing greater specialization.

Wheaton's Biosciences Academy, another Project Lead the Way Program, provides students the opportunity to pursue a number of promising pathways in programs such as biotechnology and biomedicine. Both of these academies, along with others at the school, culminate in a "Capstone Course," which requires students to apply their coursework to real-world situations. Students work closely with industry professionals who provide mentorship opportunities before presenting their projects at the end of each academic year.

Perkins Funding Letter Gets Big Support in House and Senate

ACTE applauds the 94 members of the House of Representatives and 25 Senators who have helped to champion federal funding for CTE. In separate letters to House and Senate Labor, Health and Human Services, and Education Appropriations Subcommittees, this large, bipartisan coalition of Members of Congress urged a strong federal investment in Perkins as part of the Fiscal Year (FY) 2015 appropriations bills.

ACTE thanks Reps. Glenn Thompson (R-PA) and Jim Langevin (D-RI), as well as Sens. Richard Blumenthal (D-CT), Tammy Baldwin (D-WI) and Tim Kaine (D-VA) for leading these efforts in their respective chambers.

School Spotlight

Oklahoma CareerTech and the Cyber Security Education Consortium

[Oklahoma's CareerTech system](#), as a partner in the multi-state [Cyber Security Education Consortium](#), offers a training program in information and cybersecurity. The program consists of courses in principles of information assurance, network security, enterprise security management, secure electronic commerce, digital forensics and supervisory control and data acquisition systems security.

The Oklahoma Department of Career and Technology Education serves as the lead institution for Oklahoma in partnership with six technology centers and three community colleges; those six technology centers received designation as National Centers of Academic Excellence in Information Assurance 2-Year Education from the National Security Agency and the Department of Homeland Security in 2012. The consortium also includes partners in Arkansas, Colorado, Kansas, Louisiana, Missouri, Tennessee and Texas, as well as the University of Tulsa.

The curriculum is aligned with National Information Assurance Education and Training Program standards, and students can seek certification from the Committee on National Security Systems. The Department of Career and Technology Education has also created alignment with community colleges and the University of Tulsa to help students pursue associate and bachelor's degrees.^{viii}



Katrina Gellhaus learns to program a PLC used to control a SCADA system. Photo courtesy of Oklahoma CareerTech.

Student Spotlight

After graduating from Burns High School in North Carolina, Brandon Bridges enrolled in [Cleveland Community College](#) because it offered a flexible, affordable education in computer security and networking. Bridges learned about basic and advanced networking at the college's Cisco Academy, which he found very beneficial when entering the workforce. In addition, Bridges appreciated his instructors' extensive experience working in IT and the strong relationships they built with students.



Photo courtesy of Cleveland Community College.

Bridges gained valuable experience during his education as an intern at Pharr Technologies. After graduating with an Associate of Applied Science degree in Networking Technology and Information Systems Security Technology, as well as certificates in Cisco Networking, Computer Training Support and Information Systems Security, Bridges began a full-time position with Pharr.

He says, "I know without the knowledge I learned in classes, from handling various networking details, including making and running cables and dealing with different IP addresses, I would not have been prepared in the working environment."^{ix}

State of the State Speeches Highlight CTE; Youth CareerConnect Winners

Republican and Democratic governors in Tennessee, South Dakota, Delaware, Georgia, Idaho, Wisconsin and Utah have presented [budget requests](#) to their state legislatures that include increases in state funding for CTE and related initiatives. Governors also announced new programs in CTE, including:

- A new program to foster manufacturing education in Delaware
- The expansion of CTE curricula and partnerships in Indiana
- The expansion of Advanced Career Programs, an integrated CTE-academic pathway developed by the Southern Regional Education Board, in West Virginia
- An effort to partner manufacturing firms with classrooms in New Hampshire

In addition, the Obama Administration has announced the [24 winners of the Youth CareerConnect grant initiative](#), totaling \$107 million.^x Winners include programs that feature awarding college credit for CTE coursework, career counseling, industry certifications and paid work experience for students. Many of these program elements are well established as key components of high-quality CTE programs. While 275 grant applications were submitted, only 24 were funded, pointing to the huge unmet fiscal need within CTE.

viii OK CareerTech [website](#); Gupta et al., [21st-century Career and Technical Education Pathways On the Rise](#), ASU Morrison Institute for Public Policy, 2013; additional information from OK CareerTech staff.

ix Cleveland Community College, [Success Story: Brandon Bridges](#).

x DOL, [Youth CareerConnect Awards Announced](#), April 7, 2014.



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This newsletter is a collaborative publication of the Association for Career and Technical Education and the National Association of State Directors of Career Technical Education Consortium. It aims to keep Congress informed about CTE events, data, best practices and student success stories.