



# CTE WORKS!



## CTE Works for High School Students

- CTE reduces dropout and increases on-time graduation, particularly CTE courses taken in 11th and 12th grades. (Gottfried and Plasman, "Linking the Timing of CTE Coursetaking With High School Dropout and College-going Behavior," *American Educational Research Journal*, 2017)
- The more students participate in career and technical student organizations, the higher their academic motivation, academic engagement, grades, career self-efficacy, college aspirations and employability skills. (Alfeld et al., *Looking Inside the Black Box: The Value Added by Career and Technical Student Organizations to Students' High School Experience*, National Research Center for CTE, 2007)
- Students attending CTE high schools have demonstrated higher rates of on-time graduation and credit accumulation and a greater likelihood of successfully finishing a college preparatory mathematics sequence. (Neild et al., *The Academic Impacts of Career and Technical Schools: A Case Study of a Large Urban School District*, 2013)
- Eighty percent of students taking a college preparatory academic curriculum with rigorous CTE met college and career readiness goals, compared to only 63 percent of students taking the same academic core who did not experience rigorous CTE. (Southern Regional Education Board, *High Schools That Work 2012 Assessment*)
- CTE students were significantly more likely than their non-CTE counterparts to report developing problem-solving, project completion, research, math, college application, work-related, communication, time management and critical-thinking skills during high school. The Society for Human Resource Management (SHRM) has identified employer demand for many of these skills. (Lekes et al., *CTE Pathway Programs, Academic Performance and the Transition to College and Career*, National Research Center for CTE, 2007; SHRM and WSJ.com/Careers, *Critical Skills Needs and Resources for the Changing Workforce*, 2008)
- The average high school graduation rate in 2012 for CTE concentrators was 93 percent, compared to the national adjusted cohort graduation rate of 80 percent. (Office of Career, Technical and Adult Education data; Civic Enterprises et al., *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic: Annual Update*, 2014)
- Work-based learning helps students apply and extend classroom learning, gain motivation and understanding, explore careers and develop critical understanding of the work environment. (Alfeld et al., *Work-Based Learning Opportunities for High School Students*, National Research Center for CTE, 2013)
- Students who take advanced CTE courses in high school see higher earnings, including a 3.2 percent wage increase for CTE concentrators. (Kreisman and Stange, *Vocational and Career Tech Education in American High Schools: The Value of Depth Over Breadth*, National Bureau of Economic Research, 2017)
- Students in programs that blend basic skills and occupational training are far more likely than similar adult students to improve basic skills and earn college-level credits. (Jenkins et al., *Educational*

## CTE Works for Postsecondary Students and Adults

*Outcomes of I-BEST, Washington State Community and Technical College System's Integrated Basic Education and Skills Training Program: Findings from a Multivariate Analysis, CCRC Working Paper No. 16, 2009)*

- Participation in skills-training programs has increased wages and earnings, raised the probability and consistency of employment and led to work in higher-quality jobs. (Maguire et al., *Job Training That Works: Findings from the Sectoral Employment Impact Study*, Sectoral Employment Initiative: Public/Private Ventures (7), May 2009)
- Forty-three percent of young workers with licenses and certificates earn more than those with an associate degree; 27 percent of young workers with licenses and certificates earn more than those with a bachelor's degree; and 31 percent of young workers with associate degrees earn more than those with a bachelor's degree. (Georgetown University Center on Education and the Workforce, *Valuing Certificates*, Presentation, 2009)
- Postsecondary CTE concentrators achieve significantly higher earnings than those who majored in academic fields, particularly those employed in an industry related to their program of study. (Jacobson and Mokher, *Florida Study of Career and Technical Education*, 2014, as cited in the 2014 National Assessment of CTE Final Report)
- About 50 percent of all STEM jobs are open to workers with less than a bachelor's degree. (Rothwell, *The Hidden STEM Economy*, 2013)
- Shorter term credentials can be at least as valuable as bachelor's degrees. According to research in Texas, Colorado and Virginia, graduates with technical or applied science associate degrees out-earn bachelor's degree holders by \$2,000 to \$11,000. This is a high return on a modest investment—average tuition and fees for U.S. public two-year institutions are less than half of tuition and fees for four-year colleges. (Schneider, *Higher Education Pays*, College Measures, 2013; College Board, *Average Published Undergraduate Charges by Sector*, 2012–13)
- Skilled trades workers, accounting and finance staff, nurses and technicians are some of the top jobs employers are having trouble filling in the U.S., and CTE plays a critical role in training workers in these areas. (Manpower Group, *Talent Shortage Survey Results*, 2016-17)
- Almost half of talent recruiters at Fortune 1000 companies report trouble finding qualified candidates with two-year STEM degrees. (Bayer Corporation, *Facts of Science Education XVI*, 2013)
- More than 80 percent of manufacturers report that talent shortages will impact their ability to meet customer demand. CTE plays a vital role in helping American businesses close the skills gap by building a competitive workforce for the 21st century. (Deloitte and The Manufacturing Institute, *The Skills Gap in US Manufacturing: 2015-2025 Outlook*, 2015)
- Middle-skill jobs, jobs that require education and training beyond high school but less than a bachelor's degree, are a significant part of the economy. Of the 55 million job openings created by 2020, 30 percent will require some college or a two-year associate degree. (Carnevale et al., *Recovery: Job Growth and Education Requirements Through 2020*, Georgetown University Center on Education and the Workforce, 2013)
- Communities across the nation benefit from CTE. Oklahoma's economy reaps a net benefit of \$3.5 billion annually from graduates of the CareerTech System. Wisconsin taxpayers receive \$12.20 in benefits for every dollar invested in the technical college system. Students who attended Iowa Community Colleges in Fiscal Year 2014-15 are expected to grow the state's economy by almost \$15 billion over the course of their working lives. (OKCareerTech, PoweredbyOKCareerTech.com; Wisconsin Technical College System, *The Technical College Effect*, 2014; Iowa Department of Education, *The Economic Value of Iowa's Community Colleges*, February 2017)

## CTE Works for Businesses and the Economy