Encourage Students To Study and Pursue Careers in STEM Fields

Sustained excellence in the fields of science, technology, engineering and mathematics (STEM) is the hallmark of an innovative and dynamic economy. If the United States is going to compete in the modern global economy, its education and workforce training systems must prepare more students for STEM and STEM-related careers. Although STEM occupations demand extensive postsecondary education and training that ranges from associate degrees to advanced degrees to workforce certifications, they also offer attractive career opportunities. For instance, STEM fields tend to have higher job growth rates, lower unemployment rates and higher starting salaries than non-STEM fields.

Despite the importance of STEM occupations to U.S. economic competitiveness and their attractiveness as a career pathway, far too many U.S. students find STEM learning uninspiring. In fact, more than 80 percent of U.S. high school students are either uninterested or nonproficient in STEM subjects — suggesting that millions of U.S. students (and their parents) are failing to see the relevance and opportunity that a STEM education can bring to their lives and the nation’s future.

As a result, the United States continues to lag behind its peers in terms of STEM education. Although the number of U.S. college graduates with degrees in most STEM-related fields has increased, the growth rates in many competitor nations have been far higher. In addition, U.S. students are falling behind their peers in terms of performance on STEM-related tests. For instance, on international tests of 15-year-old students, the United States ranks 17th in science performance and 25th in mathematics among 34 Organisation for Economic Co-operation and Development countries. Finally, many high school graduates are ill prepared to succeed in STEM subjects at the collegiate level — indeed, more than half of high school graduates are not prepared for college-level math, and 69 percent of high school graduates are not prepared for college-level science.

Policy Solutions

The Business Roundtable supports improving STEM learning for all students and encouraging more students to study and pursue careers in critical STEM fields as pathways toward developing a more skilled, prepared workforce. The following policy solutions are intended to help improve STEM instruction and encourage students to pursue STEM-related careers:
(1) **Adopt the Next Generation Science Standards**: States should adopt the Next Generation Science Standards, which are designed to provide all K–12 students with an internationally benchmarked science education. State and local policymakers and educators should also begin making the necessary changes to support successful implementation of these standards.

(2) **Improve STEM Instruction at All Levels**: State policymakers and educators should strengthen preparation and professional development programs using research-based practices to improve STEM instruction at all levels.

(3) **Increase Exposure to STEM Careers**: National, state and local programs should introduce students early and often to the many career opportunities that require STEM skills, which can provide students with real-life examples of and experiences in the different ways that STEM skills are used in jobs of all kinds, at all wage levels.

**A CEO Perspective on STEM Education and Careers**

“There is an alarming shortage of young people pursuing careers in science and engineering — particularly women and people of color.”

— Ursula Burns, Chairman & CEO, Xerox Corporation

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3. For students graduating from college in 2013, seven of the top 10 starting salaries were in different fields of engineering, and all 10 were STEM majors or majors that require strong math skills. Available at http://www.naceweb.org/uploadedFiles/NACEWeb/Research/Salary_Survey/Reports/salary-survey-april-2013-executive-summary.pdf.


6. Organisation for Economic Co-operation and Development (2010). *PISA 2009 Results: Executive Summary*. Note that rankings are for the 34 countries that are members of the Organisation for Economic Co-operation and Development, not for all 65 countries that participated in PISA 2009.


8. In an August 2012 survey, approximately 72 percent of Business Roundtable member companies cited improving STEM education as their top priority for education-related philanthropy (106/211 members responded).