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America's Community Colleges

IN THE 2009 AMERICAN GRADUATION INITIATIVE, PRESIDENT OBAMA ENTHUSIASTICALLY HIGHLIGHTED the importance of community colleges—publicly funded 2-year institutions—for meeting the projected growth in jobs requiring a college degree. Increasing the number of college graduates earning science- and math-related degrees depends on these institutions increasing workforce preparation through science, technology, engineering, and mathematics (STEM) education. Community colleges are accessible, affordable, diverse, and flexible, and thus well positioned to meet this need. However, the current demand for courses far exceeds capacity,* thereby calling for more government, business, and local resources to support these institutions.

More than 1100 community colleges enroll about 44% of all undergraduate students in U.S. higher education. Responding to a wide range of student readiness, community colleges offer a wealth of services, including academic and career counseling, tutoring, and developmental education. Faculty are selected, tenured, and otherwise rewarded on the basis of pedagogical expertise and classroom effectiveness; thus, the teaching function takes center stage. My own institution, Foothill College, currently has more than 16,000 students, aged 16 to over 90. The nominal time to obtain our “associate degree” is 2 years, but many students work full time, making the mean time to graduation 4 years. Community college programs enable students to either enter the workforce directly or transfer to a 4-year college to complete a bachelor’s degree. Each year, Foothill College sends more than 300 students to the University of California alone, many pursuing STEM degrees. As to affordability, in 2011 community college students paid an average of \$2713 a year in tuition and fees, as compared to an average of \$7605 at U.S. 4-year public universities.

Community colleges can play a pivotal role in preparing underrepresented students for STEM careers. People of color will make up 45% of the working-age population in the United States by 2030, up from 18% in 1980. According to the U.S. National Academies, they “embody a vastly underused resource and a lost opportunity for meeting our nation’s technology needs.”† Community colleges currently enroll more than 50% of undergraduate Hispanic students and about 45% of African American and Asian undergraduates. Among those currently holding a baccalaureate or master’s degree in science or engineering, 55% of Hispanics and 50% of African Americans attended a community college.‡ For immigrants pursuing the American dream, community colleges are a vital resource. They provide English language instruction, citizenship preparation, job skills, and assistance in navigating American bureaucracy. The Community College Consortium for Immigrant Education was established to highlight immigrant education issues and share models from leading institutions such as the City College of San Francisco, Miami Dade Community College, and Westchester Community College.

There is a flexibility in community college curricula that allows prompt responses to workforce needs. For example, Northern Virginia Community College has developed the SySTEMic Solutions model, in collaboration with local corporations including Micron Technology and Lockheed Martin, to increase the availability of skilled workers. Part-time employment and internships serve the needs of employers while giving students opportunities for hands-on learning.

Community colleges have emerged as essential national players in the evolving landscape of STEM education, worthy of increased public and private support. To ensure a bright future, America needs to invest more in these critical resources.

— Judy C. Miner

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*G. R. Boggs, *Science* **329**, 1151 (2010). †*Minority Participation: America’s Science and Technology Talent at the Crossroads* (National Academies Press, Washington, DC, 2011). ‡P. Bradley, *Community College Week* (1 February 2011).

