



Highlights of [GAO-06-702T](#), a report to Committee on Education and the Workforce, House of Representatives

Why GAO Did This Study

The United States is a world leader in scientific and technological innovation. To help maintain this advantage, the federal government has spent billions of dollars on education programs in the science, technology, engineering, and mathematics (STEM) fields for many years. However, concerns have been raised about the nation's ability to maintain its global technological competitive advantage in the future.

This testimony is based on our October 2005 report and presents information on (1) trends in degree attainment in STEM- and non-STEM-related fields and factors that may influence these trends, (2) trends in the levels of employment in STEM- and non-STEM-related fields and factors that may influence these trends, and (3) federal education programs intended to support the study of and employment in STEM-related fields. For this report, we analyzed survey responses from 13 civilian federal departments and agencies; analyzed data from the Departments of Education and Labor; interviewed educators, federal agency officials, and representatives from education associations and organizations; and interviewed students.

www.gao.gov/cgi-bin/getrpt?GAO-06-702T.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Cornelia M. Ashby at (202) 512-7215 or AshbyC@gao.gov.

HIGHER EDUCATION

Science, Technology, Engineering, and Mathematics Trends and the Role of Federal Programs

What GAO Found

While postsecondary enrollment has increased over the past decade, the proportion of students obtaining degrees in STEM fields has fallen. In academic year 1994–1995, about 519,000 students (32 percent) obtained STEM degrees. About 578,000 students obtained STEM degrees in academic year 2003–2004, accounting for 27 percent of degrees awarded. Despite increases in enrollment and degree attainment by women and minorities at the graduate level, the number of graduate degrees conferred fell in several STEM-related fields from academic year 1994–1995 to academic year 2003–2004. College and university officials and students most often cited subpar teacher quality and poor high school preparation as factors that discouraged the pursuit of STEM degrees. Suggestions to encourage more enrollment in STEM fields include increased outreach and mentoring.

The past decade has seen an increase in STEM employees, particularly in mathematics and computer science. From 1994 to 2003, employment in STEM fields increased by an estimated 23 percent, compared to 17 percent in non-STEM fields. Mathematics and computer science showed the highest increase in STEM-related employment, and employment in science-related fields increased as well. However, in certain STEM fields, including engineering, the number of employees did not increase significantly. Further, while the estimated number of women, African-Americans, and Hispanic-Americans employed in STEM fields increased, women and minorities remained underrepresented relative to their numbers in the civilian labor force. The number of foreign workers employed in the United States has fluctuated, experiencing declines in 2002 and 2003. Key factors affecting STEM employment decisions include mentoring for women and minorities and opportunities abroad for foreign employees.

Thirteen federal civilian agencies spent approximately \$2.8 billion in fiscal year 2004 to fund over 200 programs designed to increase the numbers of students in STEM fields and employees in STEM occupations and to improve related educational programs. The funding reported for individual STEM education programs varied significantly, and programs most commonly provided financial support to students or infrastructure support to institutions. However, only half of these programs had been evaluated or had evaluations underway, and coordination among STEM education programs was limited. It is important to know the extent to which existing STEM education programs target the right people and the right areas and make the best use of available resources. Since our report was issued in October 2005, Congress, in addition to establishing new grants to encourage students from low-income families to enroll in STEM fields, established an Academic Competitiveness Council to identify, evaluate, coordinate, and improve federal STEM programs.