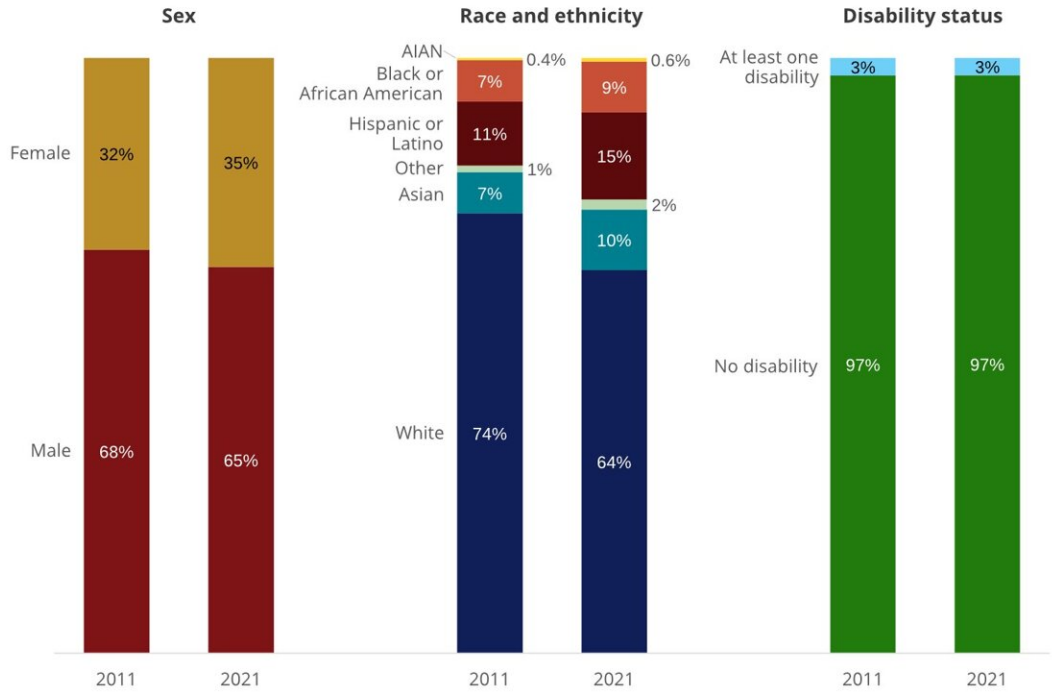
New report on diversity trends in STEM workforce and education

January 30 2023

National Center for Science and Engineering Statistics | NSF 23-315

Figure 2-3

Characteristics of the STEM workforce ages 18–74: 2011 and 2021



AIAN = American Indian or Alaska Native; STEM = science, technology, engineering, and mathematics.

Note(s):
Civilian noninstitutionalized population plus armed forces living off post or with their families on post. Hispanic or Latino may be any race; race categories exclude Hispanic origin. Other includes Native Hawaiian and Other Pacific Islander and more than one race. Respondents can report more than one disability. Those who reported difficulty with one or more functionalities were classified as having a disability. Due to rounding, percentages may not sum to 100 or subgroup totals.

Source(s):
Census Bureau, Current Population Survey, Annual Social and Economic Supplement.

Characteristics of the U.S. STEM workforce, from data presented in the 2023 NSF NCSES Report Diversity and STEM. Credit: NSF NCSES

Today, the National Center for Science and Engineering Statistics, or NCSES—part of the U.S. National Science Foundation—released *Diversity and STEM: Women, Minorities, and Persons with Disabilities 2023*, the federal government's latest and most complete analysis of diversity trends in STEM employment and education.

"Diversity is America's unique advantage in science and technology," said NSF Director Sethuraman Panchanathan. "Our global leadership depends upon diversity, leveraging different backgrounds, experiences, and points of view to bring unique insights to problem solving and discovery. The *Diversity and STEM* report provides objective, reliable data on where our nation has made progress towards access and equity in STEM education and careers, as well as where we must do more."

The new report shows more women, as well as Black, Hispanic, American Indian, and Alaska Native people collectively, worked in STEM jobs over the past decade, diversifying that workforce, and are earning more degrees in science and engineering fields at all levels compared to previous years.

However, those groups—as well as people with disabilities—broadly remain underrepresented in science, technology, engineering and mathematics when compared to their overall distribution in the U.S. population, reflecting the larger equity challenges our nation faces.

In addition to bringing a wide range of ideas, creativity and skills to bear on innovation and discovery, equal access to the STEM workforce is important because those jobs are associated with higher wages and lower

unemployment rates—regardless of sex, race, ethnicity or disability status.

Formerly called *Women, Minorities, and Persons with Disabilities in Science and Engineering*, the *Diversity and STEM* report is the first in this series to look beyond careers that require a bachelor's degree, an educational milestone that reflects only half of the STEM workforce.

"A highlight of this year's edition of *Diversity and STEM* is the use of a broader definition of 'STEM work', providing a better understanding of STEM representation by different demographic groups," said NCSES Director Emilda B. Rivers. "For the first time, we count in STEM statistics all groups whose work requires a high level of technical knowledge, regardless of their degree."

The report suggests women and Hispanics in particular have made significant progress over the past decade, both in terms of increased representation in the STEM workforce and in their participation in higher education. However, those broad patterns are not universal across all STEM occupations and fields of study.

For example, women make up much smaller proportions of the college-educated workforce in the computer and mathematical sciences, biological sciences, physical sciences and engineering compared to the social sciences. Separately, underrepresented minorities make up a third of the workforce in STEM jobs that typically do not require a college degree for entry. However, those jobs tend to have the lowest salaries and highest unemployment in STEM.

About 3% of the STEM workforce are people with disabilities. Although the number of STEM workers with at least one disability increased since 2011, their representation in the STEM workforce has remained unchanged from a decade ago.

NSF first started publishing data on underrepresented groups in STEM in 1977. In 1980, Congress mandated this report be produced every two years, and the report began incorporating people with disabilities in 1994. Today, the STEM workforce includes 12.3 million women (35% of the STEM workforce), 8.3 million members of underrepresented minority groups (24%), and 1 million people with disabilities (3%).

Among the report's findings:

- Women earned half of science and engineering bachelor's degrees (50%) and associates degrees (49%). Women represented about one-third of the STEM workforce (35%), and their wages were consistently lower than men's.
- Women, as well as Hispanic and Black students, continued to pursue advanced degrees in science and engineering fields in increasing numbers during the COVID-19 pandemic.

- Collectively, Hispanic, Black, American Indian, and Alaska Native people made up 31% of the U.S. population, but 24% of the STEM workforce in 2021. They were more likely to work in STEM occupations that require technical skills or certification than in those that require a bachelor's degree or higher education.
- Hispanic, Black, American Indian, and Alaska Native STEM workers have lower median earnings than white or Asian STEM workers.
- Hispanic students have made significant advances in earning associate's degrees in science and engineering fields. The total number of those degrees awarded to Hispanic students tripled between 2011 and 2020, bringing their share of associate's degrees awarded in science and engineering fields to 32%. Nearly two-thirds (63%) of Hispanics in STEM are in jobs that do not require a four-year degree, making up nearly one-fourth of those workers (24%).

- Unemployment rates in 2021 for STEM workers who were Black (6.6%) and Hispanic (5.7%) were higher than for white (2.9%) and Asian (2.3%) workers.
- Bachelor's degrees in science and engineering fields earned by American Indian and Alaska Native students declined between 2011 and 2020, both in number and as a proportion of all degrees awarded.

- Among workers with at least one disability, 21% worked in STEM occupations in 2021, and 3% of the STEM workforce were people with disabilities.
- Among science and engineering doctorate recipients in 2021, 11% reported having at least one disability.

More information: Report: ncses.nsf.gov/pubs/nsf23315/report

Provided by National Science Foundation

Citation: New report on diversity trends in STEM workforce and education (2023, January 30) retrieved 26 April 2024 from
https://phys.org/news/2023-01-diversity-trends-stem-workforce.html