

118TH CONGRESS
2D SESSION

S. 4028

To increase the participation of historically underrepresented demographic groups in science, technology, engineering, and mathematics education and industry.

IN THE SENATE OF THE UNITED STATES

MARCH 21, 2024

Ms. HIRONO (for herself, Mr. PADILLA, Mr. VAN HOLLEN, Mr. DURBIN, Ms. KLOBUCHAR, Mr. CASEY, Ms. CORTEZ MASTO, Ms. DUCKWORTH, Ms. BUTLER, Mr. BROWN, and Ms. ROSEN) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

A BILL

To increase the participation of historically underrepresented demographic groups in science, technology, engineering, and mathematics education and industry.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Women and Underrep-
5 resented Minorities in STEM Booster Act of 2024”.

1 **SEC. 2. GRANT PROGRAM TO INCREASE THE PARTICIPA-**
2 **TION OF WOMEN AND UNDERREPRESENTED**
3 **MINORITIES IN STEM FIELDS.**

4 (a) FINDINGS.—Congress finds the following:

5 (1) According to the National Academies of
6 Sciences, Engineering, and Medicine (NASEM),
7 science, technology, engineering, and math (referred
8 to in this Act as “STEM”) education is critical to
9 ensuring the United States maintains a diverse and
10 competitive workforce.

11 (2) According to NASEM and the National In-
12 stitutes of Health (NIH), diverse teams of STEM
13 professionals innovate at higher rates than teams
14 composed of individuals with similar identities or
15 backgrounds.

16 (3) According to the National Science Founda-
17 tion (NSF), in 2020 women earned only 43 percent
18 of bachelor’s degrees in physical and earth sciences,
19 26 percent in mathematical and computer sciences,
20 and 24 percent in engineering. By contrast, women
21 earned 66 percent of bachelor’s degrees in social and
22 behavioral sciences and 64 percent in agricultural
23 and biological sciences.

24 (4) According to the NSF, STEM degree pro-
25 grams that are currently underrepresented by
26 women also receive greater Federal financial support

1 for education and living expenses, compared with de-
2 gree programs with disproportionately high female
3 enrollment. Thus, male graduate students receive
4 more Federal financial support than women.

5 (5) According to the NSF, while Black or Afri-
6 can Americans made up 14 percent of the population
7 of the United States (ages 18–34 years) in 2021,
8 only 9 percent of bachelor’s degree recipients in
9 science and engineering were awarded to that same
10 racial group. Moreover, while 22 percent of the pop-
11 ulation of the United States (ages 18–34) were His-
12 panic or Latino, they comprised only 17 percent of
13 science and engineering bachelor’s degrees awarded
14 that year.

15 (6) According to the National Center for Edu-
16 cation Statistics (NCES), only 0.3 percent of bach-
17 elors’ degrees and less than 0.2 percent of masters
18 and doctoral degrees in STEM were awarded to
19 American Indian and Alaska Native students from
20 2020 through 2021, less than half their representa-
21 tion of the total population of the United States in
22 2021.

23 (7) According to the U.S. Census Bureau, from
24 2017 through 2021, less than 5 percent of women
25 who worked full-time in the United States were em-

1 employed in computer, engineering, or science occupa-
2 tions while more than 10 percent of men who
3 worked full-time in the United States were employed
4 in computer, engineering, or science occupations.
5 Only 4 percent of Black or African Americans who
6 worked full-time in the United States were employed
7 in computer, engineering, or science occupations and
8 only 5 percent of American Indian and Alaska Na-
9 tives who worked full-time in the United States were
10 employed in computer, engineering, or science occu-
11 pations, while the national average of the full-time
12 workforce in the United States who were employed
13 in computer, engineering, or science occupations was
14 8 percent.

15 (8) According to the National Center for
16 Science and Engineering Statistics (NCSES),
17 women leave STEM fields at much higher rates than
18 men. In 2021, while 79 percent of women awarded
19 STEM degrees in 2020 were employed in a STEM
20 occupation, only 53 percent of women remained in
21 STEM within 5 years of earning their highest de-
22 gree, and only 44 percent remained after 10 years.
23 By contrast, 86 percent of men who had earned
24 STEM degrees in 2020 were employed in STEM oc-
25 cupations, 73 percent of men remained in STEM

1 within 5 years of earning their degree, and 70 per-
2 cent of men remained in STEM after 10 years.

3 (9) According to NCSES, STEM retention is
4 even lower for women of color: in 2021, only 50 per-
5 cent of Black women and 44 percent of Hispanic
6 women who received STEM degrees in 2020 were
7 employed in a STEM occupation, compared with 82
8 percent of white, non-Hispanic women. Less than 30
9 percent of Black or Hispanic women remained in
10 STEM after 10 years, compared with 52 percent of
11 white, non-Hispanic women.

12 (10) According to NCSES, STEM retention
13 rates for Black or Hispanic men are higher than for
14 women of any race but lower than white, non-His-
15 panic men. In 2021, 87 percent of Black or His-
16 panic men who received STEM degrees in 2020 were
17 employed in a STEM occupation, compared with 93
18 percent of white, non-Hispanic men. Only 51 percent
19 of Black and 61 percent of Hispanic men remained
20 in STEM after 10 years, compared with 74 percent
21 of white, non-Hispanic men.

22 (11) Data from the U.S. Census Bureau indi-
23 cate that certain Asian American, Native Hawaiian
24 and Pacific Islander (AANHPI) subgroups are still
25 underrepresented in STEM. From 2017 through

1 2021, while 8 percent of workers in the United
2 States were employed in computing, engineering,
3 and science occupations, less than 8 percent of Cam-
4 bodian, Filipino, Hmong, and Laotian workers were
5 employed in these occupations. Only 4 percent of
6 Native Hawaiian and other Pacific Islander (NHPI)
7 workers were employed in these occupations. These
8 subgroups are even less represented when compared
9 to AANHPI workers as a whole, who on average
10 represented 17 percent of the computing, engineer-
11 ing, and science workforce of the United States.

12 (12) Also, according to NCES, Native Hawai-
13 ian and other Pacific Islander (NHPI) STEM de-
14 gree recipients are underrepresented compared with
15 their overall population (0.2 percent of all U.S. indi-
16 viduals). NHPI students received less than 0.2 per-
17 cent of all bachelor's degrees, and less than 0.1 per-
18 cent of masters and doctoral degrees, awarded in
19 STEM from 2020 through 2021.

20 (13) According to research published by the
21 American Association for the Advancement of
22 Science (AAAS), undergraduate students identifying
23 as lesbian, gay, bisexual, or queer (LGBQ) were 7
24 percent less likely to be retained in STEM programs
25 compared with their heterosexual counterparts, de-

1 spite the fact that LGBQ students are 10 percent
2 more likely to participate in undergraduate research
3 experiences, which is a significant contributor to
4 STEM retention absent other factors such as sexual
5 or gender identity, than their heterosexual counter-
6 parts.

7 (14) According to research published by the
8 American Society for Cell Biology, transgender and
9 gender nonconforming undergraduate students, who
10 represent 1 in 14 adults in the United States aged
11 18–24, are 10 percent less likely to remain in STEM
12 majors than their cisgender counterparts.

13 (15) Research published by the AAAS also indi-
14 cates that 22 percent of LGBTQ professionals had
15 thought about leaving their STEM job, compared
16 with 15 percent of non-LGBTQ STEM profes-
17 sionals. Moreover, 12 percent of LGBTQ profes-
18 sionals planned to leave their STEM profession
19 within the next 5 years, compared with 8 percent of
20 non-LGBTQ professionals.

21 (16) Finally, according to the NSF, persons
22 with a disability are underrepresented in the general
23 workforce (4 percent) compared with their represen-
24 tation in the general U.S. population (9 percent),

1 and even less represented in the STEM workforce (3
2 percent).

3 (b) PROGRAM AUTHORIZED.—The Director of the
4 National Science Foundation shall award grants to eligible
5 entities, on a competitive basis, to enable such eligible en-
6 tities to carry out the activities described in subsection (d),
7 in order to increase the participation of women, persons
8 underrepresented in science and engineering, and persons
9 with disabilities in the fields of science, technology, engi-
10 neering, and mathematics.

11 (c) APPLICATION.—Each eligible entity that desires
12 to receive a grant under this section shall submit an appli-
13 cation to the National Science Foundation at such time,
14 in such manner, and containing such information as the
15 Director of the National Science Foundation may reason-
16 ably require.

17 (d) AUTHORIZED ACTIVITIES.—An eligible entity
18 that receives a grant under this section shall use such
19 grant funds to carry out 1 or more of the following activi-
20 ties designed to increase the participation of women, per-
21 sons underrepresented in science and engineering, or per-
22 sons with disabilities, or 2 or more of such groups, in the
23 fields of science, technology, engineering, and mathe-
24 matics:

25 (1) Online workshops.

1 (2) Mentoring programs that partner science,
2 technology, engineering, or mathematics profes-
3 sionals with students.

4 (3) Internships for undergraduate and graduate
5 students in the fields of science, technology, engi-
6 neering, and mathematics.

7 (4) Conducting outreach programs that provide
8 elementary school and secondary school students
9 with opportunities to increase their exposure to the
10 fields of science, technology, engineering, or mathe-
11 matics.

12 (5) Programs to increase the recruitment and
13 retention of underrepresented faculty.

14 (6) Such additional programs as the Director of
15 the National Science Foundation may determine.

16 (e) DEFINITIONS.—In this Act:

17 (1) MINORITY.—The term “minority” means
18 American Indian, Alaskan Native, Black (not of His-
19 panic origin), Hispanic (including persons of Mexi-
20 can, Puerto Rican, Cuban, and Central or South
21 American origin), Asian (including underrepresented
22 subgroups), Native Hawaiian, Pacific Islander origin
23 subgroup, or other ethnic group underrepresented in
24 science and engineering, or Lesbian, Gay, Bisexual,

1 Transgender, or Queer (LGBTQ), or gender-noncon-
2 forming.

3 (2) UNDERREPRESENTED IN SCIENCE AND EN-
4 GINEERING.—The term “underrepresented in science
5 and engineering” means a minority group whose
6 number of scientists and engineers per 10,000 popu-
7 lation of that group is substantially below the com-
8 parable figure for scientists and engineers who are
9 White and not of Hispanic origin, as determined by
10 the Secretary of Education under section 637.4(b) of
11 title 34, Code of Federal Regulations (or a similar
12 successor regulation).

13 (3) PERSON WITH A DISABILITY.—The term
14 “person with a disability” means an individual with
15 1 or more disability types as defined by the U.S.
16 Census Bureau’s Current Population Survey (CPS).

17 (f) AUTHORIZATION OF APPROPRIATIONS.—There
18 are authorized to be appropriated to carry out this section
19 \$15,000,000 for each of fiscal years 2025, 2026, 2027,
20 2028, and 2029.

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