

115TH CONGRESS
2D SESSION

S. 3583

To direct the National Science Foundation to provide grants for research about STEM education approaches and the STEM-related workforce, and for other purposes.

IN THE SENATE OF THE UNITED STATES

OCTOBER 11, 2018

Mr. HELLER introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To direct the National Science Foundation to provide grants for research about STEM education approaches and the STEM-related workforce, and for other purposes.

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 “Innovations in Men-
5 toring, Training, and Apprenticeships Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

8 (1) To remain competitive in the global econ-
9 omy, foster greater innovation, and provide a foun-

1 dation for shared prosperity, the United States
2 needs a workforce with the right mix of skills to
3 meet the diverse needs of the economy.

4 (2) Evidence indicates that the returns on in-
5 vestments in technical skills in the labor market are
6 strong when students successfully complete their
7 training and gain credentials sought by employers.

8 (3) The responsibility for developing and sus-
9 taining a skilled technical workforce is fragmented
10 across many groups, including educators; students;
11 workers; employers; Federal, State, and local govern-
12 ments; labor organizations; and civic associations.
13 Such groups need to be able to coordinate and co-
14 operate successfully with each other.

15 (4) Coordination among students, community
16 colleges, secondary and postsecondary institutions,
17 and employers would improve educational outcomes.

18 (5) Promising experiments currently underway
19 may guide innovation and reform, but scalability of
20 some of those experiments has not yet been tested.

21 (6) Evidence suggests that integration of aca-
22 demic education, technical training, and hands-on
23 work experience improves outcomes and return on
24 investment for students in secondary and postsec-

1 ondary education and for skilled technical workers in
2 different career stages.

3 (7) Outcomes show that mentoring can increase
4 STEM student engagement and the rate of comple-
5 tion of STEM postsecondary degrees.

6 **SEC. 3. NATIONAL SCIENCE FOUNDATION STEM INNOVA-**
7 **TION AND APPRENTICESHIP GRANTS.**

8 (a) ESTABLISHMENT.—The Director of the National
9 Science Foundation (referred to in this Act as the “Direc-
10 tor”) shall award competitive grants to eligible applicants
11 in accordance with this section.

12 (b) COORDINATION.—In carrying out this section, the
13 Director shall consult and cooperate with the programs
14 and policies of other relevant Federal agencies to avoid
15 duplication with, and enhance the effectiveness of, the pro-
16 vision of grants under this section.

17 (c) GRANTS FOR ASSOCIATE DEGREE PROGRAMS IN
18 STEM FIELDS.—

19 (1) IN GENERAL.—The Director shall award
20 competitive grants to community colleges to develop
21 or improve associate degree and certificate programs
22 in STEM fields in which there is significant work-
23 force demand in the region of the community college
24 receiving the award and a need to strengthen the
25 global competitiveness of affected companies.

1 (2) APPLICATION.—In considering applications
2 for grants under paragraph (1), the Director shall
3 consider—

4 (A) applicants that consist of a partnership
5 between the applying community college and in-
6 dividual employers or an employer consortia,
7 and may include a university or other organiza-
8 tion with demonstrated expertise in academic
9 program development;

10 (B) applications that demonstrate current
11 and future workforce demand in occupations di-
12 rectly related to the proposed associate degree
13 or certificate program;

14 (C) applications that include commitments
15 by the partnering employers or employer con-
16 sortia to offer apprenticeships, internships, or
17 other applied learning opportunities to students
18 enrolled in the proposed associate degree pro-
19 gram; and

20 (D) applications that include outreach
21 plans and goals for recruiting and enrolling
22 women and other historically underrepresented
23 individuals in STEM studies and careers in the
24 proposed associate degree program.

1 (d) GRANTS FOR STEM DEGREE APPLIED LEARN-
2 ING OPPORTUNITIES.—

3 (1) IN GENERAL.—The Director shall award
4 competitive grants to universities partnering with
5 employers or employer consortia that commit to of-
6 fering apprenticeships, internships, research oppor-
7 tunities, or applied learning experiences to enrolled
8 university students in identified 4-year STEM de-
9 gree programs.

10 (2) APPLICATION.—In considering applications
11 for grants under paragraph (1), the Director shall
12 consider—

13 (A) applicants that consist of a partnership
14 between—

15 (i) the applying university; and

16 (ii) individual employers or an em-
17 ployer consortia;

18 (B) applications that demonstrate current
19 and future workforce demand in occupations di-
20 rectly related to selected STEM fields; and

21 (C) applications that include outreach
22 plans and goals for recruiting and enrolling
23 women and other populations historically under-
24 represented in STEM.

1 (e) GRANTS FOR COMPUTER-BASED AND ONLINE
2 STEM EDUCATION COURSES.—

3 (1) IN GENERAL.—The Director shall award
4 competitive grants to institutions of higher education
5 or nonprofit organizations to conduct research on
6 student outcomes and determine best practices and
7 scalability of computer-based and online courses for
8 technical skills training.

9 (2) RESEARCH AREAS.—The research areas eli-
10 gible for funding under this subsection may in-
11 clude—

12 (A) postsecondary courses for technical
13 training for STEM occupations;

14 (B) improving high-school level vocational
15 training in STEM subjects;

16 (C) encouraging and sustaining interest
17 and achievement levels in STEM subjects
18 among women and other populations histori-
19 cally underrepresented in STEM studies and
20 careers; and

21 (D) combining computer-based and online
22 STEM education and training with traditional
23 mentoring and other mentoring arrangements,
24 apprenticeships, internships, and other applied
25 learning opportunities.

1 **SEC. 4. RESEARCH ON EFFICIENCY OF SKILLED TECH-**
2 **NICAL LABOR MARKETS.**

3 (a) **EFFICIENCY OF SKILLED TECHNICAL LABOR**
4 **MARKETS.**—The Directorate of Social, Behavioral & Eco-
5 nomic Sciences of the National Science Foundation, in co-
6 ordination with the Secretary of Labor, shall support re-
7 search that improves the efficiency of skilled technical
8 labor markets in the United States, including research on
9 labor market analysis innovations, data and information
10 sciences, electronic information tools and methodologies,
11 and metrics.

12 (b) **COMPARISON OF UNITED STATES WORK-**
13 **FORCE.**—

14 (1) **RESEARCH.**—The National Science Founda-
15 tion shall commission research that compares and
16 contrasts skilled technical workforce development be-
17 tween the United States and other developed coun-
18 tries, including the diversity of skilled technical and
19 professional workforces, to the extent feasible.

20 (2) **REPORT.**—Not later than 3 years after the
21 date of enactment of this Act, the Director shall
22 submit to Congress a report on the results of the
23 study under paragraph (1).

24 (c) **SKILLED TECHNICAL WORKFORCE.**—

25 (1) **REVIEW.**—The National Center for Science
26 and Engineering Statistics of the National Science

1 Foundation shall consult and coordinate with other
2 relevant Federal statistical agencies to explore the
3 feasibility of expanding its surveys to include the col-
4 lection of objective data on the skilled technical
5 workforce.

6 (2) REPORT.—Not later than 1 year after the
7 date of enactment of this Act, the Director shall
8 submit to Congress a report containing the progress
9 made in expanding the National Center for Science
10 and Engineering Statistics surveys to include the
11 skilled technical workforce. Such report shall include
12 a plan for multi-agency collaboration in order to ef-
13 fect data collection and reporting of data on the
14 skilled technical workforce.

15 **SEC. 5. EVALUATION AND REPORT.**

16 (a) EVALUATION.—

17 (1) IN GENERAL.—Not later than 2 years after
18 the date of enactment of this Act, the Director shall
19 evaluate the grants and programs provided under
20 this Act.

21 (2) REQUIREMENTS.—In conducting the evalua-
22 tion under paragraph (1), the Director shall use a
23 common set of benchmarks and assessment tools to
24 identify best practices and materials developed or

1 demonstrated by the research conducted pursuant to
2 such grants and programs.

3 (b) REPORT ON EVALUATIONS.—Not later than 180
4 days after the completion of the evaluation under sub-
5 section (a), the Director shall submit to Congress and
6 make widely available to the public a report that in-
7 cludes—

8 (1) the results of the evaluation; and

9 (2) any recommendations for administrative
10 and legislative action that could optimize the effec-
11 tiveness of the grants and programs under this Act.

12 (c) CONSULTATION.—In carrying out this section, the
13 Director shall consult the programs and policies of other
14 relevant Federal agencies to avoid duplication with, and
15 enhance the effectiveness of, the grants and programs
16 under this Act.

17 **SEC. 6. DEFINITIONS.**

18 In this Act:

19 (1) STEM.—The term “STEM” means science,
20 technology, engineering, and mathematics, including
21 computer science.

22 (2) COMMUNITY COLLEGE.—The term “commu-
23 nity college” has the meaning given the term “junior
24 or community college” in section 312 of the Higher
25 Education Act of 1965 (20 U.S.C. 1058).

1 (3) INSTITUTION OF HIGHER EDUCATION.—The
2 term “institution of higher education” has the
3 meaning given such term in section 101(a) of the
4 Higher Education Act of 1965 (20 U.S.C. 1001(a)).

5 (4) REGION.—The term “region” means a labor
6 market area, as such term is defined in section 3 of
7 the Workforce Innovation and Opportunity Act (29
8 U.S.C. 3102).

9 (5) SKILLED TECHNICAL WORKFORCE.—The
10 term “skilled technical workforce” means workers
11 with high school diplomas and 2-year technical train-
12 ing or certifications who employ significant levels of
13 STEM knowledge in their jobs.

14 (6) UNIVERSITY.—The term “university”
15 means a 4-year institution of higher education, as
16 defined in section 101(a) of the Higher Education
17 Act of 1965 (20 U.S.C. 1001(a)).

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