

115TH CONGRESS
2D SESSION

H. R. 5509

AN ACT

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Innovations in Men-
3 toring, Training, and Apprenticeships Act”.

4 **SEC. 2. FINDINGS.**

5 Congress finds the following:

6 (1) To remain competitive in the global econ-
7 omy, foster greater innovation, and provide a foun-
8 dation for shared prosperity, the United States
9 needs a workforce with the right mix of skills to
10 meet the diverse needs of the economy.

11 (2) Evidence indicates that the returns on in-
12 vestments in technical skills in the labor market are
13 strong when students successfully complete their
14 education and gain credentials sought by employers.

15 (3) The responsibility for developing and sus-
16 taining a skilled technical workforce is fragmented
17 across many groups, including educators, students,
18 workers, employers, Federal, State, and local govern-
19 ments, civic associations, and other stakeholders.
20 Such groups need to be able to coordinate and co-
21 operate successfully with each other.

22 (4) Coordination among students, community
23 colleges, secondary and post-secondary institutions,
24 and employers would improve educational outcomes.

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

4 (6) Evidence suggests that integration of aca-
 5 demic education, technical skills development, and
 6 hands-on work experience improves outcomes and re-
 7 turn on investment for students in secondary and
 8 post-secondary education and for skilled technical
 9 workers in different career stages.

10 (7) Outcomes show that mentoring can increase
 11 STEM student engagement and the rate of comple-
 12 tion of STEM post-secondary degrees.

13 **SEC. 3. NATIONAL SCIENCE FOUNDATION STEM INNOVA-**
 14 **TION AND APPRENTICESHIP GRANTS.**

15 (a) ESTABLISHMENT.—The Director of the National
 16 Science Foundation shall award competitive grants to eli-
 17 gible entities in accordance with this section.

18 (b) COORDINATION.—In carrying out this section, the
 19 Director shall consult and cooperate with the programs
 20 and policies of other relevant Federal agencies to avoid
 21 duplication with, and enhance the effectiveness of, the pro-
 22 vision of grants under this section.

23 (c) GRANTS FOR ASSOCIATE DEGREE PROGRAMS IN
 24 STEM FIELDS.—

1 (1) IN GENERAL.—The Director of the National
2 Science Foundation shall award competitive grants
3 to community colleges to develop or improve asso-
4 ciate or certificate programs in STEM fields in, with
5 respect to the region in which the respective college
6 is located, an in-demand industry sector or occupa-
7 tion (as defined in section 3(23)) of the Workforce
8 Innovation and Opportunity Act (29 U.S.C.
9 3102(23))).

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

13 (A) applicants that consist of a partnership
14 between the applying community college and in-
15 dividual employers or an employer consortia, or
16 industry or sector partnerships, and may in-
17 clude a university or other organization with
18 demonstrated expertise in academic program
19 development;

20 (B) applications that demonstrate current
21 and future workforce demand in occupations di-
22 rectly related to the proposed associate degree
23 or certificate program;

24 (C) applications that include commitments
25 by the partnering employers or employer con-

1 sortia, or industry or sector partnerships, to
2 offer apprenticeships, internships or other ap-
3 plied learning opportunities to students enrolled
4 in the proposed associate degree program;

5 (D) applications that include outreach
6 plans and goals for recruiting and enrolling
7 women and other historically underrepresented
8 individuals in STEM studies and careers in the
9 proposed associate degree program; and

10 (E) applications that describe how the ap-
11 plying community college will support the col-
12 lection of information and data for purposes of
13 evaluation of the proposed associate degree pro-
14 gram.

15 (3) FUNDING.—The National Science Founda-
16 tion shall devote not less than \$20,000,000 to
17 awards described in this subsection, which shall in-
18 clude not less than \$5,000,000 for each of fiscal
19 years 2018 through 2021, subject to the availability
20 of appropriations, to come from amounts made avail-
21 able for the Education and Human Resources Direc-
22 torate. This subsection shall be carried out using
23 funds otherwise appropriated by law after the date
24 of enactment of this Act.

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

3 (1) IN GENERAL.—The Director of the National
4 Science Foundation shall award competitive grants
5 to institutions of higher education partnering with
6 employers or employer consortia, or industry or sec-
7 tor partnerships, that commit to offering apprentice-
8 ships, internships, research opportunities, or applied
9 learning experiences to enrolled university students
10 in identified STEM baccalaureate degree programs.

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

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

16 (i) the applying university; and

17 (ii) individual employers or an em-
18 ployer consortia, or industry or sector part-
19 nerships;

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

23 (C) applications that include outreach
24 plans and goals for recruiting and enrolling

1 women and other populations historically under-
2 represented in STEM; and

3 (D) applications that describe how the uni-
4 versity will support the collection and informa-
5 tion of data for purposes of the evaluation of
6 identified STEM degree programs.

7 (3) FUNDING.—The National Science Founda-
8 tion shall devote not less than \$10,000,000 to
9 awards described in this subsection, which shall in-
10 clude not less than \$2,500,000 for each of fiscal
11 years 2018 through 2021, subject to the availability
12 of appropriations, to come from amounts made avail-
13 able for the Education and Human Resources Direc-
14 torate. This subsection shall be carried out using
15 funds otherwise appropriated by law after the date
16 of enactment of this Act.

17 (e) GRANTS FOR COMPUTER-BASED AND ONLINE
18 STEM EDUCATION COURSES.—

19 (1) IN GENERAL.—The Director of the National
20 Science Foundation shall award competitive grants
21 to institutions of higher education or nonprofit orga-
22 nizations to conduct research on student outcomes
23 and determine best practices for STEM education
24 and technical skills education through distance
25 learning or in a simulated work environment.

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

4 (A) post-secondary courses for technical
5 skills development for STEM occupations;

6 (B) improving high-school level career and
7 technical education in STEM subjects;

8 (C) encouraging and sustaining interest
9 and achievement levels in STEM subjects
10 among women and other populations histori-
11 cally underrepresented in STEM studies and
12 careers; and

13 (D) combining computer-based and online
14 STEM education and skills development with
15 traditional mentoring and other mentoring ar-
16 rangements, apprenticeships, internships, and
17 other applied learning opportunities.

18 (3) FUNDING.—The National Science Founda-
19 tion shall devote not less than \$10,000,000 to
20 awards described in this subsection, which shall in-
21 clude not less than \$2,500,000 for each of fiscal
22 years 2018 through 2021, subject to the availability
23 of appropriations, to come from amounts made avail-
24 able for the Education and Human Resources Direc-
25 torate. This subsection shall be carried out using

1 funds otherwise appropriated by law after the date
2 of enactment of this Act.

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

5 (a) EFFICIENCY OF SKILLED TECHNICAL LABOR
6 MARKETS.—The Directorate of Social, Behavioral & Eco-
7 nomic Sciences of the National Science Foundation, in co-
8 ordination with the Secretary of Labor, shall support re-
9 search on labor market analysis innovations, data and in-
10 formation sciences, electronic information tools and meth-
11 odologies, 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 States and regions within the United States
18 and other developed countries, including the diver-
19 sity of skilled technical and professional workforces,
20 to the extent feasible.

21 (2) REPORT.—Not later than 3 years after the
22 date of enactment of this Act, the Director of the
23 National Science Foundation shall submit to Con-
24 gress a report on the results of the study under
25 paragraph (1).

1 (c) SKILLED TECHNICAL WORKFORCE.—

2 (1) REVIEW.—The National Center for Science
3 and Engineering Statistics of the National Science
4 Foundation shall consult and coordinate with other
5 relevant Federal statistical agencies, including the
6 Institution of Education Science, and the Committee
7 on Science, Technology, Engineering, and Mathe-
8 matics Education, to explore the feasibility of ex-
9 panding its surveys to include the collection of objec-
10 tive data on the skilled technical workforce.

11 (2) REPORT.—Not later than 1 year after the
12 date of enactment of this Act, the Director of the
13 National Science Foundation shall submit to Con-
14 gress a report containing the progress made in ex-
15 panding the National Center for Science and Engi-
16 neering Statistics surveys to include the skilled tech-
17 nical workforce. Such report shall include a plan for
18 multi-agency collaboration in order to effect data
19 collection and reporting of data on the skilled tech-
20 nical workforce.

21 **SEC. 5. SPENDING LIMITATION.**

22 No additional funds are authorized to be appro-
23 priated to carry out this Act and the amendments made
24 by this Act, and this Act and such amendments shall be

1 carried out using amounts otherwise available for such
2 purpose.

3 **SEC. 6. EVALUATION AND REPORT.**

4 (a) EVALUATION.—

5 (1) IN GENERAL.—Not later than 2 years after
6 the date of enactment of this Act, the Director of
7 the National Science Foundation shall evaluate the
8 grants and programs provided under this Act.

9 (2) REQUIREMENTS.—In conducting the evalua-
10 tion under paragraph (1), the Director shall —

11 (A) use a common set of benchmarks and
12 assessment tools to identify best practices and
13 materials developed or demonstrated by the re-
14 search conducted pursuant to such grants and
15 programs;

16 (B) include an assessment of the effective-
17 ness of the grant programs established under
18 this Act in expanding apprenticeships, intern-
19 ships, and other applied learning opportunities
20 offered by employers in conjunction with com-
21 munity colleges and institutions of higher edu-
22 cation;

23 (C) assess the number of students who
24 participated in programs established under or
25 pursuant to this Act;

1 (D) assess the percentage of students par-
2 ticipating in programs established under or pur-
3 suant to this Act who successfully complete
4 their education program; and

5 (E) assess the median earnings of students
6 who have completed a program with respect to
7 which a grant was awarded under section 3(c),
8 as of the date that is two calendar quarters
9 after completing the program, as practicable.

10 (b) REPORT ON EVALUATIONS.—Not later than 180
11 days after the completion of the evaluation under sub-
12 section (a), the Director of the National Science Founda-
13 tion shall submit to Congress and make widely available
14 to the public a report that includes—

15 (1) the results of the evaluation; and

16 (2) any recommendations for legislative action
17 that could optimize the effectiveness of the grants
18 and programs under this Act.

19 (c) CONSULTATION.—In carrying out this section, the
20 Director of the Foundation shall consult the programs and
21 policies of other relevant Federal agencies to avoid dupli-
22 cation with, and enhance the effectiveness of, the grants
23 and programs under this Act.

24 (d) SUBMISSION TO SECRETARY OF EDUCATION.—
25 On the date on which the report is submitted under sub-

1 section (b), the Director of the National Science Founda-
2 tion shall also submit to the Secretary of Education a copy
3 of the report.

4 **SEC. 7. DEFINITIONS.**

5 In this Act:

6 (1) STEM.—The term “STEM” means science,
7 technology, engineering, and mathematics, including
8 computer science.

9 (2) COMMUNITY COLLEGE.—The term “commu-
10 nity college” has the meaning given the term “junior
11 and community college” in section 312 of the Higher
12 Education Act of 1965 (20 U.S.C. 1058).

13 (3) REGION.—The term “region” means a labor
14 market area, as such term is defined in section 3 of
15 the Workforce Innovation and Opportunity Act (29
16 U.S.C. 3102).

17 (4) SKILLED TECHNICAL WORKFORCE.—The
18 term “skilled technical workforce” means workers
19 with high school diplomas and two-year technical

- 1 training or certifications who employ significant lev-
- 2 els of STEM knowledge in their jobs.

Passed the House of Representatives September 25,
2018.

Attest:

Clerk.

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