

***In the Senate of the United States,***

*December 20 (legislative day, December 19), 2018.*

*Resolved*, That the bill from the House of Representatives (H.R. 5509) entitled “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.”, do pass with the following

**AMENDMENT:**

Strike all after the enacting clause and insert the following:

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 economy,*  
7 *foster greater innovation, and provide a foundation*  
8 *for shared prosperity, the United States needs a work-*

1     *force with the right mix of skills to meet the diverse*  
2     *needs of the economy.*

3             *(2) Evidence indicates that the returns on invest-*  
4     *ments in technical skills in the labor market are*  
5     *strong when students successfully complete their edu-*  
6     *cation and gain credentials sought by employers.*

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

14            *(4) Coordination among students, community*  
15    *colleges, secondary and post-secondary institutions,*  
16    *and employers would improve educational outcomes.*

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

20            *(6) Evidence suggests that integration of aca-*  
21    *demic education, technical skills development, and*  
22    *hands-on work experience improves outcomes and re-*  
23    *turn on investment for students in secondary and*  
24    *post-secondary education and for skilled technical*  
25    *workers in different career stages.*

1           (7) *Outcomes show that mentoring can increase*  
 2           *STEM student engagement and the rate of completion*  
 3           *of STEM post-secondary degrees.*

4   **SEC. 3. NATIONAL SCIENCE FOUNDATION STEM INNOVA-**  
 5           **TION AND APPRENTICESHIP GRANTS.**

6           *Section 3 of the Scientific and Advanced-Technology*  
 7   *Act of 1992 (42 U.S.C. 1862i) is amended—*

8           (1) *by redesignating subsections (d) through (g)*  
 9           *as subsections (g) through (j), respectively;*

10          (2) *by inserting after subsection (c) the fol-*  
 11          *lowing:*

12          “(d) *GRANTS FOR ASSOCIATE DEGREE PROGRAMS IN*  
 13          *STEM FIELDS.—*

14               “(1) *IN-DEMAND WORKFORCE GRANTS.—The Di-*  
 15               *rector shall award grants to junior or community col-*  
 16               *leges to develop or improve associate degree or certifi-*  
 17               *cate programs in STEM fields, with respect to the re-*  
 18               *gion in which the respective college is located, and an*  
 19               *in-demand industry sector or occupation.*

20               “(2) *APPLICATIONS.—In considering applica-*  
 21               *tions for grants under paragraph (1), the Director*  
 22               *shall prioritize—*

23                       “(A) *applications that consist of a partner-*  
 24                       *ship between the applying junior or community*  
 25                       *college and individual employers or an employer*

1        *consortia, or industry or sector partnerships,*  
2        *and may include a university or other organiza-*  
3        *tion with demonstrated expertise in academic*  
4        *program development;*

5                *“(B) applications that demonstrate current*  
6        *and future workforce demand in occupations di-*  
7        *rectly related to the proposed associate degree or*  
8        *certificate program;*

9                *“(C) applications that include commitments*  
10        *by the partnering employers or employer con-*  
11        *sortia, or industry or sector partnerships, to offer*  
12        *apprenticeships, internships, or other applied*  
13        *learning opportunities to students enrolled in the*  
14        *proposed associate degree or certificate program;*

15                *“(D) applications that include outreach*  
16        *plans and goals for recruiting and enrolling*  
17        *women and other underrepresented populations*  
18        *in STEM fields in the proposed associate degree*  
19        *or certificate program; and*

20                *“(E) applications that describe how the ap-*  
21        *plying junior or community college will support*  
22        *the collection of information and data for pur-*  
23        *poses of evaluation of the proposed associate de-*  
24        *gree or certificate program.*

1       “(e) *GRANTS FOR STEM DEGREE APPLIED LEARNING*  
2 *OPPORTUNITIES.*—

3               “(1) *IN GENERAL.*—*The Director shall award*  
4 *grants to institutions of higher education partnering*  
5 *with private sector employers or private sector em-*  
6 *ployer consortia, or industry or sector partnerships,*  
7 *that commit to offering apprenticeships, internships,*  
8 *research opportunities, or applied learning experi-*  
9 *ences to enrolled students in identified STEM bacca-*  
10 *laureate degree programs.*

11              “(2) *PURPOSES.*—*Awards under this subsection*  
12 *may be used—*

13                   “(A) *to develop curricula and programs for*  
14 *apprenticeship, internships, research opportuni-*  
15 *ties, or applied learning experiences; or*

16                   “(B) *to provide matching funds to*  
17 *incentivize partnership and participation by*  
18 *private sector employers and industry.*

19              “(3) *APPLICATIONS.*—*In considering applica-*  
20 *tions for grants under paragraph (1), the Director*  
21 *shall prioritize—*

22                   “(A) *applicants that consist of a partner-*  
23 *ship between—*

24                           “(i) *the applying institution of higher*  
25 *education; and*

1                   “(ii) individual employers or an em-  
 2                   ployer consortia, or industry or sector part-  
 3                   nerships;

4                   “(B) applications that demonstrate current  
 5                   and future workforce demand in occupations di-  
 6                   rectly related to the identified STEM fields;

7                   “(C) applications that include outreach  
 8                   plans and goals for recruiting and enrolling  
 9                   women and other underrepresented populations  
 10                  in STEM fields; and

11                  “(D) applications that describe how the in-  
 12                  stitution of higher education will support the col-  
 13                  lection and information of data for purposes of  
 14                  the evaluation of identified STEM degree pro-  
 15                  grams.

16                  “(f) GRANTS FOR COMPUTER-BASED AND ONLINE  
 17                  STEM EDUCATION COURSES.—

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

1           “(2) *RESEARCH AREAS.*—*The research areas eli-*  
 2           *gible for funding under this subsection may include—*

3                   “(A) *post-secondary courses for technical*  
 4                   *skills development for STEM occupations;*

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

7                   “(C) *encouraging and sustaining interest*  
 8                   *and achievement levels in STEM subjects among*  
 9                   *women and other populations historically under-*  
 10                  *represented in STEM studies and careers; and*

11                  “(D) *combining computer-based and online*  
 12                  *STEM education and skills development with*  
 13                  *traditional mentoring and other mentoring ar-*  
 14                  *rangements, apprenticeships, internships, and*  
 15                  *other applied learning opportunities.”;*

16           (3) *in subsection (a)(3)(A), by striking the*  
 17           *comma and inserting a semicolon;*

18           (4) *in subsection (c)(1)(B)(iv), by striking “sub-*  
 19           *section (f)(3)” and inserting “subsection (i)(3)”;*

20           (5) *in subsection (h), as redesignated—*

21                   (A) *in the heading, by striking “LIMITA-*  
 22                   *TION ON FUNDING” and inserting “FUNDING”;*

23                   (B) *by inserting “(3) LIMITATION ON FUND-*  
 24                   *ING.—” before “To qualify” and indenting ap-*  
 25                   *propriately; and*

1                   (C) by inserting before paragraph (3), as  
 2                   redesignated, the following:

3                   “(1) *FUNDING.—The Director shall allocate out*  
 4                   *of amounts made available for the Education and*  
 5                   *Human Resources Directorate—*

6                   “(A) *up to \$5,000,000 to carry out the ac-*  
 7                   *tivities under subsection (d) for each of fiscal*  
 8                   *years 2019 through 2022, subject to the avail-*  
 9                   *ability of appropriations;*

10                  “(B) *up to \$2,500,000 to carry out the ac-*  
 11                  *tivities under subsection (e) for each of fiscal*  
 12                  *years 2019 through 2022, subject to the avail-*  
 13                  *ability of appropriations; and*

14                  “(C) *up to \$2,500,000 to carry out the ac-*  
 15                  *tivities under subsection (f) for each of fiscal*  
 16                  *years 2019 through 2022, subject to the avail-*  
 17                  *ability of appropriations.*

18                  “(2) *LIMITATION ON FUNDING.—Amounts made*  
 19                  *available to carry out subsections (d), (e), and (f)*  
 20                  *shall be derived from amounts appropriated or other-*  
 21                  *wise made available to the National Science Founda-*  
 22                  *tion.”; and*

23                  (6) *in subsection (j), as redesignated—*

24                         (A) *in paragraph (4), by striking “; and”*  
 25                         *and inserting a semicolon;*



1                   (B) by redesignating paragraph (5) as  
2                   paragraph (7); and

3                   (C) by inserting after paragraph (4) the fol-  
4                   lowing:

5                   “(5) the term ‘in-demand industry sector or oc-  
6                   cupation’ has the meaning given the term in section  
7                   3 of the Workforce Innovation and Opportunity Act  
8                   (29 U.S.C. 3102);

9                   “(6) the term ‘junior or community college’ has  
10                  the meaning given the term in section 312 of the  
11                  Higher Education Act of 1965 (20 U.S.C. 1058);”;  
12                  and

13                  (D) by adding at the end the following:

14                  “(8) the term ‘region’ means a labor market  
15                  area, as that term is defined in section 3 of the Work-  
16                  force Innovation and Opportunity Act (29 U.S.C.  
17                  3102); and

18                  “(9) the terms ‘mathematics, science, engineer-  
19                  ing, or technology’ or ‘STEM’ mean science, tech-  
20                  nology, engineering, and mathematics, including com-  
21                  puter science.”.

22   **SEC. 4. RESEARCH ON EFFICIENCY OF SKILLED TECHNICAL**  
23                   **LABOR MARKETS.**

24                  (a) *EFFICIENCY OF SKILLED TECHNICAL LABOR MAR-*  
25   *KETS.—The Director of the National Science Foundation,*

1 *working through the Directorate of Social, Behavioral &*  
2 *Economic Sciences, in coordination with the Secretary of*  
3 *Labor, shall support research on labor market analysis in-*  
4 *novations, data and information sciences, electronic infor-*  
5 *mation tools and methodologies, and metrics.*

6 (b) *SKILLED TECHNICAL WORKFORCE.*—

7 (1) *REVIEW.*—*The National Center for Science*  
8 *and Engineering Statistics of the National Science*  
9 *Foundation shall consult and coordinate with other*  
10 *relevant Federal statistical agencies, including the In-*  
11 *stitute of Education Sciences of the Department of*  
12 *Education, and the Committee on Science, Tech-*  
13 *nology, Engineering, and Mathematics Education of*  
14 *the National Science and Technology Council estab-*  
15 *lished under section 101 of the America COMPETES*  
16 *Act of 2010 (Public Law 111–358), to explore the fea-*  
17 *sibility of expanding its surveys to include the collec-*  
18 *tion of objective data on the skilled technical work-*  
19 *force.*

20 (2) *REPORT.*—*Not later than 1 year after the*  
21 *date of enactment of this Act, the Director of the Na-*  
22 *tional Science Foundation shall submit to Congress a*  
23 *report on the progress made in expanding the Na-*  
24 *tional Center for Science and Engineering Statistics*  
25 *surveys to include the skilled technical workforce, in-*

1 *cluding a plan for multi-agency collaboration to im-*  
 2 *prove data collection and reporting of data on the*  
 3 *skilled technical workforce.*

4 (3) *DEFINITION OF SKILLED TECHNICAL WORK-*  
 5 *FORCE.—The term “‘skilled technical workforce’”*  
 6 *means workers with high school diplomas and two-*  
 7 *year technical training or certifications who employ*  
 8 *significant levels of STEM knowledge in their jobs.*

9 **SEC. 5. EVALUATION AND REPORT.**

10 (a) *EVALUATION.—*

11 (1) *IN GENERAL.—Not later than 2 years after*  
 12 *the date of enactment of this Act, the Director of the*  
 13 *National Science Foundation shall evaluate the grant*  
 14 *programs established under subsections (d), (e), and*  
 15 *(f) of section 3 of the Scientific and Advanced-Tech-*  
 16 *nology Act of 1992 (42 U.S.C. 1862i), as amended by*  
 17 *this Act.*

18 (2) *REQUIREMENTS.—In conducting the evalua-*  
 19 *tion under paragraph (1), the Director shall—*

20 (A) *use a common set of benchmarks and*  
 21 *assessment tools to identify best practices and*  
 22 *materials developed or demonstrated by the re-*  
 23 *search conducted pursuant to such grants and*  
 24 *programs under subsection (f) of that section;*

1           (B) include an assessment of the effective-  
2           ness of the grant programs in expanding appren-  
3           ticeships, internships, and other applied learning  
4           opportunities offered by employers in conjunc-  
5           tion with junior or community colleges, or insti-  
6           tutions of higher education, as applicable;

7           (C) assess the number of students who par-  
8           ticipated in the grant programs; and

9           (D) assess the percentage of students par-  
10          ticipating in the grant programs who success-  
11          fully complete their education programs.

12       (b) *REPORT ON EVALUATIONS.*—Not later than 180  
13       days after the date the evaluation under subsection (a) is  
14       complete, the Director of the National Science Foundation  
15       shall submit to Congress and the Secretary of Education,  
16       and make widely available to the public, a report on the  
17       results of the evaluation, including any recommendations  
18       for legislative action that could optimize the effectiveness  
19       of the grant programs.

Attest:

*Secretary.*



115<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

**H.R. 5509**

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**AMENDMENT**