116TH CONGRESS
1ST SESSION

S. 3040

To amend the Higher Education Act of 1965 to include teacher preparation for computer science in elementary and secondary education.

IN THE SENATE OF THE UNITED STATES

DECEMBER 12, 2019

Ms. ROSEN (for herself, Mr. WICKER, Ms. HASSAN, and Mr. ROMNEY) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

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A BILL

To amend the Higher Education Act of 1965 to include teacher preparation for computer science in elementary and secondary education.

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 "Teacher Education for

5 Computer Science Act" or the "Teach CS Act".

6 **SEC. 2. TEACHER QUALITY ENHANCEMENT.**

7   (a) PARTNERSHIP GRANTS.—Section 202(d)(5) of

8 the Higher Education Act of 1965 (20 U.S.C. 1022a) is

9 amended—

1   (1) in subparagraph (B), by inserting "com-
2 puter science," after "science,"; and

3   (2) in subparagraph (C), by inserting "(includ-
4 ing computer science, computer engineering, data
5 science, information technology, and cybersecurity
6 professionals)" after "occupations".

7   (b) ACCOUNTABILITY AND EVALUATION.—Section
8 204(a)(4) of the Higher Education Act of 1965 (20 U.S.C.
9 1022c(a)(4)) is amended—

10   (1) in subparagraph (C), by inserting "com-
11 puter science," after "science,"; and

12   (2) in subparagraph (G)—

13   (A) in clause (i), by inserting "(including
14   computational thinking)" after "technology";
15   and

16   (B) in clause (ii), by inserting "(including
17   computational thinking)" after "technology".

18   (c) TEACHER DEVELOPMENT.—Section 206(a) of the
19 Higher Education Act of 1965 (20 U.S.C. 1022e(a)) is
20 amended by inserting "computer science," after
21 "science,".

22 **SEC. 3. ENHANCING TEACHER EDUCATION.**

23   Section 232(c) of the Higher Education Act of 1965
24 (20 U.S.C. 1032a(c)) is amended—

1   (1) in paragraph (2), by inserting ''(including

2   computer science)'' after ''technology''; and

3   (2) in paragraph (3)(B), by inserting ''(includ-

4   ing computer science)'' after ''technology''.

SEC. 4. TEACHER EDUCATION PROGRAMS FOR COMPUTER

SCIENCE EDUCATION.

7   Part B of title II of the Higher Education Act of

8 1965 is amended (20 U.S.C. 1021 et seq.) by adding at

9 the end the following:

10   **''Subpart 6—Teacher Education Programs for**

11   **Computer Science Education**

12 **''SEC. 259. TEACHER EDUCATION PROGRAMS FOR COM-**

13   **PUTER SCIENCE EDUCATION.**

14   ''(a) PROGRAM AUTHORIZED.—From the amounts

15 appropriated to carry out this section, the Secretary may

16 award competitive grants to eligible institutions to estab-

17 lish centers of excellence in teacher education programs

18 for computer science, that may include computational

19 thinking, computing, and computer engineering.

20   ''(b) USE OF FUNDS.—A grant awarded to an eligible

21 institution under this section—

22   ''(1) shall be used by such institution to ensure

23   that current and future teachers meet the applicable

24   State certification and licensure requirements in a

25   field that will enable them to teach computer science

1   in their State at the elementary and secondary
2   school levels, by—

3   "(A) creating teacher education programs
4   that meet the requirements of section
5   200(6)(A)(iv) and offer, through hands-on and
6   classroom teaching activities with in-service
7   teachers—

8   "(i) doctoral, master's, or bachelor's
9   degrees in teaching computer science at
10   the elementary school and secondary school
11   levels; or

12   "(ii) teaching endorsements in com-
13   puter science, in the case of a teacher with
14   related State certification and licensure re-
15   quirements or a student who is pursuing
16   certification and licensure requirements in
17   related fields, such as mathematics and
18   science;

19   "(B) ensuring that current and future
20   teachers who graduate from such programs
21   meet the applicable State certification and li-
22   censure requirements, including any require-
23   ments for certification obtained through alter-
24   native routes to certification, or, with regard to
25   special education teachers, the qualifications de-

1 scribed in section 612(a)(14)(C) of the Individ-

2 uals with Disabilities Education Act;

3 ''(C) recruiting individuals to enroll in

4 such programs, including subject matter experts

5 and professionals in fields related to computer

6 science; and

7 ''(D) awarding scholarships and fellowships

8 based on financial need and to recruit tradition-

9 ally underrepresented groups in computer

10 science to help such students pay the cost of at-

11 tendance (as defined in section 472); and

12 ''(2) may be used by such institution to—

13 ''(A) hire and pay faculty salaries for the

14 teacher education programs described in para-

15 graph (1)(A);

16 ''(B) conduct research in computer science

17 education; and

18 ''(C) carry out activities to encourage the

19 Secretary to partner with other agencies, and

20 prioritize funding for computer science edu-

21 cation research to support teacher preparation.

22 ''(c) DURATION.—

23 ''(1) IN GENERAL.—A grant under this section

24 shall be awarded for 5 years, conditional upon a sat-

25 isfactory report to the Secretary of progress with re-

1   spect to the program carried out with the grant

2   after the first 3-years of the grant period.

3   "(2) REPORT OF PROGRESS.—Such report of

4   progress on the program shall include data on the

5   number of students and instructors enrolled, infor-

6   mation on former graduates (including on how many

7   earn teaching certification or licensure in a field that

8   will enable them to teach computer science in their

9   State at the secondary level, or be prepared to teach

10   computer science at the elementary level), and data

11   on any additional funding (other than Federal

12   funds) received to carry out the program.

13   "(d) APPLICATION.—

14   "(1) IN GENERAL.—An eligible institution de-

15   siring a grant under this section shall submit an ap-

16   plication to the Secretary, at such time in such man-

17   ner, and containing such information as the Sec-

18   retary may require, which shall include—

19   "(A) a demonstration of the need for

20   teachers with the certification or licensure re-

21   quirements that enable them to teach computer

22   science at the elementary and secondary level in

23   the geographic area or State in which the insti-

24   tution is located;

1   "(B) the plan to ensure the longevity of

2   the program after the end of the grant; and

3   "(C) the plan to scale up the program (in-

4   cluding the plan for the number of personnel to

5   be hired, a description of their expected quali-

6   fications and titles, the number of fellowships

7   and scholarships to be awarded, the estimated

8   administrative expenses, proposed academic ad-

9   vising strategy, and organizing and outreach to

10   maintain virtual community of computer science

11   educators).

12   "(2) EQUITABLE DISTRIBUTION.—The Sec-

13   retary shall award grants under this section in a

14   manner that ensures an equitable distribution of

15   grants—

16   "(A) to rural and urban eligible institu-

17   tions;

18   "(B) to eligible institutions that qualify for

19   a waiver under subsection (e)(2); and

20   "(C) to eligible institutions that are located

21   in areas where there is a need for increasing

22   computer science education opportunities.

23   "(e) MATCHING REQUIREMENT.—

24   "(1) IN GENERAL.—To receive a grant under

25   this section, an eligible entity shall provide, from

1 non-Federal sources, an amount that is not less than

2 25 percent of the amount of the grant, which may

3 be provided in cash or in-kind, to carry out the ac-

4 tivities supported by the grant.

5 "(2) WAIVER.—The Secretary shall waive all or

6 part of the matching requirement described in para-

7 graph (1) for any fiscal year the Secretary deter-

8 mines that applying such requirement to the eligible

9 institution would result in serious hardship or an in-

10 ability to carry out the authorized activities de-

11 scribed in this section.

12 "(f) REPORT TO CONGRESS.—Not later than 2 years

13 after the first grant is awarded under his section and each

14 year thereafter, the Secretary shall submit to Congress a

15 report on the success of the program based on metrics de-

16 termined by the Secretary, including the number of cen-

17 ters established, the number of enrolled students, and the

18 number of qualified teachers.

19 "(g) TECHNICAL ASSISTANCE.—The Secretary shall

20 use up to 5 percent of the amount appropriated for each

21 fiscal year to provide technical assistance to eligible insti-

22 tutions.

23 "(h) DEFINITIONS.—In this section:

24 "(1) ELIGIBLE INSTITUTION.—The term 'eligi-

25 ble institution' means an institution of higher edu-

1 cation, as defined in section 101, which may be in

2 a partnership with a nonprofit organization.

3 　　"(2) COMPUTER SCIENCE.—The term 'com-

4 puter science' means the study of computers includ-

5 ing algorithmic processes and engineering principles

6 for hardware and software design, development, and

7 systems integration, and their impact on society.

8 　　"(3) COMPUTING.—The term 'computing'

9 means any goal-oriented activity requiring, benefit-

10 ting from, or creating algorithmic processes.

11 　　"(4) COMPUTATIONAL THINKING.—The term

12 'computational thinking' means the human ability to

13 formulate problems so that their solutions can be

14 represented as computational steps or algorithms to

15 be executed by a computer and integrated into

16 broader networks of systems.".

17 **SEC. 5. ADJUNCT TEACHER CORPS.**

18 　　Section 255 of the Higher Education Act of 1965 (20

19 U.S.C. 1035) is amended—

20 　　(1) in subsection (a), by inserting "computer

21 science," after "science,";

22 　　(2) in subsection (b), by inserting "computer

23 science," after "science,";

24 　　(3) in subsection (e)(1), by inserting "computer

25 science," after "science,";

1　　(4) in subsection (f)(2)(A)(i), by inserting

2 "computer science," after "science,";

3　　(5) in subsection (g)(1), by inserting "computer

4 science," after "science,";

5　　(6) in subsection (g)(3), by inserting "computer

6 science," after "science,"; and

7　　(7) in subsection (k)(2), by inserting "computer

8 science," after "science,".

9 **SEC. 6. GRADUATE FELLOWSHIPS TO PREPARE FACULTY**

10　　　　　**IN HIGH-NEED AREAS AT COLLEGES OF EDU-**

11　　　　　**CATION.**

12　　Section 258(d)(2)(A) of the Higher Education Act of

13 1965 (20 U.S.C. 1036(d)(2)(A)) is amended by inserting

14 "(including computer science)" after "technology".

15 **SEC. 7. TEACH GRANT.**

16　　Section 420N of the Higher Education Act of 1965

17 (20 U.S.C. 1070g–2) is amended—

18　　(1) in subsection (a)(2)(B)(i), by inserting

19 "computer science," after "science,"; and

20　　(2) in subsection (b)(1)(C)—

21　　　　(A) by redesignating clauses (iii) through

22 (vii) as clauses (iv) through (viii), respectively;

23 and

24　　　　(B) by inserting after clause (ii), the fol-

25 lowing:

1   ''(iii) computer science;''.

SEC. 8. GRADUATE AND POSTSECONDARY IMPROVEMENT PROGRAMS.

(a) PURPOSE.—Section 700(1)(B)(i) of the Higher Education Act of 1965 (20 U.S.C. 1133(1)(B)(i)) is amended by inserting ''computer science,'' after ''science,''.

(b) DESIGNATION OF AREAS OF NATIONAL NEED.— Section 712(b)(4) of the Higher Education Act of 1965 (20 U.S.C. 1135a(b)(4)) is amended by inserting before the period at the end the following: '', including the need for computer science''.

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