

116TH CONGRESS
1ST SESSION

H. R. 1665

To direct the National Science Foundation to support STEM education research focused on early childhood.

IN THE HOUSE OF REPRESENTATIVES

MARCH 11, 2019

Ms. STEVENS (for herself and Mr. BAIRD) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To direct the National Science Foundation to support STEM education research focused on early childhood.

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 “Building Blocks of
5 STEM Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

8 (1) The National Science Foundation is a large
9 investor in STEM education and plays a key role in
10 setting research and policy agendas.

1 (2) While studies have found that children who
2 engage in scientific activities from an early age de-
3 velop positive attitudes toward science and are more
4 likely to pursue STEM expertise and careers later
5 on, the majority of current research focuses on in-
6 creasing STEM opportunities for middle school-aged
7 children and older.

8 (3) Women remain widely underrepresented in
9 the STEM workforce, and this gender disparity ex-
10 tends down through all levels of education.

11 **SEC. 3. SUPPORTING EARLY CHILDHOOD STEM EDUCATION**
12 **RESEARCH.**

13 In awarding grants under the Discovery Research
14 PreK–12 program, the Director of the National Science
15 Foundation shall consider the age distribution of a STEM
16 education research and development project to improve the
17 focus of research and development on early childhood edu-
18 cation.

19 **SEC. 4. SUPPORTING FEMALE STUDENTS IN PREKINDER-**
20 **GARTEN THROUGH ELEMENTARY SCHOOL IN**
21 **STEM EDUCATION.**

22 Section 305(d) of the American Innovation and Com-
23 petitiveness Act (42 U.S.C. 1862s–5(d)) is amended by
24 adding at the end the following:

1 “(3) RESEARCH.—As a component of improving
2 participation of women in STEM fields, research
3 funded by a grant under this subsection may include
4 research on—

5 “(A) the role of teacher training and pro-
6 fessional development, including effective incen-
7 tive structures to encourage teachers to partici-
8 pate in such training and professional develop-
9 ment, in encouraging or discouraging female
10 students in prekindergarten through elementary
11 school from participating in STEM activities;

12 “(B) the role of teachers in shaping per-
13 ceptions of STEM in female students in pre-
14 kindergarten through elementary school and
15 discouraging such students from participating
16 in STEM activities;

17 “(C) the role of other facets of the learn-
18 ing environment on the willingness of female
19 students in prekindergarten through elementary
20 school to participate in STEM activities, includ-
21 ing learning materials and textbooks, classroom
22 decorations, seating arrangements, use of media
23 and technology, classroom culture, and gender
24 composition of students during group work;

1 “(D) the role of parents and other care-
2 givers in encouraging or discouraging female
3 students in prekindergarten through elementary
4 school from participating in STEM activities;

5 “(E) the types of STEM activities that en-
6 courage greater participation by female stu-
7 dents in prekindergarten through elementary
8 school;

9 “(F) the role of mentorship and best prac-
10 tices in finding and utilizing mentors;

11 “(G) the role of informal and out-of-school
12 STEM learning opportunities on the perception
13 of and participation in STEM activities of fe-
14 male students in prekindergarten through ele-
15 mentary school; and

16 “(H) any other area the Director deter-
17 mines will carry out the goal described in para-
18 graph (1).”.

19 **SEC. 5. SUPPORTING FEMALE STUDENTS IN PREKINDER-**
20 **GARTEN THROUGH ELEMENTARY SCHOOL IN**
21 **COMPUTER SCIENCE EDUCATION.**

22 Section 310(b) of the American Innovation and Com-
23 petitiveness Act (42 U.S.C. 1862s–7(b)) is amended by
24 adding at the end the following:

1 “(3) USES OF FUNDS.—The tools and models
2 described in paragraph (2)(C) may include—

3 “(A) offering training and professional de-
4 velopment programs, including summer or aca-
5 demic year institutes or workshops, designed to
6 strengthen the capabilities of prekindergarten
7 and elementary school teachers and to famil-
8 iarize such teachers with the role of gender bias
9 in the classroom;

10 “(B) offering innovative pre-service and in-
11 service programs that instruct teachers on gen-
12 der-inclusive practices for teaching computing
13 concepts;

14 “(C) developing distance learning pro-
15 grams for teachers or students, including devel-
16 oping curricular materials, play-based com-
17 puting activities, and other resources for the in-
18 service professional development of teachers
19 that are made available to teachers through the
20 Internet;

21 “(D) developing or adapting prekinderg-
22 arten and elementary school computer science
23 curricular materials that incorporate contem-
24 porary research on the science of learning, par-
25 ticularly with respect to gender inclusion;

1 “(E) developing and offering gender-inclu-
2 sive computer science enrichment programs for
3 students, including after-school and summer
4 programs;

5 “(F) providing mentors for female students
6 in prekindergarten through elementary school
7 in person and through the Internet to support
8 such students in participating in computer
9 science activities;

10 “(G) engaging female students in pre-
11 kindergarten through elementary school and
12 their guardians about the difficulties faced by
13 such students to maintain an interest in partici-
14 pating in computer science activities;

15 “(H) acquainting female students in pre-
16 kindergarten through elementary school with
17 careers in computer science and encouraging
18 such students to consider careers in such field;

19 “(I) developing tools to evaluate activities
20 conducted under this subsection; and

21 “(J) any other tools or models the Director
22 determines will accomplish the aim described in
23 paragraph (2)(C).”.

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