

116TH CONGRESS  
1ST SESSION

# H. R. 1665

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

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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

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## 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 prekind-  
22 garten 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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