

116TH CONGRESS
1ST SESSION

H. R. 1665

IN THE SENATE OF THE UNITED STATES

JULY 24, 2019

Received; read twice and referred to the Committee on Commerce, Science,
and Transportation

AN ACT

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Building Blocks of
3 STEM Act”.

4 **SEC. 2. FINDINGS.**

5 Congress finds the following:

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

9 (2) While studies have found that children who
10 engage in scientific activities from an early age de-
11 velop positive attitudes toward science and are more
12 likely to pursue STEM expertise and careers later
13 on, the majority of current research focuses on in-
14 creasing STEM opportunities for middle school-aged
15 children and older.

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

19 **SEC. 3. SUPPORTING EARLY CHILDHOOD STEM EDUCATION**
20 **RESEARCH.**

21 In awarding grants under the Discovery Research
22 PreK–12 program, the Director of the National Science
23 Foundation shall consider the age distribution of a STEM
24 education research and development project to improve the
25 focus of research and development on early childhood edu-
26 cation.

1 **SEC. 4. SUPPORTING FEMALE STUDENTS IN PREKINDER-**
2 **GARTEN THROUGH ELEMENTARY SCHOOL IN**
3 **STEM EDUCATION.**

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

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

11 “(A) the role of teacher training and pro-
12 fessional development, including effective incen-
13 tive structures to encourage teachers to partici-
14 pate in such training and professional develop-
15 ment, in encouraging or discouraging female
16 students in prekindergarten through elementary
17 school from participating in STEM activities;

18 “(B) the role of teachers in shaping per-
19 ceptions of STEM in female students in pre-
20 kindergarten through elementary school and
21 discouraging such students from participating
22 in STEM activities;

23 “(C) the role of other facets of the learn-
24 ing environment on the willingness of female
25 students in prekindergarten through elementary
26 school to participate in STEM activities, includ-

1 ing learning materials and textbooks, classroom
2 decorations, seating arrangements, use of media
3 and technology, classroom culture, and gender
4 composition of students during group work;

5 “(D) the role of parents and other care-
6 givers in encouraging or discouraging female
7 students in prekindergarten through elementary
8 school from participating in STEM activities;

9 “(E) the types of STEM activities that en-
10 courage greater participation by female stu-
11 dents in prekindergarten through elementary
12 school;

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

15 “(G) the role of informal and out-of-school
16 STEM learning opportunities on the perception
17 of and participation in STEM activities of fe-
18 male students in prekindergarten through ele-
19 mentary school; and

20 “(H) any other area the Director deter-
21 mines will carry out the goal described in para-
22 graph (1).”.

1 **SEC. 5. SUPPORTING FEMALE STUDENTS IN PREKINDER-**
2 **GARTEN THROUGH ELEMENTARY SCHOOL IN**
3 **COMPUTER SCIENCE EDUCATION.**

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

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

9 “(A) offering training and professional de-
10 velopment programs, including summer or aca-
11 demic year institutes or workshops, designed to
12 strengthen the capabilities of prekindergarten
13 and elementary school teachers and to famil-
14 iarize such teachers with the role of gender bias
15 in the classroom;

16 “(B) offering innovative pre-service and in-
17 service programs that instruct teachers on gen-
18 der-inclusive practices for teaching computing
19 concepts;

20 “(C) developing distance learning pro-
21 grams for teachers or students, including devel-
22 oping curricular materials, play-based com-
23 puting activities, and other resources for the in-
24 service professional development of teachers
25 that are made available to teachers through the
26 Internet;

1 “(D) developing or adapting prekindergarten and elementary school computer science curricular materials that incorporate contemporary research on the science of learning, particularly with respect to gender inclusion;

6 “(E) developing and offering gender-inclusive computer science enrichment programs for students, including after-school and summer programs;

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

15 “(G) engaging female students in prekindergarten through elementary school and their guardians about the difficulties faced by such students to maintain an interest in participating in computer science activities;

20 “(H) acquainting female students in prekindergarten through elementary school with careers in computer science and encouraging such students to consider careers in such field;

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

