

113TH CONGRESS  
2D SESSION

# S. 2543

To support afterschool and out-of-school-time science, technology, engineering,  
and mathematics programs, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

JUNE 26, 2014

Mrs. SHAHEEN 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 support afterschool and out-of-school-time science, tech-  
nology, engineering, and mathematics programs, and for  
other purposes.

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 “Supporting Afterschool  
5 STEM Act”.

6 **SEC. 2. FINDINGS.**

7 Congress finds the following:

8 (1) Numerous authoritative studies document  
9 that the proficiency of students in the United States  
10 in science, technology, engineering, and mathematics

1 (“STEM”) will have a major impact on the Nation’s  
2 future economic competitiveness and on the pre-  
3 eminence of the United States in scientific inquiry  
4 and technological innovation.

5 (2) Results from the National Assessment of  
6 Educational Progress, the Trends in International  
7 Mathematics and Science Study, the Programme in  
8 International Science Assessment, and other sources  
9 show that students in the United States are not  
10 demonstrating sufficient achievement in the STEM  
11 subjects and are not keeping pace with students in  
12 other countries.

13 (3) Research demonstrates the importance of  
14 afterschool programs in engaging students in STEM  
15 fields and building STEM-relevant skills and pro-  
16 ficiencies, especially for girls, students from popu-  
17 lations traditionally underrepresented in STEM  
18 fields, and students from low socioeconomic cir-  
19 cumstances.

20 (4) A National Research Council consensus  
21 study confirmed the importance of learning that oc-  
22 curs in out-of-school-time settings such as after-  
23 school programs and science centers, and proposed  
24 a set of “strands of science learning” framework

1 that articulated capabilities fostered by informal  
2 learning environments.

3 (5) According to a 2013 study entitled “Defin-  
4 ing Youth Outcomes for STEM Learning in After-  
5 school”, the afterschool field is confident in its abil-  
6 ity to help young people develop interest in STEM  
7 and STEM learning activities, develop capacities to  
8 productively engage in such activities, and come to  
9 value them. The afterschool field is also confident  
10 that it can impact skills such as problem-solving  
11 abilities, demonstrating STEM skills, career aware-  
12 ness, and 21st century skills, such as teamwork,  
13 that are important to the workforce and national  
14 economic goals.

15 (6) The Federal Government should use its re-  
16 sources as effectively as possible to increase opportu-  
17 nities for students to be exposed to STEM subjects  
18 outside of the school day and to build a balanced  
19 kindergarten through grade 12 STEM education  
20 portfolio that fosters learning in school as well as in  
21 out-of-school-time programs.

22 (7) Afterschool programs have long partnered  
23 with other youth-serving and community organiza-  
24 tions to meet the needs of students. Cross-sector col-  
25 laborations between afterschool programs, schools,

1 science centers, institutions of higher education,  
2 businesses, and other entities are yielding great ben-  
3 efits for engaging young people in STEM fields.

4 (8) As interest and momentum grows around  
5 STEM programming in afterschool, more and better  
6 partnerships across Federal agencies become in-  
7 creasingly important to leverage resources and offer  
8 high-quality, hands-on STEM experiences for youth.

9 **SEC. 3. PURPOSES.**

10 The purposes of this Act are—

11 (1) to enhance America’s economic competitive-  
12 ness by strengthening STEM education through fos-  
13 tering interest and success in STEM subjects among  
14 certain student populations in kindergarten through  
15 grade 12;

16 (2) to engage Federal agencies and foster inter-  
17 agency collaboration in STEM education afterschool  
18 program investments;

19 (3) to recognize the important role that after-  
20 school programs offered by nonprofit and commu-  
21 nity-based organizations, science centers, museums,  
22 libraries, and other such entities, play in STEM edu-  
23 cation and to support their efforts;

1           (4) to involve institutions of higher education as  
2 partners in such efforts and foster increased collabo-  
3 ration; and

4           (5) to inspire young people to study and work  
5 in STEM subjects.

6 **SEC. 4. DEFINITIONS.**

7 In this Act:

8           (1) **AFTERSCHOOL OR STEM NETWORK.**—The  
9 term “afterschool or STEM network” means a coali-  
10 tion that fosters partnerships and provides support  
11 to afterschool program providers and STEM edu-  
12 cation providers to develop and sustain quality edu-  
13 cation programming for children and youth in after-  
14 school programs and STEM education programs.

15           (2) **AFTERSCHOOL PROGRAM.**—The term  
16 “afterschool program” means a structured program  
17 offered for elementary school, middle school, or sec-  
18 ondary school students when school is not in session,  
19 such as before or after school, on the weekend, or  
20 during the summer.

21           (3) **DIRECTOR.**—The term “Director” means  
22 the Director of the National Science Foundation.

23           (4) **ELEMENTARY SCHOOL.**—The term “elemen-  
24 tary school” has the meaning given the term in sec-

1       tion 9101 of the Elementary and Secondary Edu-  
2       cation Act of 1965 (20 U.S.C. 7801).

3           (5) MIDDLE SCHOOL.—The term “middle  
4       school” means a nonprofit institutional day or resi-  
5       dential school, including a public charter school, that  
6       provides middle grades education, as determined  
7       under State law.

8           (6) SECONDARY SCHOOL.—The term “sec-  
9       ondary school” has the meaning given the term in  
10      section 9101 of the Elementary and Secondary Edu-  
11      cation Act of 1965 (20 U.S.C. 7801).

12          (7) INSTITUTION OF HIGHER EDUCATION.—The  
13      term “institution of higher education” has the  
14      meaning given the term in section 102 of the Higher  
15      Education Act of 1965 (20 U.S.C. 1002).

16          (8) STEM.—The term “STEM” means science,  
17      technology, engineering, or mathematics, and in-  
18      cludes the fields of computer science and robotics.

19   **SEC. 5. AFTERSCHOOL STEM SUPPORT GRANT PROGRAM.**

20          (a) GOALS OF PROGRAM.—The goals of the after-  
21      school STEM grant program carried out under this Act  
22      are—

23           (1) to support the development and delivery of  
24      high-quality STEM education to populations under-  
25      represented in STEM fields;

1           (2) to leverage the expertise and infrastructure  
2 available to afterschool programs that include  
3 STEM content through afterschool or STEM net-  
4 works;

5           (3) to leverage existing Federal STEM edu-  
6 cation investments, as of the date of enactment of  
7 this Act, in order to encourage STEM-focused grant  
8 recipients to lend their time and expertise to after-  
9 school programs that include STEM content; and

10           (4) to provide hands-on learning and exposure  
11 to STEM research facilities and businesses through  
12 in-person or virtual distance-learning experiences.

13 (b) PROGRAM AUTHORIZED.—

14           (1) IN GENERAL.—From amounts appropriated  
15 to carry out this part and not reserved under para-  
16 graph (4), the Director shall award grants, on a  
17 competitive basis, to afterschool or STEM net-  
18 works—

19           (A) to support afterschool programs that  
20 include STEM content through the activities  
21 described in subsection (e); and

22           (B) to carry out the goals described in sub-  
23 section (a).

1           (2) DURATION.—Each grant awarded under  
2 this Act shall be for a period of not more than 3  
3 years.

4           (3) AMOUNTS.—The Director shall ensure that  
5 each grant awarded under this Act is in an amount  
6 that is sufficient to carry out the goals described in  
7 subsection (a).

8           (4) RESERVATION.—From the amounts appro-  
9 priated for this grant, the Director shall reserve 20  
10 percent of such funds to develop and support new  
11 afterschool or STEM networks in States or areas  
12 where such networks do not exist.

13       (c) APPLICATION.—

14           (1) IN GENERAL.—An afterschool or STEM  
15 network desiring a grant under subsection (b)(1)  
16 shall submit an application at such time, in such  
17 manner, and containing such information that the  
18 Director may require.

19           (2) CONTENTS.—The application described in  
20 paragraph (1) shall, at a minimum, include—

21               (A) a description of the status of after-  
22 school STEM programming in the State or area  
23 in which the afterschool or STEM network is  
24 located, including—



1 (i) the number of afterschool pro-  
2 grams in the State or area;

3 (ii) the number of such afterschool  
4 programs focused on STEM subjects and  
5 activities;

6 (iii) the number of students served by  
7 existing afterschool programs, as of the  
8 date of the application, in the State or  
9 area;

10 (iv) the number of students served by  
11 existing afterschool programs that include  
12 STEM content in the State or area;

13 (v) the unmet demand for afterschool  
14 programs in the State or area; and

15 (vi) the unmet demand for afterschool  
16 programs focused on STEM subjects and  
17 activities in the State or area;

18 (B) an analysis of existing and needed re-  
19 sources that identifies areas and populations  
20 most in need of opportunities for high-quality  
21 afterschool programs that include STEM con-  
22 tent;

23 (C) a description of the current and past  
24 work carried out by the afterschool or STEM  
25 network to support the needs of afterschool pro-

1           gram providers in the State or area served by  
2           the network;

3           (D) a detailed plan that describes initia-  
4           tives that shall be undertaken to—

5                   (i) support and grow afterschool pro-  
6                   grams that include STEM content; and

7                   (ii) leverage existing Federal invest-  
8                   ments in afterschool programs and STEM  
9                   education, as of the date of the application;

10          (E) a description of financial and other  
11          commitments that support expanded afterschool  
12          STEM programming in the State or area  
13          served by the network; and

14          (F) a description of any confirmed or po-  
15          tential partners that will work with the after-  
16          school or STEM network to carry out the ac-  
17          tivities under the grant.

18          (d) PRIORITY.—In awarding grants under subsection  
19 (b)(1), the Director shall give priority to applications from  
20 afterschool or STEM networks that—

21               (1) demonstrate a clear understanding of the  
22               afterschool programs and settings, and the status of  
23               afterschool programs that include STEM content, in  
24               the State or area to be served by the grant;

1           (2) have established working relationships with  
2           afterschool program and STEM education stake-  
3           holders in the State or area;

4           (3) are working to advance the availability of  
5           high-quality afterschool programs that include  
6           STEM content for under-served populations and  
7           populations underrepresented in STEM fields, in-  
8           cluding girls; and

9           (4) are leveraging Federal or other public in-  
10          vestments in STEM education or afterschool pro-  
11          gramming.

12          (e) USES OF FUNDS.—An afterschool or STEM net-  
13          work that receives a grant under subsection (b)(1) may  
14          use grant funds to carry out any of the following activities:

15               (1) Develop quality standards for STEM pro-  
16               gramming in afterschool programs and provide tech-  
17               nical assistance to afterschool programs to imple-  
18               ment such standards.

19               (2) Work with State education stakeholders to  
20               define and promote appropriate measurable out-  
21               comes for afterschool programs that include STEM  
22               content.

23               (3) Provide technical assistance to afterschool  
24               programs to start or grow their afterschool STEM

1 efforts and define appropriate learning outcomes for  
2 such efforts.

3 (4) Coordinate professional development for  
4 afterschool program educators by—

5 (A) identifying training programs that are  
6 available, as of the time of the identification,  
7 for afterschool program educators;

8 (B) working with partners to allow joint  
9 professional development with teachers at ele-  
10 mentary schools, middle schools, and secondary  
11 schools, as appropriate; and

12 (C) partnering with teacher training pro-  
13 grams to utilize afterschool programs for  
14 practicum experiences, employment placements,  
15 and other opportunities.

16 (5) Help afterschool program providers form  
17 strategic partnerships as needed to advance STEM  
18 learning in afterschool programs, including partner-  
19 ships with elementary schools, middle schools, sec-  
20 ondary schools, institutions of higher education (in-  
21 cluding community colleges and programs and  
22 schools of education), businesses, research facilities,  
23 national laboratories, and other appropriate entities.

24 (6) Create and disseminate tool kits to after-  
25 school programs wanting to form partnerships and

1 incorporate STEM professionals as mentors and role  
2 models that—

3 (A) provide technical assistance and guid-  
4 ance, including assistance in connecting after-  
5 school program providers with STEM research-  
6 ers and professionals who may be able to assist  
7 in STEM-focused activities; and

8 (B) include—

9 (i) examples of strong afterschool pro-  
10 grams that have incorporated such part-  
11 nerships to serve as models;

12 (ii) a list of potential partners that  
13 could assist in STEM-focused activities;

14 (iii) identified federally supported  
15 STEM education programs and research in  
16 the State or area served by the grant; and

17 (iv) guidance on how to engage STEM  
18 professionals, mentors, and role models in  
19 the program.

20 (7) Provide technical assistance to federally  
21 funded STEM researchers and professionals who  
22 wish to engage with afterschool programs that, at a  
23 minimum, includes—

1 (A) examples of partnerships between  
2 afterschool programs and institutions rich in  
3 STEM resources;

4 (B) a resource that provides a description  
5 of the afterschool program setting, the opportu-  
6 nities for engagement in afterschool programs,  
7 and the constraints of which the researchers or  
8 professionals need to be aware;

9 (C) how to find an afterschool program  
10 provider with which the researcher or profes-  
11 sional would like to engage;

12 (D) how to ensure an effective and produc-  
13 tive partnership with the afterschool provider  
14 through mutually beneficial engagement, and  
15 engage in a productive conversation with the  
16 afterschool provider to determine if the partner-  
17 ship will be productive;

18 (E) how to craft a mutually beneficial en-  
19 gagement and partnership; and

20 (F) guidance on how to measure appro-  
21 priate outcomes for afterschool programs and  
22 afterschool programs that include STEM con-  
23 tent.

24 (8) Any other activity, as proposed in the appli-  
25 cation and determined appropriate by the Director.

1 (f) REPORT.—Each afterschool or STEM network re-  
2 ceiving a grant under subsection (b)(1) shall submit an  
3 annual report to the Director regarding the progress of  
4 the grant.

5 **SEC. 6. FEDERAL PARTNERSHIP WITH AFTERSCHOOL PRO-**  
6 **GRAMS.**

7 Beginning not later than 180 days after the date of  
8 enactment of this Act, the Director shall provide informa-  
9 tion, to each recipient of a STEM research grant under  
10 the authority of the Director, on opportunities to engage  
11 with students in out-of-school-time programs, such as  
12 through mentorships. Such information shall include—

13 (1) a listing of all afterschool or STEM pro-  
14 gram networks in the region of the recipient;

15 (2) a toolkit that provides guidance to federally  
16 funded STEM researchers on how to engage and  
17 partner with afterschool STEM program providers  
18 and lend their time and expertise in afterschool pro-  
19 grams that include STEM content;

20 (3) information regarding how to create oppor-  
21 tunities to have students visit laboratories; and

22 (4) guidance regarding how to create age-ap-  
23 propriate research projects for students.

**1 SEC. 7. REPORT.**

2 By not later than 180 days after the date of enact-  
3 ment of this Act, the Director shall prepare and submit  
4 to Congress a report on Federal STEM investments in  
5 afterschool programs and the best practices for afterschool  
6 programs incorporating STEM subjects into their pro-  
7 grams.

○