#### 112TH CONGRESS 1ST SESSION

# S. 758

To establish a Science, Technology, Engineering, and Math (STEM) Master Teacher Corps program.

# IN THE SENATE OF THE UNITED STATES

APRIL 7 (legislative day, APRIL 5), 2011

Mr. Franken (for himself, Mr. Lieberman, and Mrs. Shaheen) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

# A BILL

To establish a Science, Technology, Engineering, and Math (STEM) Master Teacher Corps program.

- 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 "STEM Master Teacher
- 5 Corps Act of 2011".
- 6 SEC. 2. FINDINGS.
- 7 Congress finds the following:
- 8 (1) Numerous recent reports by national advi-
- 9 sory groups, including the President's Council of Ad-
- 10 visors on Science and Technology and National

- Academies' committees, have highlighted the need to raise student achievement in STEM fields to enable the United States to maintain its competitive edge in the global economy.
  - (2) Nearly all of the top 30 fastest growing occupations require science, technology, engineering, or mathematics skills, according to the Bureau of Labor Statistics.
  - (3) Recent standardized tests show United States students' mathematics and science performance is only average or below average compared with their international peers. American students placed 25th in mathematics and 17th in science out of 34 Organisation for Economic Co-operation and Development countries in the 2009 Program for International Student Assessment.
  - (4) Too few American students graduate from high school with the interest and the preparation to successfully pursue STEM degrees in college. Well over half of college students in China and Japan major in STEM fields, compared with only a third of U.S. students.
  - (5) Several researchers, including at Stanford University, have found that the effects of well-prepared teachers on student achievement can be

- stronger than the influences of student background factors, such as poverty, language background, and minority status.
  - (6) The Harvard Graduate School of Education report "Who Stays in Teaching and Why" cites research that shows more young people would consider teaching if it offered more opportunities for advancement, and that if schools fail to offer teachers these opportunities throughout their teaching careers, they may risk losing them permanently. It also reports that well implemented mentoring and induction programs provide the support novices need to feel satisfied and remain in their schools.
  - (7) Researchers at the University of Pennsylvania have found that STEM teachers migrate within the teaching profession to better paying jobs at better-funded schools, resulting in local imbalances and leaving schools in high-poverty communities struggling to find knowledgeable teachers.
  - (8) Individuals with strong STEM skills have opportunities for more lucrative careers outside of teaching. According to the Organisation for Economic Co-operation and Development (OECD), the United States ranks in the bottom third of OECD countries in terms of teacher salary relative to per

1	capita GDP. Furthermore, data from the National
2	Association of Colleges and Employers show the me-
3	dian salary offered to recent college graduates in
4	certain STEM-related fields, including physics, com-
5	puter science, accounting, and engineering, is
6	\$24,000 higher than that offered to new secondary
7	school teachers and \$30,000 higher than that of-
8	fered to new elementary school teachers.
9	SEC. 3. STEM MASTER TEACHER CORPS.
10	Subpart 5 of part A of title II of the Elementary and
11	Secondary Education Act of 1965 (20 U.S.C. 6651 et
12	seq.) is amended—
13	(1) by inserting before section 2151 the fol-
14	lowing:
15	"CHAPTER A—NATIONAL ACTIVITIES OF
16	DEMONSTRATED EFFECTIVENESS";
17	and
18	(2) by adding at the end the following:
19	"CHAPTER B—STEM MASTER TEACHER
20	CORPS
21	"SEC. 2155. PURPOSE.
22	"The purpose of this chapter is to establish a STEM
23	Master Teacher Corps program that—

1	"(1) elevates the status of the STEM teaching
2	profession by recognizing and rewarding outstanding
3	STEM teachers;
4	"(2) attracts and retains effective STEM teach-
5	ers, particularly in high-need schools, by offering
6	them additional compensation, instructional re-
7	sources, and instructional leadership roles; and
8	"(3) creates a network of outstanding STEM
9	teacher-leaders who will—
10	"(A) share best practices and resources;
11	"(B) take on leadership responsibilities in
12	their schools, districts, States (if part of the
13	participating area), or consortia with the au-
14	thority to provide professional support to their
15	STEM colleagues not participating in the
16	STEM Master Teacher Corps;
17	"(C) aid in the development and retention
18	of beginning teachers by serving as their role
19	models and providing them with instructional
20	support; and
21	"(D) inform the development of STEM
22	education policy.
23	"SEC. 2156. DEFINITIONS.
24	"In this chapter:

1	"(1) ELIGIBLE ENTITY.—The term 'eligible en-
2	tity' means a consortium of local educational agen-
3	cies or 1 or more State educational agencies, acting
4	in partnership with 1 or more—
5	"(A) institutions of higher education; or
6	"(B) nonprofit organizations with a dem-
7	onstrated record of success in preparing or im-
8	proving the effectiveness of STEM teachers.
9	"(2) High-need school.—The term 'high-
10	need school' means a public school, which may be a
11	public charter school, that meets 1 or more of the
12	following criteria:
13	"(A) Not less than 40 percent of the stu-
14	dents enrolled at the school—
15	"(i) receive or are eligible to receive a
16	free or reduced price lunch under the Rich-
17	ard B. Russell National School Lunch Act
18	(42 U.S.C. 1751 et seq.); or
19	"(ii) are from low-income families, as
20	determined using 1 of the measures of pov-
21	erty specified under section 1113(a)(5).
22	"(B) The school is among the lowest per-
23	forming 10 percent of schools in the State in
24	which it is located.

1	"(C) In the case of a public high school,
2	the school has a graduation rate of 65 percent
3	or less.
4	"(D) In the case of a public school con-
5	taining middle grades, the school feeds into a
6	public high school that has a graduation rate of
7	65 percent or less.
8	"(3) Participating area.—The term 'partici-
9	pating area' means—
10	"(A) in the case of an eligible entity that
11	includes a State educational agency or consor-
12	tium of State educational agencies, the State or
13	States; or
14	"(B) in the case of an eligible entity that
15	includes a consortium of local educational agen-
16	cies, the area served by such agencies.
17	"(4) Rural school.—The term 'rural school'
18	means a public school—
19	"(A) designated with a school locale code
20	of Distant Town, Remote Town, Fringe Rural,
21	Distant Rural, or Remote Rural; and
22	"(B) served by a local educational agency
23	in which not less than two-thirds of the stu-
24	dents served by the agency attend a school des-

1	ignated with 1 of the school locale codes listed
2	in subparagraph (A).
3	"(5) STEM.—The term 'STEM' means science,
4	technology, engineering, and mathematics.
5	"SEC. 2157. STEM MASTER TEACHER CORPS PROGRAM.
6	"(a) In General.—
7	"(1) Grants authorized.—The Secretary, in
8	consultation with the Director of the National
9	Science Foundation and the heads of other appro-
10	priate Federal agencies, as determined by the Sec-
11	retary, shall establish a STEM Master Teacher
12	Corps program by awarding, on a competitive basis,
13	1 or more grants of not less than \$15,000,000 each
14	to eligible entities to enable the eligible entities to
15	establish the program, in accordance with section
16	2159.
17	"(2) Planning grants.—The Secretary may
18	award planning grants to eligible entities to enable
19	the entities to make plans to establish the program,
20	in accordance with section 2159.
21	"(b) Duration of Grant.—
22	"(1) IN GENERAL.—A grant awarded under
23	this chapter shall be for a period of not more than
24	5 years.
25	"(2) Review.—The Secretary shall—

"(A) review, 3 years after an eligible entity
is awarded a grant under this chapter, the performance of the entity during the 3-year period;
and

"(B) fund the remaining grant period for such entity if the Secretary determines, based on such review, that the entity is achieving satisfactory results.

# "(c) Matching Requirement.—

"(1) IN GENERAL.—Except as provided in paragraph (2), an eligible entity that receives a grant under this chapter shall provide, from non-Federal sources, an amount equal to not less than 50 percent of the amount of the grant, which may be provided in cash or in-kind, to carry out the activities supported by the grant.

### "(2) Exception.—

"(A) IN GENERAL.—The Secretary may waive the 50 percent matching requirement under paragraph (1) for an eligible entity that the Secretary determines is unable to meet such requirement. The Secretary shall set a matching requirement for such eligible entities according to the sliding scale described in subparagraph (B).

1	"(B) SLIDING SCALE.—The amount of a
2	match under subparagraph (A) shall be estab-
3	lished based on a sliding fee scale that takes
4	into account—
5	"(i) the relative poverty of the popu-
6	lation to be targeted by the eligible entity;
7	and
8	"(ii) the ability of the eligible entity to
9	obtain such matching funds.
10	"(3) Consideration.—The Secretary shall not
11	consider an eligible entity's ability to match funds
12	when determining which eligible entities will receive
13	grant awards under this chapter.
14	"SEC. 2158. APPLICATION.
15	"(a) In General.—An eligible entity desiring a
16	grant under this chapter shall submit an application to
17	the Secretary at such time, in such manner, and con-
18	taining such information as the Secretary may require.
19	"(b) Contents.—An application submitted under
20	this section shall include—
21	"(1) a description of the STEM Master Teach-
22	er Corps program that the eligible entity intends to
23	carry out, including the number of Corps members
24	the entity intends to select, the intended distribution
25	of subjects and grade levels taught, the geographic

- and economic characteristics of the local educational agencies that are part of the participating area, such as the rural-urban continuum codes and proportion of high-need schools served, and the type of activities proposed for recruitment of Corps members;
  - "(2) a description of the roles and responsibilities that each participating local educational agency, State, institution of higher education, or nonprofit organization, as applicable, will have;
  - "(3) a demonstration that the entity has sufficient capacity to carry out the activities described in section 2159;
  - "(4) a description of the member selection process and criteria that the applicant will use to select members of the STEM Master Teacher Corps, in accordance with section 2159(b);
  - "(5) a description of how the eligible entity intends to facilitate networking and sharing of best practices and educational resources relating to STEM education among Corps members, particularly at rural schools, if applicable, and make a selection of these best practices and resources more widely available to other teachers and the STEM educational community, including through electronic means;

1	"(6) a demonstration that the entity has a clear
2	plan for—
3	"(A) offering research-based professional
4	development to Corps members, including train-
5	ing on instructional leadership, mentoring, en-
6	gaging and effectively teaching historically
7	underachieving or underrepresented groups in
8	STEM fields, such as girls, minorities, low-in-
9	come students, English language learners, and
10	students with disabilities, and effective STEM
11	teaching methods, such as incorporating hands-
12	on STEM projects into their lesson plans; and
13	"(B) tracking the effectiveness of such
14	professional development;
15	"(7) a demonstration that the entity has a clear
16	plan for evaluating the impact of the professional
17	support provided by STEM Master Teacher Corps
18	members to other teachers in their school, district,
19	State (if part of the participating area), or consor-
20	tium;
21	"(8) a description of how the local educational
22	agencies and schools served by the eligible entity in-
23	tend to align STEM Master Teacher Corps mem-
24	bers' duties with school systems and activities al-

1	ready in place, if applicable, such as professional de-
2	velopment and mentoring;
3	"(9) an explanation of how STEM Master
4	Teacher Corps members will be afforded the time,
5	authority, and resources to fulfill requirements
6	under the program, and how other teachers will be
7	afforded the time to receive professional support
8	from Corps members;
9	"(10) a demonstration that the entity has a
10	clear plan for oversight to ensure that STEM Mas-
11	ter Teacher Corps members carry out the respon-
12	sibilities described in section 2159(c) to the fullest
13	extent practicable, and a description of the actions
14	to be taken if a member does not carry out such re-
15	sponsibilities; and
16	"(11) a description of how the grant funds will
17	be financially managed.
18	"(c) Criteria for Awarding Grants.—
19	"(1) IN GENERAL.—The Secretary shall award
20	grants under this chapter on the basis of merit con-
21	sidering, at a minimum, the following:
22	"(A) The extent to which the local edu-
23	cational agencies that are part of the eligible
24	entity are committed to integrating the pro-
25	gram into existing school structures, policies,

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1	operations, and budgets, such as by enabling
2	STEM Master Teacher Corps members to take
3	on leadership roles in their schools, districts,
4	States, if part of the participating area, or con-
5	sortia, in addition to their classroom duties, in-
6	cluding assisting in the development and imple-
7	mentation of professional development activities
8	and driving the instructional program of the
9	school.
10	"(B) The quality of the proposed profes-
11	sional development, teacher leadership and
12	mentorship activities, and networking opportu-

- "(C) Demonstration that the local educational agencies and schools they serve have removed barriers to full participation in the program, including affording Corps members and the teachers they mentor the time to par-
- "(D) The number and quality of the individuals that will be served by the program.

ticipate in activities required by the program.

- "(E) The capacity of the eligible entity to effectively carry out the program.
- "(2) Priority.—In awarding grants under this chapter, the Secretary shall give priority to—

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nities.

1	"(A) eligible entities that intend to include
2	large numbers of teachers in the STEM Master
3	Teacher Corps; and
4	"(B) eligible entities that intend to include
5	rural schools, particularly high-need rural
6	schools, in the participating area to be served.
7	"SEC. 2159. REQUIRED USE OF FUNDS.
8	"(a) In General.—An eligible entity receiving a
9	grant under this chapter shall use grant funds to—
10	"(1) administer the selection of teachers for
11	membership in the STEM Master Teacher Corps, in
12	accordance with the requirements of subsection (b);
13	"(2) provide compensation to each public school
14	teacher who is selected and serves as a member of
15	the STEM Master Teacher Corps, in recognition of
16	the teacher's teaching accomplishments, leadership,
17	and increased responsibilities, which amount shall—
18	"(A) supplement, and not supplant, the
19	teacher's base salary; and
20	"(B) be equal to—
21	"(i) in the case of a teacher who
22	teaches at a high-need public school, in-
23	cluding a high-need charter school,
24	\$15,000 per year for each year the teacher
25	serves as a member of the Corps; and

1 "(ii) in the case of a teacher who
2 teaches at a public school, including a
3 charter school, that is not a high-need
4 school, \$5,000 per year for each year the
5 teacher serves as a member of the Corps;
6 "(3) provide research-based professional devel-

- "(3) provide research-based professional development activities for members of the STEM Master Teacher Corps, as described in subsection 2158(b)(6), and track the effectiveness of such professional development in order to determine whether to alter professional development activities;
- "(4) provide discretionary resources for STEM Master Teacher Corps members at high-need public schools to use in their classrooms and schools, including for afterschool activities, to enrich STEM education and to facilitate long-distance networking, mentoring, and sharing of best practices, including equipment and technology;
- "(5) assist in coordinating instructional leadership roles for STEM Master Teacher Corps members and mentoring relationships between STEM Master Teacher Corps members and other teachers in the same school, school district, State, if part of the participating area, or consortium in which the Corps members serve as instructional leaders;

1	"(6) facilitate efforts by STEM Master Teacher
2	Corps members to inform STEM education policy at
3	the national, State, and local levels;
4	"(7) help defray costs associated with affording
5	STEM Master Teacher Corps members the time to
6	fulfill their duties as Corps members; and
7	"(8) support other activities that advance the
8	purpose of this chapter.
9	"(b) Selecting Members of the STEM Master
10	TEACHER CORPS.—
11	"(1) Selection criteria for corps mem-
12	BERS.—The eligible entity shall select, as members
13	of the STEM Master Teacher Corps, exemplary
14	STEM teachers at the elementary school and sec-
15	ondary school levels who teach in the participating
16	area, which may also include special education
17	teachers and teachers of English language learners
18	who teach a STEM subject. In selecting the mem-
19	bers, the eligible entity shall—
20	"(A) make decisions based on the teach-
21	er's—
22	"(i) ability to improve student aca-
23	demic achievement in the STEM fields, as
24	demonstrated by, if applicable, student
25	academic growth in such fields;

1	"(ii) ability to enhance student en-
2	gagement in such fields;
3	"(iii) record of leadership in the
4	teacher's school and involvement in profes-
5	sional and outreach activities;
6	"(iv) record of teaching students not
7	on grade level or not on track to graduate
8	college and career ready; and
9	"(v) demonstrated ability to facilitate
10	student academic achievement growth with
11	the students described in clause (iv), where
12	such measures are available; and
13	"(B) evaluate the teacher's ability and
14	record based on multiple measures, such as—
15	"(i) teacher evaluations of pedagogical
16	skills;
17	"(ii) an assessment of content knowl-
18	edge;
19	"(iii) the performance and improve-
20	ment of the teacher's students on tests;
21	"(iv) demonstration of practical pro-
22	fessional experience in the teacher's dis-
23	cipline, such as having worked in industry
24	or research;

1	"(v) involvement in STEM discipline
2	professional societies;
3	"(vi) STEM outreach and community
4	involvement; and
5	"(vii) certification by the National
6	Board for Professional Teaching Stand-
7	ards, or other similar certification, as a
8	high-performing teacher.
9	"(2) Overall corps membership require-
10	MENTS.—An eligible entity receiving a grant under
11	this chapter shall ensure that—
12	"(A) not more than 5 percent of the
13	STEM teachers who teach in the participating
14	area are members of the Corps;
15	"(B) not less than 75 percent of the
16	STEM Master Teacher Corps members are
17	teachers at high-need schools;
18	"(C) the proportion of STEM Master
19	Teacher Corps members in the participating
20	area who teach at rural high-need schools is not
21	less than the proportion of all teachers who
22	teach at rural high-need schools in the partici-
23	pating area;
24	"(D) there are multiple cohorts of STEM
25	Master Teacher Corps members; and

1 "(E) the STEM Master Teacher Corps in-2 cludes teachers from each of science, technology, engineering, and mathematics, if teach-3 4 ers from each of these disciplines meeting the 5 standards of Corps membership are available in 6 the participating area. 7 Participation OF PRIVATE SCHOOL TEACHERS.—An eligible entity may select STEM 8 9 teachers who teach at private schools in the participating area to be members of the STEM Master 10 11 Teacher Corps, except that— "(A) not more than 5 percent of teachers 12 13 selected as STEM Master Teacher Corps mem-14 bers shall be teachers at private schools; and "(B) private school teachers shall not be 15 16 eligible for compensation described in sub-17 section (a)(2), discretionary resource funds de-18 scribed in subsection (a)(4), or for defrayment 19 funds described in subsection (a)(7). 20 "(c) Corps Member Requirements.—Each teach-21 er selected to be a member of the STEM Master Teacher 22 Corps who wishes to join the Corps shall enter into an 23 agreement with the eligible entity, under which the teacher shall, as a condition of receiving the compensation de-

scribed in subsection (a)(2) and the discretionary re-

- 1 sources described in subsection (a)(4), agree to carry out 2 the responsibilities of a master teacher as required by the
- 3 eligible entity, including—

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- 4 "(1) participating in professional development 5 activities offered by the program;
- 6 "(2) networking and sharing best practices and 7 educational resources with other members of the 8 STEM Master Teacher Corps; and
  - "(3) contributing to the professional development of the teacher's colleagues, which may include providing school-based professional support to other STEM teachers through regular weekly professional development sessions and individual coaching, where possible, leading professional learning communities, and taking on other instructional leadership roles in the teacher's school, district, State, if part of the participating area, or consortium.

### "(d) Collection for Noncompliance.—

- "(1) MONITORING COMPLIANCE.—Each eligible entity that receives a grant under this chapter shall monitor whether each teacher the entity selects to be a member of the STEM Master Teacher Corps is in compliance with the Corps member requirements described in subsection (c).
- 25 "(2) Collection of Repayment.—

1	"(A) IN GENERAL.—A teacher selected to
2	be a member of the STEM Master Teacher
3	Corps shall repay the additional compensation
4	provided for a school year described in sub-
5	section (a)(2) to the eligible entity if—
6	"(i) the entity finds the teacher not in
7	compliance with the Corps member re-
8	quirements described in subsection (c) and
9	the entity determines the teacher should no
10	longer be a member of the Corps for such
11	year; or
12	"(ii) the teacher withdraws during
13	such year from membership in the Corps
14	without an accepted excuse, as determined
15	by the eligible entity.
16	"(B) Compensation returned to the
17	TREASURY.—
18	"(i) In general.—Except as pro-
19	vided in clause (ii), an eligible entity that
20	receives repaid compensation under sub-
21	paragraph (A) shall return such compensa-
22	tion to the United States Treasury.
23	"(ii) Administrative costs.—An el-
24	igible entity that receives repaid compensa-
25	tion under subparagraph (A) may retain a

1	percentage, determined by the Secretary,
2	of such repayment to defray administrative
3	costs associated with the collection.
4	"SEC. 2160. REPORT AND EVALUATION.
5	"(a) Administrative and Reporting Costs.—Of
6	the amounts appropriated for this chapter for any fiscal
7	year, the Secretary may use not more than 6 percent of
8	the funds appropriated for such fiscal year for administra-
9	tive costs and report and evaluation costs under this sec-
10	tion, except that the Secretary may use not more than 3
11	percent of the funds appropriated for such fiscal year for
12	administrative costs.
13	"(b) Reports to the Secretary.—
14	"(1) In general.—Each eligible entity receiv-
15	ing a grant under this chapter shall provide an an-
16	nual report to the Secretary that—
17	"(A) summarizes the activities assisted
18	under the grant and program outcomes; and
19	"(B) includes, with respect to each mem-
20	ber of the STEM Master Teacher Corps, the
21	following:
22	"(i) The name of the member.
23	"(ii) The school at which the member
24	teaches and the location of such school.

1	"(iii) The subject area the teacher
2	teaches.
3	"(iv) The grade level the teacher
4	teaches.
5	"(2) Publication.—Each eligible entity receiv-
6	ing a grant under this chapter shall publicize the in-
7	formation described in paragraph (1)(B).
8	"(c) IES EVALUATION.—The Secretary, acting
9	through the Director of the Institute of Education
10	Sciences, shall—
11	"(1) evaluate the implementation and impact of
12	the program under this chapter, particularly with re-
13	gard to the program's success in achieving the pur-
14	pose described in section 2155;
15	"(2) identify optimal strategies for the design,
16	implementation, and continuing development of the
17	STEM Master Teacher Corps program; and
18	"(3) identify best practices for developing, sup-
19	porting, and retaining STEM teachers based on les-
20	sons learned from the program.
21	"(d) DISSEMINATION.—The Secretary shall dissemi-
22	nate findings from the evaluation conducted under sub-
23	section (c) to the STEM education field and make the
24	findings publicly available.

1	"(e) Reports to Congress.—Not later than 4
2	years after the establishment of the program under this
3	chapter, and not later than 2 years thereafter, the Sec-
4	retary shall prepare and submit to the Committee on Edu-
5	cation and the Workforce and the Committee on Science,
6	Space, and Technology of the House of Representatives
7	and the Committee on Commerce, Science, and Transpor-
8	tation and the Committee on Health, Education, Labor,
9	and Pensions of the Senate, a report that summarizes—
10	"(1) the activities assisted under the program
11	under this chapter;
12	"(2) the outcomes of the program; and
13	"(3) any recommendations regarding changes
14	to, the termination of, or the continuation and ex-
15	pansion of the program.
16	"SEC. 2161. AUTHORIZATION OF APPROPRIATIONS.
17	"There are authorized to be appropriated to carry out

"There are authorized to be appropriated to carry out 18 this chapter \$35,000,000 for fiscal year 2012 and such 19 sums as may be necessary for each of the 4 succeeding 20 fiscal years.".

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