To improve student academic achievement in science, technology, engineering, and mathematics subjects.

IN THE SENATE OF THE UNITED STATES

OCTOBER 6, 2011

Mr. MERKLEY (for himself, Mr. FRANKEN, Mr. BEGICH, Mrs. GILLIBRAND, and Mr. CASEY) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

A BILL

To improve student academic achievement in science, technology, engineering, and mathematics subjects.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the “Preparing Students for Success in the Global Economy Act of 2011”.

SEC. 2. PURPOSE.

The purpose of this Act is to improve student academic achievement in science, technology, engineering, and mathematics subjects by—
(1) improving instruction in such subjects in preschool through grade 12;

(2) improving student engagement in, and increasing student access to, courses in such subjects;

(3) improving the quality and effectiveness of classroom instruction by recruiting, training, and supporting highly effective teachers and providing robust tools and supports for students and teachers in such subjects;

(4) closing student achievement gaps, and preparing more students to be prepared for postsecondary education and careers, in such subjects; and

(5) recognizing that science, technology, engineering, and mathematics are diverse subject areas and that science, technology, engineering, and mathematics education programs must expose students to content and skills in a host of constantly changing and evolving science, technology, engineering, and mathematics content areas, as specifically identified by each State or eligible entity in section 5.

SEC. 3. DEFINITIONS.

In this Act:

(1) ESEA DEFINITIONS.—The terms “elementary school”, “limited English proficient”, “local educational agency”, “secondary school”, “Sec-
retary”, and “State educational agency” have the meanings given the terms in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(2) **Eligible Entity**.—The term “eligible entity” means—

(A) a State educational agency; or

(B) a State educational agency in partnership with—

(i) another State educational agency;

or

(ii) a consortium of State educational agencies.

(3) **Eligible Subgrantee**.—The term “eligible subgrantee” means—

(A) a high-need local educational agency;

(B) an educational service agency serving more than 1 high-need local educational agency;

or

(C) a consortium of high-need local educational agencies.

(4) **Outside Partner**.—The term “outside partner” means an entity that has expertise and a demonstrated record of success in improving student learning and engagement in the identified subjects
described in section 5(b)(2), including any of the following:

(A) A nonprofit or community-based organization.

(B) A business.

(C) A nonprofit cultural organization, such as a museum or learning center.

(D) An institution of higher education.

(E) An educational service agency.

(F) Another appropriate entity.

(5) STATE.—The term “State” means—

(A) any of the 50 States;

(B) the District of Columbia;

(C) the Bureau of Indian Education; or

(D) the Commonwealth of Puerto Rico.

SEC. 4. GRANTS; ALLOTMENTS.

(a) RESERVATIONS.—

(1) IN GENERAL.—From the amounts appropriated under section 12 for a fiscal year, the Secretary shall reserve—

(A) 10 percent to carry out the STEM master teacher corps grant program under section 7;

(B) 2 percent to carry out technical assistance to States, including technical assistance
with implementation of programs consistent with the purpose of this Act;

(C) 3 percent to the Institute of Education Sciences to enable the Director of the Institute of Education Sciences to carry out the evaluation activities described in section 9; and

(D) if funds are not awarded by formula, as described in subsection (c)(1), 5 percent for State capacity-building grants in accordance with paragraph (2).

(2) CAPACITY-BUILDING GRANTS.—

(A) IN GENERAL.—In any year for which funding is distributed competitively, as described in subsection (b)(1), the Secretary may award 1 capacity-building grant to each State that does not receive a grant under subsection (b), on a competitive basis, to enable such States to become more competitive in future years.

(B) DURATION.—Grants awarded under subparagraph (A) shall be for a period of 1 year.

(b) COMPETITIVE GRANTS.—

(1) IN GENERAL.—For each fiscal year for which the amount appropriated to carry out this Act
is less than $500,000,000, the Secretary shall award
grants, on a competitive basis, to eligible entities to
enable such eligible entities to carry out the activi-
ties described in this Act.

(2) DURATION.—Grants awarded under this
subsection shall be for a period of not more than 3
years.

(3) RENEWAL.—

(A) IN GENERAL.—If an eligible entity
demonstrates progress, as measured by the
metrics described in section 8(a), the Secretary
may renew a grant for an additional 2-year pe-
riod.

(B) REDUCED FUNDING.—Grant funds
awarded under subparagraph (A) shall be
awarded at a reduced amount.

(c) FORMULA GRANTS.—

(1) IN GENERAL.—For each fiscal year for
which the amount appropriated to carry out this Act
is equal to or more than $500,000,000, the Sec-
retary shall award grants to States, based on the
formula described in paragraph (2).

(2) DISTRIBUTION OF FUNDS.—The Secretary
shall allot to each State—
(A) an amount that bears the same relationship to 35 percent of the excess amount as the number of individuals ages 5 through 17 in the State, as determined by the Secretary on the basis of the most recent satisfactory data, bears to the number of those individuals in all such States, as so determined; and

(B) an amount that bears the same relationship to 65 percent of the excess amount as the number of individuals ages 5 through 17 from families with incomes below the poverty line, in the State, as determined by the Secretary on the basis of the most recent satisfactory data, bears to the number of those individuals in all such States, as so determined.

(3) FUNDING MINIMUM.—No State receiving an allotment under this subsection may receive less than one-half of 1 percent of the total amount allotted under paragraph (1) for a fiscal year.

(4) REALLOTMENT OF UNUSED FUNDS.—If a State does not successfully apply for or receive an allotment under this subsection for a fiscal year, the Secretary shall reallocate the amount of the State’s allotment to the remaining States in accordance with this subsection.
SEC. 5. APPLICATIONS.

(a) In General.—Each eligible entity or State desiring a grant under this Act, whether through a competitive grant under section 4(b) or through an allotment under section 4(c), shall submit an application to the Secretary at such time, in such manner, and accompanied by such information as the Secretary may require.

(b) Contents.—At a minimum, an application submitted under subsection (a) shall include the following:

(1) A description of the needs identified by the State or eligible entity, based on a State analysis, which—

(A) may include results from a preexisting analysis of science, technology, engineering, and mathematics education quality and outcomes in the State or States served by the eligible entity;

(B) shall include data for elementary school and secondary school grades, as applicable and to the extent that such data are available, on—

(i) student achievement in science and mathematics, including such data collected in accordance with the requirements of section 1111(b) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7911(b)).
6311(b)), and student achievement in technology and engineering;

(ii) science, technology, engineering, and mathematics teacher evaluation results or ratings;

(iii) student access to mathematics and science courses needed to enroll in credit-bearing coursework at institutions of higher education in the State or States served by the eligible entity;

(iv) access to science, technology, engineering, and mathematics courses for students in preschool through grade 12 who—

(I) are eligible to receive a free or reduced priced lunch under the Richard B. Russell National School Lunch Act (42 U.S.C. 1751 et seq.); or

(II) come from families with an income that is below the poverty line;

(v) student achievement gaps in science, technology, engineering, and mathematics subjects;

(vi) the percentage of students successfully—
(I) completing Advanced Placement (AP) or International Baccalaureate (IB) courses in science, technology, engineering, and mathematics subjects; or

(II) completing rigorous postsecondary education courses in science, technology, engineering, and mathematics subjects;

(vii) rates of college remediation in mathematics; and

(viii) teacher shortages and teacher distribution among local educational agencies and schools in science, technology, engineering, and mathematics subjects;

(C) shall include a review of the industry and business workforce needs in the State or States served by the eligible entity in jobs that require knowledge or training in science, technology, engineering, and mathematics subjects;

(D) shall include an analysis of the quality of preservice preparation at all public institutions of higher education (including alternative pathways to teacher licensure or certification) for individuals preparing to teach science, tech-
technology, engineering, and mathematics subjects in a preschool, elementary school, or secondary school in the State; and

(E) shall include an analysis of the implementation of any multi-tiered systems of support that have been employed in the State or States served by the eligible entity to address the learning needs of students in any science, technology, engineering, and mathematics subjects.

(2) An identification of the specific science, technology, engineering, and mathematics subjects that the State or eligible entity will address through the activities described in section 6, consistent with the needs identified under paragraph (1) (referred to in this Act as “identified subjects”).

(3) A description, in a manner that addresses any needs identified under paragraph (1), of—

(A) how grant funds will be used by the State or eligible entity to improve instruction in identified subjects using evidence-based programs of instruction that are aligned with high-quality standards and assessments;

(B) how grant funds will be used to support subgrantees and other high-need local edu-
national agencies in the employment of multi-
tiered systems of support to provide early inter-
vening services and to increase student achieve-
ment in identified subjects;

(C) the procedures and criteria that the
State or eligible entity will use for reviewing ap-
plications and awarding funds to eligible sub-
grantees, including how the State or eligible en-
tity will ensure that subgrants will be provided
to high-need local educational agencies and
high-need schools;

(D) how the State’s or eligible entity’s ac-
tivities and subgrants will be coordinated with
other Federal, State, and local programs and
activities, including career and technical edu-
cation programs authorized under the Carl D.
Perkins Career and Technical Education Act of
2006 (20 U.S.C. 2301 et seq.);

(E) the technical assistance that the State
or eligible entity will provide to subgrantees to
support the activities undertaken by the sub-
grantees;

(F) how the State or eligible entity will
evaluate the activities funded, both at the State
and subgrantee level, with funds provided under
this Act, and in a manner consistent with any
evaluation activities carried out by the Institute
of Education Sciences under section 9, or the
National Science Foundation;

(G) how the State or eligible entity will al-
locate funds in a manner that will provide serv-
ices to both elementary schools and secondary
schools;

(H) how the State or eligible entity will
provide targeted support to improve instruction
in high-need local educational agencies and
high-need schools;

(I) how the State or eligible entity’s pro-
posed project will ensure an increase in access
for students who are traditionally underrep-
resented in science, technology, engineering,
and mathematics subject fields (including fe-
male students, minority students, students who
are limited English proficient, students who are
children with disabilities, and students from
low-income families) to high-quality courses and
other learning experiences in 1 or more of the
identified subjects; and

(J) evidence that the State or eligible enti-
ty has involved a variety of stakeholders in the
development of the application and a description of how the State or eligible entity will continue to involve stakeholders in any education reform efforts related to science, technology, engineering, and mathematics instruction.

(4) Assurances that the State or eligible entity will monitor implementation of approved subgrantee plans.

(e) ADDITIONAL FUNDING.—A State or eligible entity that submits a request to use the additional State activities reservation described in section 6(d)(2), shall provide, in a manner that addresses the needs identified under subsection (b)(1), a description of the activities that the eligible entity will carry out with such funds, consistent with section 6.

SEC. 6. AUTHORIZED ACTIVITIES.

(a) REQUIRED ACTIVITIES.—Each State or eligible entity that receives a grant under this Act shall use the grant funds to carry out each of the following activities:

(1) Increasing access for students in preschool through grade 12 that belong to groups that are traditionally underrepresented in science, technology, engineering, and mathematics subject fields (including female students, minority students, students who are limited English proficient, students who are chil-
dren with disabilities, and students from low-income families) to high-quality courses in the identified subjects.

(2) Implementing evidence-based programs of instruction based on high-quality standards and assessments in the identified subjects.

(3) Providing professional development and other comprehensive systems of support for teachers and school leaders to promote high-quality instruction and instructional leadership in the identified subjects.

(4) Providing technical assistance to subgrantees and other high-need schools and local educational agencies in order to improve student achievement and narrow achievement gaps in identified subjects, including through—

(A) the development and implementation of multi-tiered systems of support; and

(B) the development of curricula consistent with the principals of universal design for learning as defined in section 103 of the Higher Education Act of 1965.

(b) Permissible Activities.—Each State or eligible entity that receives a grant under this Act may use
the grant funds to carry out 1 or more of the following activities:

(1) Recruiting qualified teachers and instructional leaders who are trained in identified subjects, including teachers who have transitioned into the teaching profession from a career in science, technology, engineering, and mathematics fields.

(2) Providing induction and mentoring services to new teachers in identified subjects.

(3) Developing instructional supports, such as curricula and assessments, which shall be evidence-based and aligned with State academic standards under section 1111(b) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6311(b)), and may include Internet-based curricula and Internet-based instructional supports.

(4) Implementing an interdisciplinary approach, by integrating instruction in 1 or more science, technology, engineering, and mathematics subjects with reading, English language arts, or instruction in other core academic subjects (as defined in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801)) and nonecore academic subjects.

(c) Subgrants.—
(1) IN GENERAL.—Each State or eligible entity that receives a grant under this Act shall award subgrants, on a competitive basis, to eligible subgrantees.

(2) MINIMUM SUBGRANT.—A State or eligible entity shall award subgrants under this subsection that are of sufficient size and scope to support high-quality, evidence-based, effective programs that are consistent with the purpose of this Act.

(3) SUBGRANTEE APPLICATION.—

(A) IN GENERAL.—Each eligible subgrantee desiring a subgrant under this subsection shall submit an application to the State or eligible entity at such time, in such manner, and accompanied by such information as the State or eligible entity may require.

(B) CONTENTS OF SUBGRANTEE APPLICATION.—At a minimum, the application described in subparagraph (A) shall include the following:

(i) A description of the activities that the eligible subgrantee will carry out, and how such activities will improve teaching and student academic achievement in the
identified subjects, in a manner consistent with scientifically valid research.

(ii) A description of how the eligible subgrantee will use funds provided under this subsection to serve students and teachers in high-need schools.

(iii) A description of how funds provided under this subsection will be coordinated with other Federal, State, and local programs and activities, including career and technical education programs authorized under the Carl D. Perkins Career and Technical Education Act of 2006 (20 U.S.C. 2301 et seq.).

(iv) If the eligible subgrantee is working with outside partners, a description of how such outside partners will be involved in improving instruction and increasing access to high-quality learning experiences in the identified subjects.

(4) Subgrantee use of funds.—

(A) Required use of funds.—Each eligible subgrantee that receives a subgrant under this subsection shall use the subgrant funds to carry out activities for students in preschool
through grade 12, consistent with the activities described in the subgrantee’s application, which shall include—

(i) high-quality teacher and instructional leader recruitment, support, evaluation, and professional development in the identified subjects;

(ii) professional development, which may include development and support for instructional coaches, to enable teachers and instructional leaders to increase student achievement in identified subjects, through—

(I) implementation of classroom assessments; and

(II) differentiation of instruction in identified subjects for all students, including for students who are children with disabilities and students who are limited English proficient;

(iii) activities to—

(I) improve the content knowledge of teachers; and
(II) facilitate professional collaboration, which may include providing time for such collaborations;

(iv) the development, adoption, and improvement of high-quality curricula and instructional supports that—

(I) are aligned with State academic standards under section 1111(b) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6311(b)); and

(II) the eligible subgrantee will use to improve student academic achievement in identified subjects;

(v) the development or improvement, and implementation, of multi-tiered systems of support to provide early intervening services and to increase student achievement in 1 or more of the identified subjects; and

(vi) integrating instruction in the identified subjects with instruction in reading, English language arts, or other core and noncore academic subjects.
(B) PERMISSIBLE USE OF FUNDS.—In addition to the required activities described in subparagraph (A), each eligible subgrantee that receives a subgrant under this subsection, may also use the subgrant funds to—

(i) support the participation of low-income students in nonprofit competitions and out-of-school activities related to science, technology, engineering, and mathematics subjects (such as robotics, science research, invention, mathematics, and technology competitions), including—

(I) the purchase of parts and supplies needed to participate in such competitions;

(II) incentives and stipends for teachers and instructional leaders who are involved in assisting students and preparing students for such competitions, if such activities fall outside the regular duties and responsibilities of such teachers and instructional leaders; and

(III) paying expenses associated with the participation of low-income
students in such local, regional, or na-
tional competitions; and

(ii) broaden secondary school stu-
dents’ access to, and interest in, careers
that require academic preparation in 1 or
more identified subjects.

(C) LIMITATION.—Each subgrantee that
receives a subgrant under this subsection shall
not expend more than 15 percent of the
subgrant funds on the activities described in
subparagraph (B).

(D) MATCHING FUNDS.—

(i) IN GENERAL.—A State or eligible
entity may require an eligible subgrantee
receiving a subgrant under this subsection
to demonstrate that such subgrantee has
obtained a commitment from 1 or more
outside partners to match, using non-Fed-
eral funds, a portion of the amount of
subgrant funds, in an amount determined
by the State or eligible entity.

(ii) REQUIRED MINIMUM.—Notwith-
standing clause (i), if an eligible sub-
grantee partners with an outside partner
that is a for-profit entity, such subgrantee


shall obtain matching funds from the outside partner in an amount equal to not less than 15 percent of the amount of the subgrant.

(d) State Activities.—

(1) In General.—Each State or eligible entity that receives a grant under this Act may use not more than 5 percent of grant funds for—

(A) administration costs;

(B) monitoring the implementation of subgrants;

(C) providing technical assistance to subgrantees; and

(D) evaluating subgrants in coordination with the evaluation described in section 9.

(2) Reservation.—Each State or eligible entity that receives a grant under this Act may submit a request to the Secretary to reserve not more than 15 percent of grant funds, inclusive of the amount described in paragraph (1), for additional State activities, consistent with subsections (a) and (b).

SEC. 7. STEM MASTER TEACHER CORPS GRANT PROGRAM.

(a) Grants Authorized.—From the funds reserved under section 4(a)(1)(A), the Secretary shall award 1 or more grants, on a competitive basis, to entities described
in subsection (b)(1) to enable such entities to establish and operate a STEM master teacher corps program.

(b) STEM MASTER TEACHER CORPS.—The term “STEM master teacher corps” (referred to in this section as the “corps”) means a program—

(1) operated by 1 or more State educational agencies, or a consortium of local educational agencies, acting in partnership with 1 or more outside partners that have a demonstrated record of success in improving the effectiveness of science, technology, engineering, and mathematics teachers or increasing the retention of such teachers;

(2) that selects a group of highly rated teachers (through a process, and for a duration, determined by the entity described in paragraph (1)), as members of the corps, that constitutes not less than 5 percent and not more than 10 percent of elementary school, middle school, and high school teachers who teach science, technology, engineering, and mathematics subjects and who—

(A) teach in a participating high-need school in the region served by the entity described in paragraph (1); or

(B) agree to teach in a participating high-need school in the region served by the entity
described in paragraph (1) if accepted as a member of the corps; and

(3) that aims to attract, improve, and retain teachers who teach science, technology, engineering, and mathematics subjects and to increase student achievement in such subjects, including by—

(A) providing instructional leadership responsibilities for corps members in their schools, local educational agencies, or States, such as mentoring beginning science, technology, engineering, and mathematics teachers and leading professional development activities for teachers not participating in the corps;

(B) providing corps members with research-based professional development on instructional leadership and effective teaching methods for science, technology, engineering, and mathematics subjects;

(C) providing each teacher who is a corps member with a salary supplement of not less than $10,000 per year, in recognition of such teacher’s teaching accomplishments, leadership, and increased responsibilities, for each year such teacher serves as a member of the corps; and
(D) building a community of practice among corps members to enable such members to network, collaborate, and to share best practices and resources with each other.

(c) DURATION.—

(1) IN GENERAL.—Grants awarded under this section shall be for a period of not more than 3 years.

(2) RENEWAL.—

(A) IN GENERAL.—If a grantee under this section demonstrates progress, as measured by the metrics described in section 8(a), the Secretary may renew a grant under this section for an additional 2-year period.

(B) REDUCED FUNDING.—Grant funds awarded under subparagraph (A) shall be awarded at a reduced amount.

(d) APPLICATION.—

(1) IN GENERAL.—Each entity described in subsection (b)(1) desiring a grant under this section shall submit an application to the Secretary at such time, in such manner, and accompanied by such information as the Secretary may require.
(2) CONTENTS.—At a minimum, an application submitted under paragraph (1) shall include the following:

(A) A plan to implement a corps program that is of sufficient size and scope to have a substantial, measurable effect on—

(i) student academic achievement in science, technology, engineering, and mathematics subjects in the schools where corps members teach; and

(ii) the effectiveness and retention of—

(I) corps members; and

(II) other teachers of science, technology, engineering, and mathematics subjects who work with, or are mentored by, corps members.

(B) A description of how the entity described in subsection (b)(1) plans to sustain the program after the expiration of the grant under this section.

(c) COMPETITIVE PRIORITY.—In awarding grants under this section, the Secretary shall give priority to applicants that will include rural schools among the schools that the applicant will serve through the program.
(f) Matching Funds.—The Secretary may require a grantee under this section to provide non-Federal matching funds in an amount equal to the amount of grant funds awarded under this section.

(g) Equitable Access.—If the entity described in subsection (b)(1) includes a State educational agency, such entity shall ensure that rural schools located in the region that will be served by the entity have equitable access to the STEM master teacher corps program.

SEC. 8. PERFORMANCE METRICS; REPORT.

(a) Establishment of Performance Metrics.—The Secretary, acting through the Director of the Institute of Education Sciences, shall establish performance metrics to evaluate the effectiveness of the activities carried out under this Act.

(b) Annual Report.—Each State or eligible entity that receives a grant under this Act shall prepare and submit an annual report to the Secretary, which shall include information relevant to the performance metrics described in subsection (a).

SEC. 9. EVALUATION.

From the amount reserved under section 4(a)(1)(B), the Secretary shall—
(1) acting through the Director of the Institute of Education Sciences, and in consultation with the Director of the National Science Foundation—

(A) evaluate the implementation and impact of the activities supported under this Act, including progress measured by the metrics established under section 8(a); and

(B) identify best practices to improve instruction in science, technology, engineering, and mathematics subjects; and

(2) disseminate, in consultation with the National Science Foundation, research on best practices to improve instruction in science, technology, engineering, and mathematics subjects.

SEC. 10. SUPPLEMENT NOT SUPPLANT.

Funds received under this Act shall be used to supplement, and not supplant, funds that would otherwise be used for activities authorized under this Act.

SEC. 11. MAINTENANCE OF EFFORT.

A State that receives funds under this Act for a fiscal year shall maintain the fiscal effort provided by the State for the subjects supported by the funds under this Act at a level equal to or greater than the level of such fiscal effort for the preceding fiscal year.