

111TH CONGRESS
2D SESSION

H. R. 6248

To stimulate collaboration with respect to, and provide for coordination and coherence of, the Nation's science, technology, engineering, and mathematics education initiatives.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 29, 2010

Mr. HONDA introduced the following bill; which was referred to the Committee on Education and Labor, and in addition to the Committee on Science and Technology, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To stimulate collaboration with respect to, and provide for coordination and coherence of, the Nation's science, technology, engineering, and mathematics education initiatives.

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 “Elevating Science,
5 Technology, Engineering, and Mathematics Education Act
6 of 2010”.

1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) The term “agencies” or “agency” means
4 the following Federal agencies: Environmental Pro-
5 tection Agency, Department of Agriculture, Depart-
6 ment of Commerce, Department of Defense, Depart-
7 ment of Education, Department of Energy, Depart-
8 ment of Health and Human Services, Department of
9 Labor, Department of the Interior, National Aero-
10 nautics and Space Administration, National Oceanic
11 and Atmospheric Administration, National Science
12 Foundation, the National Institutes of Health, and
13 the National Institute of Standards and Technology,
14 and other Federal agencies with STEM education
15 programs.

16 (2) The term “NSERR” means the National
17 STEM Education Resource Repository.

18 (3) The term “OSTP” means the Office of
19 Science and Technology Policy in the Executive Of-
20 fice of the President.

21 (4) The term “STEM” means science, tech-
22 nology, engineering, and mathematics.

1 **SEC. 3. OFFICE OF SCIENCE, TECHNOLOGY, ENGINEERING,**
2 **AND MATHEMATICS EDUCATION WITHIN THE**
3 **DEPARTMENT OF EDUCATION.**

4 (a) ASSISTANT SECRETARY.—Section 202 of the De-
5 partment of Education Organization Act (20 U.S.C. 3412)
6 is amended in subsection (b)(1)—

7 (1) in subparagraph (E) by striking “and” at
8 the end;

9 (2) by redesignating subparagraph (F) as (G);
10 and

11 (3) by inserting after subparagraph (E) the fol-
12 lowing:

13 “(F) an Assistant Secretary for Science,
14 Technology, Engineering, and Mathematics
15 Education (who may be referred to as the As-
16 sistant Secretary for STEM Education); and”.

17 (b) OFFICE.—Title II of the Department of Edu-
18 cation Organization Act is amended by adding at the end
19 the following:

20 **“SEC. 221. OFFICE OF SCIENCE, TECHNOLOGY, ENGINEER-**
21 **ING, AND MATHEMATICS EDUCATION.**

22 “(a) IN GENERAL.—There shall be in the Depart-
23 ment of Education an Office of Science, Technology, Engi-
24 neering, and Mathematics Education (which may be re-
25 ferred to as the Office of STEM Education), to be admin-

1 istered by the Assistant Secretary for STEM Education
2 appointed under section 202(b).

3 “(b) RESPONSIBILITIES.—The Assistant Secretary of
4 STEM Education, acting through the Office, shall have
5 the following responsibilities:

6 “(1) Coordinating and overseeing all STEM
7 education efforts within the Department.

8 “(2) Preparing the annual budget for all STEM
9 education programs within the Department.

10 “(3) Managing the following programs: Math
11 and Science Partnerships, Math Now, Math Skills
12 for Secondary Students, Minority Science and Engi-
13 neering Improvement, Teachers for a Competitive
14 Tomorrow, Upward Bound Math-Science, and all
15 other functions of the Department with a focus on
16 STEM education, including where appropriate the
17 National Science and Mathematics Access Retain
18 Talent (SMART grants), the Teacher Education As-
19 sistance for College and Higher Education (TEACH
20 grants), and the Academic Competitiveness grants.

21 “(4) Consulting with other offices within the
22 Department that have a STEM education focus, in-
23 cluding those managing the Carl D. Perkins Career
24 and Technical Education grant programs.

1 “(5) Representing the Department as a member
2 of the National Science and Technology Council’s
3 Committee on Science, Subcommittee on Education
4 and Workforce Development, and serving as the
5 principal interagency liaison for STEM education
6 programs at the Department unless otherwise des-
7 ignated by the Assistant Secretary.

8 “(6) Ensuring access to equal educational op-
9 portunity for every individual so as to increase, to
10 the maximum extent possible, the participation and
11 advancement of individuals identified in section 33
12 or 34 of the Science and Engineering Equal Oppor-
13 tunities Act (42 U.S.C. 1885a or 1885b) in the
14 STEM disciplines.

15 “(7) Promoting the development and implemen-
16 tation of quality, scientifically valid STEM teacher
17 preparation and to provide technical assistance to
18 support STEM learning.

19 “(8) Providing support to institutions of higher
20 education and other institutions and organizations
21 with effective informal STEM education programs to
22 improve teacher preparation and teacher professional
23 development by ensuring emphasis on promising
24 practices and exemplary programs in STEM edu-
25 cation.

1 “(9) Providing support to local education agen-
2 cies or to mathematics and science partnerships in-
3 volving local education agencies, to implement effec-
4 tive STEM education instruction and exemplary pro-
5 grams that employ promising practices.

6 “(10) Consulting regularly with the State Con-
7 sortium on STEM Education with regard to devel-
8 oping STEM education policy and providing tech-
9 nical support.

10 “(11) Conducting a biennial symposium empha-
11 sizing engaging students in STEM disciplines that
12 are identified in section 33 or 34 of the Science and
13 Engineering Equal Opportunities Act (42 U.S.C.
14 1885a or 1885b) inviting stakeholders that include,
15 but are not limited to—

16 “(A) expert STEM teachers;

17 “(B) State Consortium on STEM Edu-
18 cation and additional States;

19 “(C) business and industry partners;

20 “(D) institutions of higher education;

21 “(E) institutions and organizations with an
22 informal STEM education focus; and

23 “(F) Federal agencies with STEM edu-
24 cation programs.

1 “(12) Providing periodic public statements on
2 the status of STEM education in the Nation.

3 “(13) Informing the Secretary, policymakers,
4 the professional societies of STEM teaching profes-
5 sionals and STEM practitioners about the effective-
6 ness of STEM-related education research and pro-
7 grams operated within the Department.

8 “(14) Sharing scientifically valid education re-
9 search and promising practices and exemplary pro-
10 grams with the National STEM Education Resource
11 Repository.”.

12 (c) EVALUATION AND REPORT.—The Assistant Sec-
13 retary for STEM Education shall conduct an independent
14 evaluation, through grant or by contract, of the STEM
15 education programs administered by the Department, at
16 least every 5 years, which shall include—

17 (1) conducting an assessment of STEM edu-
18 cation activities within the Department by using the
19 evaluations and reports of these programs to deter-
20 mine these programs’ impact on—

21 (A) the quantity of students seeking
22 STEM degrees disaggregated by subject area
23 and according to section 33 or 34 of the
24 Science and Engineering Equal Opportunities
25 Act (42 U.S.C. 1885a or 1885b);

1 (B) student academic achievement with
2 consideration of problem solving, critical think-
3 ing, collaboration, and other higher order think-
4 ing skills;

5 (C) improving STEM teacher quality,
6 quantity, and retention; and

7 (D) improving promising teaching prac-
8 tices that show evidence of fostering student in-
9 novation; and

10 (2) the preparation and submission of a report
11 on the results of the evaluation described in para-
12 graph (1) to the Committee on Health, Education,
13 Labor, and Pensions and the Committee on Science
14 of the Senate, the Committee on Education and
15 Labor and the Committee on Science and Tech-
16 nology of the House of Representatives and the
17 Committees on Appropriations of the Senate and
18 House of Representatives.

19 (d) AUTHORIZATION OF APPROPRIATIONS.—There
20 are authorized to be appropriated \$1,500,000 to carry out
21 this section for fiscal year 2011 and such sums as may
22 be necessary for each fiscal year thereafter.

1 **SEC. 4. STATE CONSORTIUM ON SCIENCE, TECHNOLOGY,**
2 **ENGINEERING, AND MATHEMATICS EDU-**
3 **CATION.**

4 (a) IN GENERAL.—From amounts made available to
5 carry out this section, the Secretary of Education, acting
6 through the Office of STEM Education, shall award a
7 grant to establish one voluntary State Consortium on
8 Science, Technology, Engineering, and Mathematics Edu-
9 cation (which may be referred to as the State Consortium
10 on STEM Education).

11 (b) PEER REVIEW AND SELECTION.—The Secretary
12 shall—

13 (1) establish a peer-review process to assist in
14 the review and approval of the grant proposal under
15 this section;

16 (2) appoint individuals to participate in the
17 peer-review process who are educators and experts in
18 identifying, evaluating, and implementing effective
19 STEM education programs and practices, including
20 areas of teaching and learning, educational stand-
21 ards and assessments, professional development, cur-
22 riculum, increasing the participation of individuals
23 identified in section 33 or 34 of the Science and En-
24 gineering Equal Opportunities Act (42 U.S.C. 10
25 1885a or 1885b), English language learners, and
26 special education including recognized exemplary

1 teachers and school administrators who have been
2 recognized at the state or national level for exem-
3 plary work and/or contributions to the STEM edu-
4 cation field;

5 (3) approve one grant from those submitted
6 under this section not later than 120 days after the
7 date of the submission unless the Secretary deter-
8 mines that the grant proposals submitted do not
9 meet the requirements of this section;

10 (4) if only one grant proposal is submitted, not
11 decline to approve the grant proposal before—

12 (A) offering the Consortium an oppor-
13 tunity to revise the Consortium proposal; and

14 (B) providing the Consortium with tech-
15 nical assistance in order to submit a successful
16 application; and

17 (5) direct the Inspector General of the Depart-
18 ment to review the process used for screening the in-
19 dividuals appointed to the peer-review process so as
20 to avoid both financial conflicts of interest and non-
21 financial interests that would impair objectivity in
22 peer review, as well as the objectivity of process used
23 in reviewing and awarding the grant under this sec-
24 tion, and report the findings to Congress.

25 (c) AMOUNT OF GRANT.—

1 (1) IN GENERAL.—Except as provided under
2 paragraph (2), the grant awarded to the consortium
3 under this section shall be not more than
4 \$20,000,000.

5 (2) ADDITIONAL FUNDS.—For each fiscal year
6 of the grant period, the Secretary of Education shall
7 award to the consortium awarded a grant under this
8 section \$1,750,000 for each additional State that is
9 a member of the consortium beyond the minimum 5
10 States required under subsection (d).

11 (d) ELIGIBILITY REQUIREMENT.—To be eligible to
12 receive a grant under this section, the consortium shall
13 include at least 5 States considering the need to provide
14 an equitable geographic representation of the United
15 States, according to the regional divisions used by the Bu-
16 reau of the Census.

17 (e) USE OF GRANT FUNDS.—The consortium shall
18 use the grant funds awarded under this section for the
19 following purposes:

20 (1) To establish the State Consortium on
21 STEM Education.

22 (2) To convene an Interstate Council on
23 Science, Technology, Engineering, and Mathematics
24 Education (which may be referred to as the Inter-
25 state Council on STEM Education) that includes a

1 diverse group of individuals representing a variety of
2 perspectives on STEM education, the STEM dis-
3 ciplines, business, curriculum, assessments, English
4 language learners, and special education, includ-
5 ing—

6 (A) representatives from States that shall
7 include not less one State Governor, one Chief
8 State School Officer, and one representative of
9 a State educational agency or their designee;

10 (B) representatives from local educational
11 agencies (LEAs) that shall include not less than
12 one current school administrator, and three ex-
13 pert STEM educators that represent early
14 childhood, elementary, middle, and secondary
15 school perspectives;

16 (C) not less than 4 representatives from
17 STEM education and the STEM fields at insti-
18 tutions of higher education that include commu-
19 nity colleges, and public and private four-year
20 institutions of higher education;

21 (D) not less than one representative from
22 a STEM education professional organization,
23 such as but not limited to the National Science
24 Teachers Association, the National Council for
25 Teachers of Mathematics, those representing

1 engineering educators, career and technical edu-
2 cation, and organizations that represent under-
3 represented communities in STEM; and

4 (E) not less than one representative from
5 each of the following categories of relevant
6 STEM related organizations: informal STEM
7 education, business and industry, a STEM dis-
8 ciplinary or professional society, private or cor-
9 porate foundations, youth-serving organizations,
10 and other relevant organizations.

11 (3) To support at least one full-time staff mem-
12 ber for each State.

13 (4) To share STEM education research, prom-
14 ising practices and exemplary programs, and pro-
15 grams through the NSERR.

16 (f) FUNCTIONS.—The State Consortium on STEM
17 Education—

18 (1) shall establish small working groups com-
19 prised of members of the State Council on STEM
20 Education and outside experts in appropriate fields
21 consulting widely to address the functions outlined
22 in this subsection;

23 (2) shall identify points of weakness and
24 strength among State STEM education efforts,
25 prioritize strategies for addressing problem areas,

1 and communicate State needs to the STEM Edu-
2 cation Committee within the OSTP and the Assist-
3 ant Secretary for STEM Education;

4 (3) if the Secretary determines that significant
5 work in the areas described in subparagraphs (A)
6 and (B) is not already underway—

7 (A) shall develop rigorous common content
8 standards in STEM education for grades pre-
9 kindergarten through grade 12 reflecting com-
10 mon elements between disciplines with consider-
11 ation of—

12 (i) established international standards
13 and 21st Century Skills; and

14 (ii) the needs of English language
15 learners and special education students;

16 (B) shall develop innovative STEM assess-
17 ment practices that include a substantial pro-
18 portion of extended constructed response items,
19 such as performance-based measures, that
20 measure higher order thinking skills and under-
21 standing, application and transferability knowl-
22 edge, problem solving, analysis, and synthesis,
23 and include administration through a variety of
24 modalities, such as audio-visual and interactive
25 technology;

1 (C) may establish and strengthen partner-
2 ships between two-year colleges and minority
3 serving institutions and research institutions to
4 provide STEM students at two-year colleges
5 and minority serving institutions (MSIs) ex-
6 panded degree possibilities and opportunities to
7 access research facilities and mentors including
8 but not limited to—

9 (i) conducting a needs assessment of
10 how to enhance the flow of STEM students
11 from two-year colleges and MSIs to re-
12 search institutions; and

13 (ii) establishing articulation agree-
14 ments that shall address pathways and
15 credit transfers between the institutions;
16 and

17 (D) may improve and align STEM
18 preservice teacher training among the member
19 States, including but not limited to developing
20 common—

21 (i) STEM preservice teacher training
22 degree programs;

23 (ii) STEM teacher credentials; and

24 (iii) alternative pathways to STEM
25 teacher certification;

1 (4) if the Secretary determines that significant
2 work in the areas described in subparagraphs (A)
3 and (B) of paragraph (3) is already underway, shall
4 carry out the activities described in subparagraphs
5 (D) and (E) of such paragraph;

6 (5) shall develop and implement strategies to
7 integrate STEM education into other subject areas,
8 such as language arts, social studies, physical and
9 health education, music and other performing arts,
10 and environmental education;

11 (6) shall identify and utilize, to the maximum
12 extent possible, the expertise and resources of edu-
13 cators, institutions of higher education, business and
14 industry, and Federal agencies in the development
15 and implementation of functions outlined in this
16 subsection;

17 (7) shall develop strategies to increase the par-
18 ticipation and success of individuals identified in sec-
19 tion 33 or 34 of the Science and Engineering Equal
20 Opportunities Act (42 U.S.C. 1885a or 1885b) in
21 STEM fields with consideration of first generation
22 students;

23 (8) shall issue periodic reports on the status of
24 STEM education in the States;

1 (9) shall make STEM education research,
2 promising practices and exemplary programs, and
3 effective STEM programs widely available through
4 the NSERR;

5 (10) may promote and develop curriculum tools
6 and professional development for in-service teachers
7 that foster innovation and inventiveness;

8 (11) may evaluate the impact that STEM edu-
9 cation professional development organizations have
10 on classroom instruction and student learning in
11 member States;

12 (12) may provide technical support to States
13 who are members of the Consortium to establish or
14 strengthen existing P–16 and/or P–20 Councils and
15 to align secondary school graduation requirements
16 with the demands of 21st century postsecondary
17 education endeavors and support P–16 education
18 data systems established by States and in section
19 6401 of the America COMPETES Act (Public Law
20 110–69; 121 Stat. 668; 20 U.S.C. 9871), and serve
21 as a resource center for the STEM Education ef-
22 forts of P–16 and/or P–20 Councils;

23 (13) may develop STEM Career Awareness
24 Programs in collaboration with school guidance
25 counselors that reflect the projected STEM work-

1 force needs of the 21st century that may include
2 mentoring programs and STEM professional out-
3 reach; and

4 (14) may develop STEM-related workforce edu-
5 cation and training programs to enhance the skills
6 of workers to meet the needs of business and indus-
7 try.

8 (g) OUTSIDE FUNDS.—The State Consortium on
9 STEM Education shall be permitted to accept and solicit
10 outside funds.

11 (h) EVALUATION AND REPORT.—The State Consor-
12 tium on STEM Education shall conduct periodic inde-
13 pendent evaluations, by grant or by contract, of the State
14 Consortium on STEM Education’s effectiveness at accom-
15 plishing the functions outlined in subsection (f), which
16 shall include—

17 (1) an assessment of the impact of such activi-
18 ties on STEM teaching and learning; and

19 (2) the preparation and submission of a report
20 on the results of the evaluation described in para-
21 graph (1) to the Assistant Secretary of STEM Edu-
22 cation.

23 (i) PROHIBITIONS.—

24 (1) IN GENERAL.—In implementing this sec-
25 tion, the Secretary may not—

1 (A) endorse, approve, or sanction any
2 STEM curriculum designed for use in any
3 school; or

4 (B) engage in oversight, technical assist-
5 ance, or activities that will require the adoption
6 of a specific STEM program or instructional
7 materials by a State, local educational agency,
8 or school.

9 **SEC. 5. STEM EDUCATION RESOURCE ALLIANCE.**

10 (a) IN GENERAL.—From amounts made available to
11 carry out this section, the Secretary of Education, acting
12 through the Office of STEM Education, shall make a
13 grant to the National Science Digital Library to establish
14 the STEM Education Resource Alliance. The STEM Edu-
15 cation Resource Alliance shall be composed of representa-
16 tives from each agency and industry stakeholders. The
17 STEM Education Resource Alliance shall have 2 co-chairs
18 selected by the members of the Alliance. The co-chairs
19 shall serve for a 3-year term. No individual may serve as
20 a co-chair for more than 1 consecutive term.

21 (b) USE OF GRANT AMOUNTS.—The National
22 Science Digital Library shall use the grant funds to pro-
23 vide basic operational support to the STEM Education
24 Resource Alliance, including maintenance, office space,
25 equipment, personnel, and other operational costs.

1 (c) RESPONSIBILITIES.—The STEM Education Re-
2 source Alliance shall have the following responsibilities:

3 (1) Coordinating and organizing—

4 (A) scientifically valid STEM education re-
5 search;

6 (B) STEM education programs—

7 (i) that demonstrate promising prac-
8 tices; or

9 (ii) are exemplary, in terms of content
10 or resources; and

11 (C) STEM education resources.

12 (2) Integrating existing STEM education collec-
13 tions, teacher professional development opportuni-
14 ties, and student programs available through the
15 Federal Government, State initiatives, or national
16 experts, including the Science Education Resource
17 Center, Research from Institutions of Higher Edu-
18 cation, Regional Education Centers (labs, com-
19 prehensive centers, and technical assistance centers),
20 Applied Math and Science Repository, and Edu-
21 cation Resources Information Center (ERIC).

22 (3) Working with industry to develop a uniform
23 format for submissions to the NSERR, such as sum-
24 maries, metadata, contact information for questions,
25 examples of successful implementation, and other in-

1 formation necessary to develop applications that en-
2 hance learning and teaching.

3 (4) In collaboration with relevant STEM edu-
4 cation experts, developing criteria for inclusion in
5 the NSERR of resources, research, promising prac-
6 tices, and exemplary programs, including require-
7 ments relating to evaluation by experts at the prin-
8 cipal originating agency.

9 (5) Publishing, not later than 180 days after
10 the date of the enactment of this Act, the criteria
11 developed under paragraph (4).

12 (6) Ensuring that STEM education resources,
13 research, promising practices, and exemplary pro-
14 grams meeting the criteria developed under para-
15 graph (4) are included in the NSERR (to be
16 digitally housed at a location determined by the
17 Chief Information Officer of the United States) and
18 made widely available at no cost in a useful format.

19 (7) Working with the Office of Science and
20 Technology Information at the Department of En-
21 ergy to ensure “www.scienceeducation.gov” serves as
22 the central portal to STEM education resources and
23 promising practices across the Federal Government.

24 (8) Providing to the National Science Digital
25 Library, not less than annually, updates of policies

1 and procedures to accommodate the requirements of
2 new and emerging technologies.

3 (d) OUTSIDE FUNDS.—The STEM Education Re-
4 source Alliance shall be permitted to accept and solicit out-
5 side funds.

6 (e) FEDERAL ADVISORY COMMITTEE ACT NOT TO
7 APPLY.—The Federal Advisory Committee Act (5 U.S.C.
8 App.) shall not apply to the STEM Education Resource
9 Alliance.

10 (f) AUTHORIZATION OF APPROPRIATIONS.—There
11 are authorized to be appropriated \$1,500,000 to carry out
12 this section for fiscal year 2011 and such sums as may
13 be necessary for each fiscal year thereafter.

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