

110TH CONGRESS  
2D SESSION

# H. R. 6104

To provide for the coordination of the Nation's science, technology,  
engineering, and mathematics education initiatives.

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## IN THE HOUSE OF REPRESENTATIVES

MAY 21, 2008

Mr. HONDA (for himself, Mr. BOSWELL, Mr. COHEN, Mr. CLEAVER, Mr. DAVIS of Illinois, Mr. EHLERS, Mr. GALLEGLY, Mr. GRIJALVA, Mr. HINOJOSA, Mr. HOLT, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. LANGEVIN, Ms. LEE, Mr. LIPINSKI, Mr. LOEBSACK, Ms. ZOE LOFGREN of California, Mr. MARKEY, Mrs. MCCARTHY of New York, Ms. MCCOLLUM of Minnesota, Mr. MCDERMOTT, Mr. MCGOVERN, Mr. MCNERNEY, Mr. MEEKS of New York, Mr. GEORGE MILLER of California, Mr. PAYNE, Mr. ROTHMAN, Ms. SUTTON, Mr. TOWNS, Mr. UDALL of Colorado, Mr. VAN HOLLEN, Ms. WATSON, Mr. WEXLER, Mrs. DAVIS of California, Mrs. CAPPES, Mrs. NAPOLITANO, Mr. HARE, Mr. COURTNEY, Mr. SARBANES, Ms. CLARKE, and Ms. LINDA T. SÁNCHEZ of California) 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

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## A BILL

To provide for the coordination 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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Enhancing Science,  
3 Technology, Engineering, and Mathematics Education Act  
4 of 2008”.

5 **SEC. 2. PURPOSE.**

6 To coordinate Federal Science, Technology, Engi-  
7 neering, and Mathematics (STEM) education efforts and  
8 foster cooperation between the States and Federal Govern-  
9 ment by—

10 (1) improving coherence of Federal STEM edu-  
11 cation programs through the President’s Office of  
12 Science and Technology Policy;

13 (2) coordinating STEM education initiatives at  
14 the Department of Education;

15 (3) providing an incentive to States to align  
16 STEM education; and

17 (4) improving the dissemination of STEM edu-  
18 cation research, promising practices, and exemplary  
19 programs through the National STEM Education  
20 Research Repository.

21 **SEC. 3. FINDINGS.**

22 Congress finds the following:

23 (1) To preserve the competitiveness of the  
24 United States in the global economy our Nation  
25 must continue to combine innovation with techno-  
26 logical advances and scientific discovery.

1           (2) In 2006, the Committee on Science, Engi-  
2           neering, and Public Policy of the National Acad-  
3           emies published “Rising Above the Gathering  
4           Storm” estimating that in the United States innova-  
5           tions generated by the Science, Technology, Engi-  
6           neering, and Math (STEM) fields account for more  
7           than half of the growth in gross domestic product  
8           (GDP).

9           (3) According to the analysis conducted by the  
10          Association of American Universities in 2006, only  
11          15 percent of college graduates receive a diploma in  
12          engineering or the natural sciences in the United  
13          States as compared with 38 percent in South Korea,  
14          47 percent in France, and 67 percent in Singapore.

15          (4) Every student deserves the opportunity to  
16          contribute to the long-term prosperity of the United  
17          States by acquiring skills that foster critical think-  
18          ing, inventiveness, and innovation.

19          (5) Highly qualified teachers are crucial to in-  
20          stilling students with the values and skills necessary  
21          to preserve and improve innovation in the United  
22          States and maintain our Nation’s leadership in the  
23          global knowledge economy.

24          (6) Teacher preparation programs at institu-  
25          tions of higher education will enhance the prepara-

1       tion they provide by incorporating promising prac-  
2       tices and exemplary programs that foster student  
3       learning, problem solving skills, and inventiveness  
4       and by aligning STEM education preservice and in-  
5       service training among States.

6               (7) Women and minorities in the United States  
7       employed in STEM fields occupations in proportion  
8       to their numbers in population or their enrollment in  
9       higher education; efforts must be made to increase  
10       diversity in the STEM workforce to improve the  
11       range of viewpoints and solutions available to ad-  
12       dress today's challenges presented by a diverse and  
13       global marketplace.

14              (8) Many of the Federal Agencies have well-es-  
15       tablished programs designed to support and improve  
16       STEM education including the Environmental Pro-  
17       tection Agency, Department of Agriculture, Depart-  
18       ment of Commerce, Department of Defense, Depart-  
19       ment of Education, Department of Energy, Depart-  
20       ment of Health and Human Services, Department of  
21       the Interior, National Aeronautics and Space Ad-  
22       ministration, National Oceanic and Atmospheric Ad-  
23       ministration, National Science Foundation, the Na-  
24       tional Institutes of Health, and the National Insti-  
25       tute of Standards and Technology.

1           (9) According to the Academic Competitiveness  
2           Council’s (ACC) recent report, in 2006 the United  
3           States sponsored 105 STEM education programs at  
4           a dozen different Federal Agencies. These programs  
5           devoted approximately \$3,120,000,000 to STEM  
6           education activities spanning kindergarten through  
7           postgraduate education and outreach. It was shown  
8           that many of these Agencies do not share informa-  
9           tion or work collaboratively on similar programs.  
10          The ACC found that “coordination among agencies  
11          could be improved to avoid, for example, grants to  
12          numerous projects that support the same sorts of  
13          interventions . . . there appears to be a lack of com-  
14          munication among the agencies about the work they  
15          are funding and the results that are being generated  
16          . . . agencies are often uninformed by the results of  
17          earlier projects.”.

18          (10) Strengthening partnerships between the  
19          Federal and State governments, the private sector,  
20          nonprofit organizations, and the education commu-  
21          nity will improve STEM education in our Nation’s  
22          schools.

23 **SEC. 4. DEFINITIONS.**

24          In this Act:

1           (1) The term “STEM” means science, tech-  
2 nology, engineering, and mathematics.

3           (2) The term “OSTP” means the Office of  
4 Science and Technology Policy in the Executive Of-  
5 fice of the President.

6           (3) The term “NSERR” means the National  
7 STEM Education Research Repository.

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

1 **SEC. 5. ESTABLISHMENT WITHIN THE PRESIDENT'S OFFICE**  
2 **OF SCIENCE AND TECHNOLOGY POLICY A**  
3 **COMMITTEE ON SCIENCE, TECHNOLOGY, EN-**  
4 **GINEERING, AND MATHEMATICS EDUCATION.**

5 (a) **ESTABLISHMENT OF COMMITTEE.**—The Presi-  
6 dent shall establish, at the OSTP, a Committee on  
7 Science, Technology, Engineering, and Mathematics Edu-  
8 cation within the National Science and Technology Coun-  
9 cil, which may be referred to as the Committee on STEM  
10 Education.

11 (b) **FUNCTION.**—The function of the Committee es-  
12 tablished under subsection (a) shall be—

13 (1) to coordinate the efforts of all Federal  
14 Agencies that relate to STEM education from the  
15 prekindergarten level through the graduate level to  
16 avoid unnecessary duplication and ensure coherence  
17 among Federal STEM education programs;

18 (2) to seek to improve the quality and quantity  
19 of the STEM workforce with consideration of in-  
20 creasing participation of individuals identified in sec-  
21 tion 33 or 34 of the Science and Engineering Equal  
22 Opportunities Act (42 U.S.C. 1885a or 1885b); and

23 (3) to ensure that all efforts that relate to  
24 STEM education are coordinated through the Com-  
25 mittee.

26 (c) **STRUCTURE AND OPERATION.**—

1           (1) MEMBERSHIP.—The membership of the  
2           Committee shall include not less than 1 representa-  
3           tive from each of the Federal Agencies and may in-  
4           clude outside experts.

5           (2) MEETINGS.—The Committee shall convene  
6           at least once quarterly.

7           (3) STAFF.—The Committee shall be served  
8           by—

9                   (A) an Assistant Director selected by the  
10                  members of the Committee with the approval of  
11                  the Director of the OSTP; and

12                  (B) a professional staff of at least two.

13          (d) RESPONSIBILITIES.—The Committee shall have  
14          the following responsibilities:

15                  (1) Conducting an ongoing inventory and as-  
16                  sessment of the effectiveness and coherence of ef-  
17                  forts within Federal agencies that relate to STEM  
18                  education.

19                  (2) Coordinating and facilitating the commu-  
20                  nication and cooperation among all Federal Agencies  
21                  engaged in efforts that relate to STEM education.

22                  (3) Developing annual goals and objectives for  
23                  improving STEM education throughout the Nation  
24                  in collaboration with relevant Federal Agencies and  
25                  organizations.

1           (4) Not later than 30 days after developing the  
2 goals and objectives under paragraph (3)—

3           (A) disseminating the goals and objectives  
4 to each Federal Agency engaged in efforts that  
5 relate to STEM education;

6           (B) communicating the goals and objec-  
7 tives to the Committee on Health, Education,  
8 Labor, and Pensions and the Committee on  
9 Commerce, Justice, and Transportation of the  
10 Senate and the Committee on Education and  
11 Labor and the Committee on Science and Tech-  
12 nology of the House of Representatives, and rel-  
13 evant STEM education organizations; and

14           (C) making the goals and objectives widely  
15 available to the public, particularly to stake-  
16 holders that represent individuals identified in  
17 section 33 or 34 of the Science and Engineering  
18 Equal Opportunities Act (42 U.S.C. 1885a or  
19 1885b).

20           (5) Annually evaluating the progress and suc-  
21 cess of each Federal Agency at achieving the goals  
22 and objectives under paragraph (3).

23           (6) Consulting with the State Consortium on  
24 STEM Education when developing Federal STEM  
25 education policy and budgets.

1           (7) Proposing a coordinated interagency budget  
2 for STEM Education to the Office of Management  
3 and Budget aligned with the goals established in  
4 paragraph (3).

5           (8) Strengthening partnerships between the  
6 STEM education community, Federal, State, and  
7 local governments, and other countries.

8           (9) Implementing the program for Semiannual  
9 Science, Technology, Engineering, and Mathematics  
10 Days as set forth in section 1004 of the America  
11 COMPETES Act (Public Law 110–69).

12           (10) Hosting an annual meeting on the status  
13 of STEM education, including the role of education  
14 in meeting the recommendations of the report sub-  
15 mitted by and as part of the National Science and  
16 Technology Summit required by section 1101 of the  
17 America COMPETES Act (Public Law 110–69; 121  
18 Stat. 574), in conjunction with—

19                   (A) the State Consortium on STEM Edu-  
20 cation;

21                   (B) the Federal Agencies;

22                   (C) States, including the District of Co-  
23 lumbia, the Commonwealth of Puerto Rico, the  
24 Commonwealth of the Northern Mariana Is-  
25 lands, American Samoa, Guam, the Virgin Is-

1 lands, and any other territory or possession of  
2 the United States;

3 (D) businesses and industries;

4 (E) institutions of higher education;

5 (F) STEM education professions and  
6 teachers from prekindergarten through  
7 postbaccalaureate study; and

8 (G) other relevant stakeholders in STEM  
9 education including stakeholders that represent  
10 individuals identified in section 33 or 34 of the  
11 Science and Engineering Equal Opportunities  
12 Act (42 U.S.C. 1885a or 1885b).

13 (11) Issuing a biennial report to the Nation on  
14 the status of STEM education that—

15 (A) specifies the efforts and outcomes of  
16 each Federal Agency in improving STEM edu-  
17 cation; and

18 (B) contains an analysis of the quality,  
19 scale, and effectiveness of the efforts of the  
20 Federal Government relating to improving  
21 STEM education and increasing participation  
22 of individuals identified in section 33 or 34 of  
23 the Science and Engineering Equal Opportuni-  
24 ties Act (42 U.S.C. 1885a or 1885b).

1           (12) Developing, in consultation with the Sec-  
2           retary of Labor, business and industry partners and  
3           other appropriate entities, a 5-year projection of the  
4           STEM workforce including a demographic break-  
5           down of individuals identified in section 33 or 34 of  
6           the Science and Engineering Equal Opportunities  
7           Act (42 U.S.C. 1885a or 1885b).

8           (e) REQUIREMENTS.—

9           (1) IN GENERAL.—Subject to paragraph (2),  
10          but notwithstanding any other provision of law, a  
11          person shall be not eligible to receive a grant from  
12          any Federal Agency for a project that relates to  
13          STEM education research unless the person dem-  
14          onstrates that all reports, proceedings, data sets, on-  
15          line modules, and other products of the project will  
16          be submitted by their authors for consideration to be  
17          included in the NSERR.

18          (2) COPYRIGHT.—The Committee and the  
19          NSERR shall implement the public access policy  
20          under paragraph (1) in a manner consistent with  
21          copyright law.

22          (f) AUTHORIZATION OF APPROPRIATIONS.—There is  
23          authorized to be appropriated \$650,000 to carry out this  
24          section for fiscal year 2009 and each fiscal year thereafter.

1 **SEC. 6. 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, and all other functions of the Depart-  
15 ment with a focus on STEM education, including  
16 where appropriate the National Science and Mathe-  
17 matics Access Retain Talent (SMART grants), the  
18 Teacher Education Assistance for College and High-  
19 er Education (TEACH grants), and the Academic  
20 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 STEM Education Committee, established  
3 under section 5 of the Enhancing Science, Tech-  
4 nology, Engineering, and Mathematics Education  
5 Act of 2008, and serving as the principal inter-  
6 agency liaison for STEM education programs at the  
7 Department unless otherwise designated by the As-  
8 sistant Secretary.

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

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

20           “(8) Providing support to institutions of higher  
21 education and other institutions and organizations  
22 with effective informal STEM education programs to  
23 improve teacher preparation and teacher professional  
24 development by ensuring emphasis on promising

1 practices and exemplary programs in STEM edu-  
2 cation.

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

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

12 “(11) Conducting a biennial symposium empha-  
13 sizing engaging students in STEM disciplines that  
14 are identified in section 33 or 34 of the Science and  
15 Engineering Equal Opportunities Act (42 U.S.C.  
16 1885a or 1885b) inviting stakeholders that include,  
17 but are not limited to—

18 “(A) expert STEM teachers;

19 “(B) State Consortium on STEM Edu-  
20 cation and additional States;

21 “(C) business and industry partners;

22 “(D) institutions of higher education;

23 “(E) institutions and organizations with an  
24 informal STEM education focus; and

1           “(F) Federal Agencies with STEM edu-  
2           cation programs.

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

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

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

14          (c) EVALUATION AND REPORT.—The Assistant Sec-  
15          retary for STEM Education shall conduct an annual inde-  
16          pendent evaluation, through grant or by contract, of the  
17          STEM education programs administered by the Depart-  
18          ment, which shall include—

19                 (1) conducting an assessment of STEM edu-  
20                 cation activities within the Department by using the  
21                 annual evaluations and reports of these programs to  
22                 determine these programs’ impact on—

23                         (A) the quantity of students seeking  
24                         STEM degrees disaggregated by subject area  
25                         and according to section 33 or 34 of the

1 Science and Engineering Equal Opportunities  
2 Act (42 U.S.C. 1885a or 1885b);

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

7 (C) improving STEM teacher quality,  
8 quantity, and retention; and

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

12 (2) the preparation and submission of an an-  
13 nual report on the results of the evaluation described  
14 in paragraph (1) to the Committee on Health, Edu-  
15 cation, Labor, and Pensions and the Committee on  
16 Science of the Senate, the Committee on Education  
17 and Labor and the Committee on Science and Tech-  
18 nology of the House of Representatives and the  
19 Committees on Appropriations of the Senate and  
20 House of Representatives.

21 (d) AUTHORIZATION OF APPROPRIATIONS.—There  
22 are authorized to be appropriated \$1,500,000 to carry out  
23 this section for fiscal year 2009 and such sums as may  
24 be necessary for each fiscal year thereafter.

1 **SEC. 7. 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 \$2,000,000 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, and other relevant organi-  
10 zations.

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) shall develop rigorous common content  
5 standards in STEM education for grades prekind-  
6 garten through grade 12 reflecting common elements  
7 between disciplines with consideration of—

8 (A) established international standards and  
9 21st Century Skills; and

10 (B) the needs of English language learners  
11 and special education students;

12 (4) shall develop and implement strategies to  
13 integrate STEM education into other subject areas,  
14 such as language arts, social studies, physical and  
15 health education, music and other performing arts,  
16 and environmental education;

17 (5) shall develop innovative STEM assessment  
18 practices that include a substantial proportion of ex-  
19 tended constructed response items, such as perform-  
20 ance-based measures, that measure higher order  
21 thinking skills and understanding, application and  
22 transferability knowledge, problem solving, analysis,  
23 and synthesis, and include administration through a  
24 variety of modalities, such as audio-visual and inter-  
25 active technology;

1           (6) shall identify and utilize, to the maximum  
2           extent possible, the expertise and resources of edu-  
3           cators, institutions of higher education, business and  
4           industry, and Federal agencies in the development  
5           and implementation of functions outlined in this  
6           subsection;

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

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

15          (9) shall make STEM education research,  
16          promising practices and exemplary programs, and  
17          effective STEM programs widely available through  
18          the NSERR;

19          (10) may establish and strengthen partnerships  
20          between two-year colleges and minority serving insti-  
21          tutions and research institutions to provide STEM  
22          students at two-year colleges and minority serving  
23          institutions (MSIs) expanded degree possibilities and  
24          opportunities to access research facilities and men-  
25          tors including but not limited to—

1 (A) conducting a needs assessment of how  
2 to enhance the flow of STEM students from  
3 two-year colleges and MSIs to research institu-  
4 tions; and

5 (B) establishing articulation agreements  
6 that shall address pathways and credit transfers  
7 between the institutions;

8 (11) may improve and align STEM preservice  
9 teacher training among the member States, includ-  
10 ing but not limited to developing common—

11 (A) STEM preservice teacher training de-  
12 gree programs;

13 (B) STEM teacher credentials; and

14 (C) alternative pathways to STEM teacher  
15 certification;

16 (12) may promote and develop curriculum tools  
17 and professional development for inservice teachers  
18 that foster innovation and inventiveness;

19 (13) may evaluate the impact that STEM edu-  
20 cation professional development organizations have  
21 on classroom instruction and student learning in  
22 member States;

23 (14) may provide technical support to States  
24 who are members of the Consortium to establish or  
25 strengthen existing P–16 and/or P–20 Councils and

1 to align secondary school graduation requirements  
2 with the demands of 21st century postsecondary  
3 education endeavors and support P–16 education  
4 data systems established by States and in section  
5 6401 of the America COMPETES Act (Public Law  
6 110–69; 121 Stat. 668; 20 U.S.C. 9871), and serve  
7 as a resource center for the STEM Education ef-  
8 forts of P–16 and/or P–20 Councils;

9 (15) may develop STEM Career Awareness  
10 Programs in collaboration with school guidance  
11 counselors that reflect the projected STEM work-  
12 force needs of the 21st century that may include  
13 mentoring programs and STEM professional out-  
14 reach; and

15 (16) may develop STEM-related workforce edu-  
16 cation and training programs to enhance the skills  
17 of workers to meet the needs of business and indus-  
18 try.

19 (g) OUTSIDE FUNDS.—The State Consortium on  
20 STEM Education shall be permitted to accept and solicit  
21 outside funds.

22 (h) EVALUATION AND REPORT.—The State Consor-  
23 tium on STEM Education shall conduct an annual inde-  
24 pendent evaluation, by grant or by contract, of the State  
25 Consortium on STEM Education’s effectiveness at accom-

1 plishing the functions outlined in subsection (e), which  
2 shall include—

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

5 (2) the preparation and submission of an an-  
6 nual report on the results of the evaluation described  
7 in paragraph (1) to the Assistant Secretary of  
8 STEM Education.

9 (i) PROHIBITIONS.—

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

12 (A) endorse, approve, or sanction any  
13 STEM curriculum designed for use in any  
14 school; or

15 (B) engage in oversight, technical assist-  
16 ance, or activities that will require the adoption  
17 of a specific STEM program or instructional  
18 materials by a State, local educational agency,  
19 or school.

20 **SEC. 8. NATIONAL STEM EDUCATION RESEARCH REPOSI-**  
21 **TORY.**

22 (a) IN GENERAL.—From amounts made available to  
23 carry out this section, the Secretary of Education, acting  
24 through the Office of STEM Education, shall make a  
25 grant to the National Science Digital Library for use by

1 the Library to establish a National STEM Education Re-  
2 search Repository to coordinate and organize scientifically  
3 valid STEM education research, and STEM education  
4 programs that demonstrate promising practices and exem-  
5 plary programs, among governmental and nongovern-  
6 mental agencies.

7 (b) USE OF GRANT AMOUNTS.—The recipient of the  
8 grant under subsection (a) shall use the grant to provide  
9 basic operational support to the NSERR, including con-  
10 tent development and maintenance, office space, equip-  
11 ment, personnel, and other operational costs.

12 (c) RESPONSIBILITIES.—The NSERR shall have the  
13 following responsibilities:

14 (1) Integrating existing STEM education collec-  
15 tions, teacher professional development opportunities  
16 and student programs available through the Federal  
17 Agencies and including, but not limited to, Science  
18 Education Resource Center, Research from Institu-  
19 tions of Higher Education, Regional Education Cen-  
20 ters (labs, comprehensive centers, and technical as-  
21 sistance centers), Applied Math and Science Reposi-  
22 tory, Education Resources Information Center  
23 (ERIC), State initiatives, national experts, and oth-  
24 ers.

1           (2) Developing criteria for STEM education re-  
2           search and promising practices and exemplary pro-  
3           grams, in collaboration with relevant STEM edu-  
4           cation experts, for inclusion in the NSERR.

5           (3) Publishing, not later than 180 days after  
6           the date of enactment of this Act, the criteria devel-  
7           oped under paragraph (2).

8           (4) Ensuring that STEM education research,  
9           promising practices, have been evaluated by experts,  
10          and those and exemplary programs meeting the es-  
11          tablished minimum criteria in paragraph (2) are  
12          made widely available.

13          (5) Providing summaries of STEM education  
14          research and promising practices and exemplary pro-  
15          grams that were submitted and evaluated under  
16          paragraph (4), including contact information for  
17          questions, an example of successful implementation,  
18          and other information that may be beneficial to edu-  
19          cators.

20          (d) OUTSIDE FUNDS.—The NSERR shall be per-  
21          mitted to accept and solicit outside funds.

22          (e) AUTHORIZATION OF APPROPRIATIONS.—There  
23          are authorized to be appropriated \$1,500,000 to carry out

- 1 this section for fiscal year 2009 and such sums as may
- 2 be necessary for each fiscal year thereafter.

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