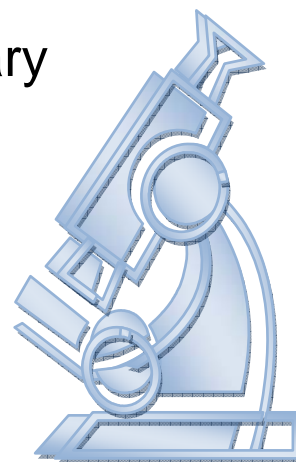
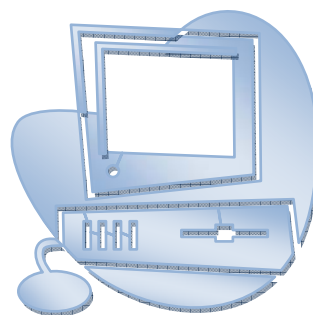
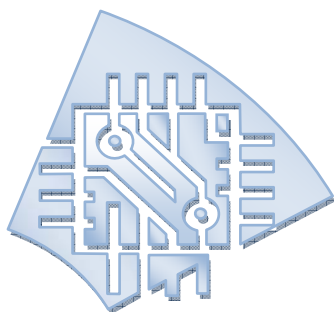


# Science, Technology, Engineering, and Mathematics Education for the 21<sup>st</sup> Century Act of 2008



## Section by Section Summary



The United States has been the most innovative, technologically capable economy in the world. Yet our science, technology, engineering, and mathematics (STEM) education system is failing to ensure that our students are entering the workforce with the skills and knowledge required for success in the global economy of the 21<sup>st</sup> Century. Meanwhile, the rest of the world is catching up. This legislation seeks to promote and coordinate existing efforts to improve STEM education and to improve the communication between various stakeholders so that tomorrow's workforce will be prepared to continue the American tradition of innovation and enterprise.

## **Section 1. Short Title**

This section specifies that the Act may be cited as the “Science, Technology, Engineering, and Mathematics Education for the 21<sup>st</sup> Century Act of 2008.”

## **Section 2. National Council for Science, Technology, Engineering, and Mathematics Education.**

This section charters a new, independent, and non-federal **National Council for STEM Education**, housed in the National Academies, with the goals of

- facilitating the flow of information about science, technology, engineering, and mathematics (STEM) education to various stakeholders;
- evaluating areas for improvement in the nation’s STEM education system, and proposing strategies to address them;
- improving federal coordination with, and service to, State and local school systems; and
- promoting STEM fields and educating the general public about the importance of STEM education in the global economy.

The Council will be managed by a Board of Directors appointed by the director of the National Science Foundation (NSF) in consultation with Congress. Voting membership of the board will include:

- two state governors or former governors;
- two chief state school officers;
- a local school board representative;
- a representative from the National Science Board;
- an active classroom teacher in science or mathematics;
- an active classroom teacher in engineering;
- a school administrator;
- a representative from organizations representing community colleges;

- a representative from organizations representing research universities;
- a representative from technological institutes;
- a representative from an informal STEM education organization;
- two representatives from various teacher, parent-teacher, and STEM education organizations;
- three representatives from various organizations representing industry and business associations interested in a STEM-educated workforce; and
- two representatives from organizations that support educational initiatives, the nation's global competitiveness, or STEM education.

The Board will have two co-chairs, appointed by the Director of the NSF in consultation with Congress, who will be a Governor or former Governor and a chief state school officer.

In addition, the Board will include the following non-voting members:

- a representative from the Department of Education;
- a representative from the National Science Foundation;
- eight representatives from Congress
  - majority and minority of the Committee on Health, Education, Labor, and Pensions of the Senate;
  - majority and minority of the Committee on Commerce, Science, and Transportation of the Senate;
  - majority and minority of the Committee on Education and Labor of the House of Representatives; and
  - majority and minority of the Committee on Science and Technology of the House of Representatives.

The Council will be housed at and staffed by the National Academy of Sciences and will have the following duties:

- identifying deficiencies in the nation's STEM education systems and proposing strategies for members of the STEM Council to collaborate to address such deficiencies;

- submitting an annual report on the state of STEM education to Congress;
- disseminating information on teaching and learning in STEM fields through the Department of Education;
- helping states establish or develop existing P-16 or P-20 STEM councils
- utilizing scientifically valid studies to determine programs that increase student achievement or interest in STEM fields, and promote them via the Department of Education;
- working with stakeholders to improve efforts to recruit and retain effective STEM educators and to encourage their placement in schools and districts most in need;
- promoting STEM fields as areas of study, especially to women and minorities and raise awareness of the importance of STEM education for the nation's success; and
- establishing and updating a public database that will contain information on financial aid and education programs, both federal and non-federal, available to students in STEM fields. This database includes:
  - information on grants, fellowships, internships, and summer programs; and
  - programs that target particular demographic groups, especially women and minorities.

The Council may also engage in the following activities:

- coordinating the development and maintenance of integrated data management systems to consolidate and share information among the States on STEM educational practices, research, and outcomes, including,
  - student assessment results
  - teacher quality measures
  - and high school graduation requirements;

- assembling a database of opportunities for teachers interested in summer research in a STEM field in a government research laboratory, institution of higher education, or STEM related business or industry
- launching a database of grants and other funding opportunities for STEM classroom resources to be used by teachers and local educational agencies.

The Council will be able to develop its own revenue stream and become self-funding after five years of \$2 million in authorized annual appropriations (a total of \$10 million).

### **Section 3. Committee on Science Technology, Engineering, and Mathematics Education**

This section establishes, within the National Science and Technology Council a standing committee on STEM education, which shall be composed of representatives from all Federal departments and agencies involved in STEM education, including the National Laboratories.

This STEM Committee shall have two co-chairs—a representative from the National Science Foundation; and a representative from the Department of Education

The STEM Committee is charged with the following responsibilities:

1. coordinating all programs related to education in STEM fields funded or administered by the Federal Government;
2. conducting an ongoing inventory and assessment of the effectiveness of federal education initiatives related to STEM fields, especially with regard to how the initiatives are serving targeted individuals, including women and minorities;
3. disseminating the annual report received from the STEM Council under section to each federal agency engaged in STEM education efforts;

4. coordinating among all federal departments and agencies involved in STEM education research and programs to inventory and assess the effectiveness and coherence of federally funded STEM education programs; and
5. representing all federal agencies on the National Council for STEM Education and coordinate the STEM education efforts of the Federal Government with state and local governments.

The STEM Committee shall meet on at least a quarterly basis.

### **Section 3. Evaluation of Science Technology, Engineering, and Mathematics Programs at the Department of Education**

This section instructs the Secretary of Education to conduct a comprehensive evaluation of all STEM education programs of the Department of Education, including:

- Mathematics and Science Partnerships;
- Math Now for Elementary School and Middle School Students;
- Math Skills for Secondary School Students;
- Minority Science and Engineering Improvement;
- Teachers for a Competitive Tomorrow;
- National Science and Mathematics Access to Retain Talent (SMART) grant;
- Teacher Education Assistance for College and Higher Education (TEACH) Grants;
- Academic Competitiveness Grants; and
- Grants authorized under the Carl D. Perkins Career and Technical Education Act of 2006.

The evaluation consists of the following:

1. An examination of the coherence of the Department of Education in administering STEM education programs, including identifying unnecessary overlap;

2. Identifying the unmet State and local education needs that could be filled with reorganization or expansion of existing STEM education programs;
3. An evaluation of the ease of access to information on STEM education programs by students, educators, and others target populations;
4. An evaluation of the ability of the Department of Education to disseminate information from the STEM Council; and
5. A proposal for how the Department of Education can address any needs or problems.