

STEM Education Coalition



June 4, 2007

The Honorable George Miller
Chairman
Committee on Education and Labor
U.S. House of Representatives
2205 Rayburn House Office Building
Washington, DC 20515

The Honorable Howard P. McKeon
Ranking Member
Committee on Education and Labor
U.S. House of Representatives
2351 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Miller and Ranking Member McKeon:

On behalf of the Science, Technology, Engineering, and Mathematics (STEM) Education Coalition, we are writing to express our support for several key STEM education policy priorities related to a competitiveness bill from the Education and Labor Committee.

The STEM Education Coalition comprises a diverse range of organizations representing all sectors of the technological workforce – from knowledge workers, to educators and education researchers, to scientists, engineers, and technicians. Our Coalition works to raise awareness in Congress and throughout the Executive Branch about the critical role that STEM education plays in enabling the U.S. to remain the economic and technological leader of the global marketplace of the 21st century.

Strengthening student achievement in math and science and attracting more students to pursue STEM degrees are major priorities of the 110th Congress. This year, the Senate passed a bipartisan competitiveness leadership bill (S. 761) to improve math and science education and increase federal support for basic research. Similarly, through the leadership of the Committee on Science and Technology, the House overwhelmingly approved the National Science Foundation reauthorization bill (H.R. 1867) and the “10,000 Teachers, 10 Million Minds Science and Math Scholarship Act” (H.R. 362). As the Education and Labor Committee works toward a complementary piece of legislation, we urge you and your colleagues to strongly consider including the following proposals related to STEM education:

Establish P-16 STEM Councils

Provide grants to establish or strengthen existing state-based P-16 councils. Councils would be focused on alignment of K-12, higher education, and workforce systems and provide a venue for addressing pipeline issues and implementing systemic reforms. Councils should be composed of key state stakeholders, including state officials and representatives of the K-12, postsecondary education, and business communities. Council activities should include:

- Alignment of K-12 standards, assessments, and curricula with the expectations of postsecondary education and the workforce;
- Align teacher preparation/certification with K-12 standards;
- Promote the adoption and/or improvement by states of high-quality standards and assessments in science, technology, engineering and mathematics subject areas;
- Focus on systemic issues, especially related to the improvement of struggling schools and teacher recruitment; and

- Promote alignment and rigor for all students by supporting secondary school college preparatory programs with outcomes directly tied to college and work readiness, as validated by external examinations (e.g., International Baccalaureate, Advanced Placement, and QualityCore programs).

Dedicate Funding for Elementary and Middle School Mathematics

Dedicate funding for a mathematics initiative similar to the Reading First program that would provide resources to help schools improve instruction and develop strategies to increase student achievement in mathematics and preparedness for more rigorous high school mathematics coursework.

Strengthen Emphasis on STEM fields in After-School and Summer Programs

Develop programs to support structured after-school and summer activities, in conjunction with local museums, universities and/or businesses, which would sustain student achievement and enhance interest in STEM subject areas. Programs should be inclusive of activities such as exposure to computer programming, robotics, computer art or design software, building materials, design challenges, and other technologies and apprenticeships.

Recruit Highly Qualified STEM Teachers

Support efforts to attract individuals with an interest or background in STEM fields to become teachers by:

- Developing large-scale teacher preparation programs that lead to a STEM degree and a teacher certification, providing prospective educators with both in-depth STEM content knowledge and educational pedagogy. Numerous models of this type have been developed and employed in the states, with one prominent model being the UTeach program employed in the University of Texas system, cited in the report *Rising Above the Gathering Storm* as an exemplary teacher education program.
- Creating part-time master's degree programs in STEM education for current teachers that augment their content knowledge and pedagogical skills;
- Establishing master's degree programs in teaching for individuals in STEM-related professions to receive a teacher certification; and
- Providing service scholarships to cover the cost of teacher preparation programs for those who commit to teach a STEM subject area for a minimum of four years in a high-need school.

Expand PSM Programs in all the STEM Fields

Encourage institutions of higher education to develop professional science master's (PSM) degree programs. Programs should be designed for college graduates with STEM degrees who intend to pursue careers outside academia. Industry should partner with colleges and universities in creating these programs, including supporting program funding.

Many of these recommendations are incorporated in S. 761. If we can provide you any additional information or assistance, please do not hesitate to contact James Brown at 202-872-6229 or Jodi Peterson at 703-312-9214. The STEM Education Coalition looks forward to working with you on this important piece legislation.

Sincerely,

Acoustical Society of America

ACT, Inc.

American Association of Colleges of Teacher Education

American Association of Physicists in Medicine

American Association of University Women

American Chemical Society

American Institute of Physics

American Society of Civil Engineers

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.

Association of Educational Publishers

ASTRA, The Alliance for Science and Technology Research in America

Business Higher Education Forum

Campaign for Environmental Literacy

Chicago Educational Publishing Co.

Education Development Center, Inc.

Exploratorium

Hands on Science Partnerships

Knowledge Alliance (formerly NEKIA)

Museum of Science, Boston

National Center for Technological Literacy

National Council of Teachers of Mathematics

National Science Teachers Association

National Venture Capital Association

Ohio Technology Education Association

Optical Society of America

PTC

Society of Women Engineers

SPIE

Triangle Coalition