

STEM Education Coalition



Science, Technology, Engineering and Mathematics

February 11, 2008

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

The Honorable Edward Kennedy
Chairman
Committee on Health, Education, Labor and
Pensions
U.S. Senate
Washington, DC 20510

The Honorable Howard “Buck” McKeon
Ranking Member
Committee on Education and Labor
U.S. House of Representatives
Washington, DC 20515

The Honorable Michael Enzi
Ranking Member
Committee on Health, Education, Labor and
Pensions
U.S. Senate
Washington, DC 20510

Dear Chairmen Miller and Kennedy and Ranking Members McKeon and Enzi:

As you know, our Coalition is composed of a diverse range of stakeholders; collectively, we represent all sectors of the technological workforce—from knowledge workers, to educators, scientists, engineers, technicians, and representatives from the business community. We believe that excellence in STEM education at all levels, among all populations, is vital to our nation’s long-term economic prosperity, global competitiveness and homeland security.

With House debate on HR 4137, the College Opportunity and Affordability Act imminent, the Science, Technology, Engineering, and Mathematics (STEM) Education Coalition believes that three basic STEM education efforts should be incorporated into HEA legislation:

- Strong support for STEM teacher professional development
- Meaningful incentives to encourage students to obtain STEM degrees and pursue STEM-related careers
- Expansion of efforts encouraging diversity in the STEM workforce by increasing the participation of underrepresented groups

We applaud efforts from your respective committees to include strong STEM-related provisions in the Higher Education Act, America COMPETES Act, the two discussion drafts of No Child Left Behind, and in many other pieces of major legislation, including last year’s College Cost Reduction and Access Act and also the Generations Invigorating Volunteerism and Education (GIVE) Act, to reauthorize federal national service programs.

More prevalent use of research-based instructional methods in elementary and high schools, improved student achievement at all levels, more access to college study, and increased persistence in the STEM disciplines to produce qualified professionals are all needed to spur innovation and U.S. competitiveness. However, in the context of an increasingly tight fiscal environment, we urge Congress to continue to carefully weigh the creation of new programs. It is essential that we gain the greatest possible benefit from every federal investment in improving STEM education.

It is through this lens we offer the following recommendations:

Teacher Quality Enhancement

We support efforts in both the House and Senate bills to improve the accountability of teacher education programs.

We support the House's approach to preparing teachers to use educational technologies effectively in the classroom. The House bills's Title II, Part B, "Preparing Teachers for Digital Age Learners" awards competitive grants to consortia of public and private entities to prepare teachers to use technology. We urge the House and Senate to recognize the difference between *educational technology* (i.e. information, communication, and computer tools) and the distinct field of *technology education* and teachers. There are several instances in Title II of both the House and Senate Bills where math and science are mentioned as high need programs, but not technology and engineering. It is important that each of the STEM disciplines receive appropriate, consistent representation throughout the legislation.

We support the House Bill's proposal to request a study from the National Academy of Sciences on best practices in teacher preparation (Sec. 202). This study will provide important insight and inform future efforts in preparing teachers. Time and again, research has shown that the quality of a teacher is the single most important factor in student achievement.

Encourage Students to Obtain STEM Degrees and Pursue STEM-related Careers

We believe that the American Competitiveness and National Science and Mathematics Access to Retain Talent Grants (ACG and SMART Grants) are yielding benefits and support their continuation. We also support the technical changes being sought that would ease administration of these programs.

We support the House bill's proposal to establish a national database of financial assistance available for study in the STEM disciplines (Section 881). This program would require the Department of Education to create and maintain a public website that includes a database of information on scholarships, fellowships, and other programs of financial assistance available from public and private sources for study in these fields. This effort would also increase the visibility of existing scholarship programs, such as the Byrd Honors Scholarship program and the Patsy Mink scholarship effort that would be authorized in a final bill.

We support efforts in both the House and Senate bills to emphasize the STEM subject areas under the Graduate Assistance in Areas of National Need (GAANN) program (Sec. 702).

Encouraging Diversity in the STEM Pipeline

We support the House Bill's expansion of the Minority Science and Engineering Improvement (MSEI) Program. H.R. 4137 adds a new initiative to the current MSEI program to support the participation of underrepresented minority youth in science, technology, engineering, and mathematics through outreach and hands-on experiential-based learning projects. The bill also includes a marketing campaign aimed at encouraging minorities to enter the fields of science, technology, engineering, and mathematics. These ideas have long been proposed by STEM advocates.

While increasing the number of women and underrepresented minorities in the STEM pipeline is of utmost importance, it is also paramount to support these individuals throughout their STEM careers, as pointed out in the recent National Academies report, *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering*. With this in mind, the Coalition supports the House bill's use of a FIPSE grant for a study on the feasibility and design of an organization on gender and racial equity in campus faculty and administration, to ensure women and underrepresented minorities are not facing subtle biases that discourage them from careers in STEM fields.

In closing, we hope that you will consider the Higher Education Act as an opportunity to enhance and improve STEM education in the United States. If you or your staff has any questions, please do not hesitate to contact James Brown at 202-872-6229 or Jodi Peterson at 703-312-9214.

Sincerely,

American Association of Colleges of Teacher Education
American Association of Physicists in Medicine
American Association of University Women
American Chemical Society
American Council of Engineering Companies
American Geological Institute
American Institute of Aeronautics and Astronautics
American Physical Society
American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
ASME Center for Public Awareness
ASTRA, The Alliance for Science & Technology Research in America
Chesapeake Bay Foundation
Computing Research Association
Council on Undergraduate Research
Education Development Center, Inc.
ETS
IEEE-USA
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International Technology Education Association
Knowledge Alliance
Maine Mathematics and Science Alliance
Museum of Science, Boston
National Association of Manufacturers
National Center for Optics and Photonics Education (OP-TEC)
National Center for Technological Literacy
National Council of Teachers of Mathematics

National Science Teachers Association
Optical Society of America
Parametric Technology Corporation
Project Lead the Way
PTC-MIT Consortium
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Society of Women Engineers
STEM Education Society