

# STEM Education Coalition



March 29, 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 the reauthorization of the No Child Left Behind (NCLB) Act.

The STEM Education Coalition is composed of 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 21<sup>st</sup> century.

The No Child Left Behind Act plays a critical role in preparing all students, especially high risk students, minority students, and students in low income areas, with the skills that are essential for success in today's quickly evolving technological world. We urge you and your colleagues to strongly consider the following recommendations to strengthen programs related to STEM education as you proceed with the reauthorization of NCLB:

## **Strengthen Math and Science Partnerships**

Strengthen the existing program at the Department of Education (DoEd) by:

- Amending the existing program to make possible additional technical support and assistance to state education agencies with oversight of the program so that they can develop and support more state-based STEM reform projects;
- Directing that the two Math and Science Partnership programs at the DoEd and the National Science Foundation (NSF) cooperate to ensure that the models and results derived from the NSF program are proliferated widely through the DoEd program;
- Including technology and/or engineering teachers alongside math and science teachers as allowed participants in all incentive programs enacted to recruit, train, mentor, retain and further educate K-12 teachers; and
- Authorizing at least \$450 million per year as specified funding (current funding authorization is now “such sums as required”).

### **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;
- 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).

### **Establish K-8 Master Teacher Programs**

NCLB should provide resources specifically for the establishment of programs to hire and/or train Master Teachers (also known commonly as math or science specialists) at the K-8 level in a large number of school districts. Master teachers would provide mentoring to other teachers, develop model lessons or co-teach lessons, provide oversight of hands-on inquiry materials, and offer in-service professional development or provide avenues for teachers to obtain professional development.

### **Dedicate Funding for Teacher Professional Development under Title II A**

NCLB should provide increased resources for professional development for all educators, including a dedicated funding stream in Title II A (Teacher Quality) that would go specifically to teacher professional development for STEM educators.

### **Strengthen Emphasis on STEM fields in After-School Programs**

Develop programs to support structured after-school activities, in conjunction with local museums, universities and/or businesses, which would enhance student interest in STEM careers. After school 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.

### **Promote STEM Specialty High Schools**

Authorize increased resources to create additional specialty public schools that focus on the STEM subjects in conjunction with other federal resources and facilities. Such schools should be viewed as demonstration sites to increase student achievement after exposure to integrated coursework based on the best practices available.

### **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.

In addition to these specific recommendations, our Coalition urges you to give consideration to initiatives that will provide increased opportunities for the participation of STEM professionals in the classroom and strengthen high school laboratory science.

If we can provide you additional information or assistance, please do not hesitate to contact James Brown at (202) 872-6229 or Jodi Peterson at (703) 312-9214.

Sincerely,

*Acoustical Society of America*

*ACT, Inc.*

*American Association of Physicists in Medicine*

*American Association of Physics Teachers*

*American Chemical Society*

*American Institute of Physics*

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

*ASME Center for Public Awareness*

*Association of Educational Publishers*

*Business Higher Education Forum*

*Exploratorium*

*Hands-On Science Partnership*

*Museum of Science-Boston*

*National Center for Technological Literacy*

*National Council of Teachers of Mathematics*

*National Education Association*

*National Education Knowledge Industry Association*

*National Science Teachers Association*

*National Society of Professional Engineers*

*Optical Society of America*

*Project Lead the Way*

*SAE International*

*Society of Women Engineers*

*SPIE-The International Society for Optical Engineering*

*STEM Education Society*

*Triangle Coalition*

*University of Kansas*