

Advancing K-12 Technological Literacy and Engineering Education

June 2, 2009

The Honorable Arne Duncan
Secretary
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Dear Mr. Secretary:

On behalf of the undersigned organizations supporting technological literacy and engineering education, we recommend funding from the American Recovery and Reinvestment Act of 2009 (ARRA) be allocated to inspire the next generation of engineers and innovators, essential to our economic strength, and to vastly expand technological literacy and engineering education for all K-12 students.

There is a concern that the nation's preeminence in innovation is eroding. We need a strong, sustainable engineering workforce to remain competitive in the global economy. To attain that goal and to maintain our country's vitality and security, we must expand students' understanding of technology and engineering and increase the attractiveness of careers in these fields so that a diverse array of talented students will pursue them.

The key to educating students to thrive in this competitive global economy is introducing them to the engineering design skills and concepts that will engage them in applying their math and science knowledge to solve real problems. This is the way to harness the creativity of young minds. This is also the process that fuels innovation of new technologies.

Our organizations are actively engaged in promoting the importance of technological literacy and engineering education locally and nationally through a variety of successful programs. Similarly, we are collectively seeking to raise the awareness of engineering education via advocacy and public relations activities like National Engineers Week.

Your publicly stated desire to use a portion of the "Race to the Top" funds to promote world-class standards offers a unique opportunity to further these goals. Specifically, we believe that as part of any such initiative, efforts to improve technological literacy and engineering standards, assessments, and related activities should be included as well.

This Race to the Top effort can build on current and new state initiatives to include technological literacy and engineering in state standards and assessments and serve as a model or resource for other states to adopt, if they desire. Massachusetts, for example, was the first state in the nation to adopt Science, Technology and Engineering standards, and others are following suit. Many were encouraged by the National Governors

Association's recommendation in 2007 that states develop technology and engineering standards and assessments and align K-12 STEM (science, technology, engineering and mathematics) standards to postsecondary and workforce expectations.

However, many states are unable to fully implement these initiatives due, in part, to a lack of resources. By developing technological literacy and engineering standards and assessments, the Race to the Top funds will allow more states to fulfill this goal and improve teaching and learning in STEM fields.

The ARRA presents an historic opportunity to greatly expand student knowledge in technology and engineering and to shape our nation's next generation of engineers and innovators. We look forward to working together with you to make this opportunity a reality.

Sincerely,

Academy of Science-St. Louis
Alabama Career Technologies Education
Alabama Mathematics, Science, and Technology Education Coalition
American Institute for Medical and Biological Engineering
American Society of Civil Engineers
American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.
American Society for Engineering Education
ASME Center for Public Awareness
Association of Texas Technology Education
ASTRA, Alliance for Science & Technology Research in America
Center for Minority Achievement in Science and Technology
Chemawa Indian School (BIA), Salem, OR
Design Science, Inc.
Engineering & Technology Educators of Indiana
FIRST LEGO League of MD
IEEE-USA
Illinois Mathematics and Science Academy
Illinois State University, Center for Mathematics, Science, and Technology (CeMaST)
Indiana Mathematics, Science and Technology Education Alliance
Institute for P-12 Engineering Learning and Research (INSPIRE), Purdue University
Intel Corporation
International Technology Education Association
Iowa Industrial Technology Education Association
ITEA Council for Supervisors
JETS, Inc.
Kentucky Engineering & Technology Education Association
Massachusetts Business Roundtable
Math for America
Miami Science Museum
Minority Business RoundTable

Mississippi Technology Education Association
National Center for Technological Literacy/Museum of Science, Boston
National Center for Women & Information Technology
National Engineers Week - Future City Competition - Ohio Region
National Girls Collaborative Project
National Science and Technology Education Partnership
National Science Center
National Society of Professional Engineers
New Jersey Technology Education Association
New York Hall of Science
New York State Technology Education Association
North Dakota Technology Education Association
North East Ohio Technology Education Association
Ohio Northern University, Department of Technological Studies
Ohio Technology Education Association
Parametric Technology Corporation
Pennsylvania Technology Student Association
Project Lead the Way
PTC-MIT Consortium
Science Education Foundation of Indiana, Inc.
Science Olympiad
SkillsUSA
Society of Women Engineers
SouthEast Educational, Inc.
State Supervisors for Technology Education
Stevens Institute of Technology
Teachers Clearinghouse for Science and Society Education
Technology Education Association of Pennsylvania
Technology is Elementary, OH
Technology Student Association
Texas Education Service Center, Region XIII
The Ohio Academy of Science
The School of Engineering Education, Purdue University
The South Arkansas Mathematics and Science Center
Transportation Center at Cleveland State University
Triangle Coalition
University of Pittsburgh at Johnstown
Urban STEM Strategy Group, PA
Valley City State University Department of Technology, ND
Vermont Design & Technology Education Association
Vernier Software & Technology
Waksman Foundation for Microbiology
Westlake High School, OH
Wisconsin Energy Efficient Vehicle Association
Wisconsin Technology Education Association