



December 12, 2016

Dear State Policymaker,

We write to you as a broad alliance of education, business, and professional organizations that are strongly committed to the goal of elevating the education of all students in science, technology, engineering, and mathematics (STEM) as a national, state, and local priority as reflected through education reforms, policies to drive innovation, and spending priorities.

The recently enacted federal education law, the Every Student Succeeds Act (ESSA), puts a broad array of key decisions affecting teaching and learning back into the hands of states and districts. This increased state and local control will be critical to states and districts that are working to improve STEM education outcomes for all students.

A high-quality, integrated STEM education encompasses quality standards, innovation, critical thinking, engineering, informal science opportunities, and competitions that contribute to increased mathematics and science performance for all students. Yet too many K-12 education systems are simply not providing students this curriculum or rigorous and equitable STEM opportunities. About half of all high schools don't offer calculus, 37 percent don't offer physics, and 25 percent don't offer chemistry or advanced placement statistics. The statistics are even more dismal in underserved communities. In schools with the highest percentage of minority students, only 23 percent offer calculus and only 30 percent of rural schools offer computer science courses.

The steps you take now to prepare our children in STEM will have an enormous impact on your state's economy, America's national security, and this country's continued leadership in STEM.

Utilizing high-leverage funding opportunities under ESSA will greatly benefit STEM education in your state. Our community worked with education, business, and industry stakeholders to help make STEM education a priority in the bipartisan and broadly-supported law.

*The undersigned organizations ask you to consider these specific recommendations as you develop your state-based strategies around ESSA implementation.*

- ❖ **States leaders should utilize science assessments and outcomes as part of your state's accountability system.** ESSA continues to require states to maintain standards in math and science and requires students to be tested three times between grades 3 and 12 in science, and annually in grades 3 through 8 and once in high school in mathematics. The law also requires new state accountability plans to include indicators including proficiency on assessments.
- ❖ **We encourage you to use Title I state funds to create or improve science assessments, especially in states working to adopt and implement new science education standards.** ESSA Title I provides federal funding for the development of state assessments that would integrate engineering and technology concepts into science tests.
- ❖ **Use ESSA Title II (Preparing, Training, and Recruiting High-Quality Teachers, Principals, and Other School Leaders) funding to provide professional development to teachers on STEM content areas and develop STEM leaders and mentors.** ESSA Title II focuses on

raising student achievement by improving the quality of teachers, principals, and other school leaders. Currently, only 30 percent of 8<sup>th</sup> graders are taught math by teachers with an undergraduate degree in the field and only 39 percent of elementary school teachers feel very well-prepared to teach science. Title II also supports the integration of career and technical education into academic instructional practices, including training on best practices in understanding workforce needs and transitions to postsecondary education and the workforce. This will strengthen college and career readiness and ensure that more students enter the workforce with the skills they need to compete for high-skilled, in-demand jobs.

- ❖ **Utilize Title II funds to establish, expand, or improve alternative certification for STEM teachers and provide for differentiated pay and other incentives to recruit and retain teachers in math and science.** The law also allows states to develop career academies for STEM educators and we urge states using these funds to strengthen and enlarge the pipeline of STEM teachers.
  
- ❖ **Ensure Title IV, Part A funding is used to support the wide range of activities that are specifically allowed in the statute to improve STEM teaching and learning.** ESSA Title IV, Part A —the Student Support and Academic Enrichment Grants-- provides funding directly to states and districts to support a wide range of school programs designed to support a well-rounded education for students, create safe and healthy school environments, and improve the use of technology in every school district. Some examples of how this funding could be used include:
  - **Expansion of high-quality STEM courses;**
  - **Increased access to STEM for underserved and at-risk student populations;**
  - **Support for student participation in STEM nonprofit competitions;**
  - **Provide hands-on learning opportunities in STEM;**
  - **Integration of other academic subjects, including the arts, into STEM subject programs;**
  - **Creation or enhancement of STEM specialty schools;**
  - **Integration of classroom based, afterschool, and informal STEM instruction; and**
  - **Expansion of environmental education.**

As you begin to implement the new federal education law it is critical that STEM education programs be given high priority so that stakeholders can work together to design strategies for achieving scale for STEM learning experiences to improve STEM educational outcomes for all students

If you are interested in having further discussions about how your state or district can leverage the ESSA to improve STEM education, or how the STEM community can be of assistance to you, please contact the STEM Education Coalition Executive Director James Brown at (202) 400-2192 or [jfbrown@stemedcoalition.org](mailto:jfbrown@stemedcoalition.org).

Thank you for your consideration.

Sincerely,

STEM Education Coalition  
Afterschool Alliance  
American Chemical Society

American Society of Civil Engineers  
American Statistical Association  
American Society of Mechanical Engineers  
Education Development Center  
FIRST  
Hands on Science Partnership  
IEEE-USA  
National Consortium of Secondary STEM Schools  
National Council of Teachers of Mathematics  
National Science Teachers Association  
National Society of Black Engineers

A.P.N.G. Enterprises Inc.  
Afterschool All-Stars  
Altshuller Institute for TRIZ Studies  
American Anthropological Association  
American Geophysical Union  
American Meteorological Society  
CAML Academy (NC)  
Campaign for Environmental Literacy  
Community Based Care of Central Florida, Inc.  
Cool Creator Club, LLC.  
COSI Center for School & Community Partnerships (OH)  
DEBLAR & Associates (GA)  
Discovery Center of Springfield (MO)  
Dowling Magnets  
EduCare Foundation  
Edventure More  
Girl Scouts of the USA  
Hawaii Gifted Association  
In Reach  
Jaybird Group  
Learning Blade/Thinking Media  
Learning Options, Inc.  
LearnOnLine, Inc  
Los Angeles Area Memorial Coliseum  
Magnet Schools of America  
Magnet Schools of America  
Maine Mathematics and Science Alliance  
Maryland Academy of Science at the Maryland Science Center  
Minnesota Science Teachers Association  
National Center for Technological Literacy at the Museum of Science, Boston  
National Council for Advanced Manufacturing  
National Girls Collaborative Project  
National Institute of Building Sciences  
North Dakota STEM Network  
OregonASK  
Orion's Quest

Royal Welding and Fabricating (CA)  
SciMathMN (MN)  
STEM for Kids  
STEM Magazine  
Storm Robotics PC  
Students4STEM  
Teaching Garage  
The Exploratorium  
Utah Afterschool Network  
Watching Over Our Daughters and Sons, Inc.  
Wisconsin Afterschool Network  
Young Adult Library Services Association  
YumScience  
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