



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. ESSA continues prior requirements requiring states to maintain standards in math and science and test students 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 *does* require new state accountability plans to include indicators including proficiency on assessments.

- ❖ **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 8th 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 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 encouraged 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;**
 - **Providing hands-on learning opportunities in STEM;**
 - **Integration 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 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 and schools that foster long-term sustainability and 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 off assistance to you, please contact the STEM Education Coalition's Executive Director, James Brown at (202) 400-2192 or 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
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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