



October 28, 2019

The Honorable Lamar Alexander  
Chairman  
Senate HELP Committee  
Washington, DC 20510

The Honorable Patty Murray  
Ranking Member  
Senate HELP Committee  
Washington, DC 20510

The Honorable Robert Scott  
Chairman  
House Education and Labor Committee  
Washington, DC 20515

The Honorable Virginia Foxx  
Ranking Member  
House Education and Labor Committee  
Washington, DC 20515

Dear Committee Leaders:

As the Congress considers reauthorization of the Higher Education Act (HEA), our organizations have assembled a series of policy recommendations that reflect the views of our diverse alliance of education, business, and professional organizations and our shared interests in science, technology, engineering, and mathematics (STEM) education.

Our complex and changing world demands an adaptable workforce that is prepared to collaboratively reason through tough problems and come up with creative solutions to the challenges of tomorrow. STEM educational opportunities cultivate students' curiosity and creativity while teaching them to work as a team, base their reasoning on evidence, and solve problems through experimentation. Our students must gain the critical thinking abilities and other transferrable skills offered by STEM to be prepared for the unknown challenges and opportunities of our future. As such, education in STEM must be elevated as a national priority by enacting education reforms, crafting policies to drive innovation, and adapting federal spending priorities.

**A More Robust STEM Education Pipeline:**

We support comprehensive efforts to expand the capacity and diversity of the STEM workforce pipeline, including targeted initiatives to promote the inclusion of underrepresented minorities, women, and other high-need populations in STEM fields.

African-American and Latino/a workers now represent 30 percent of the general workforce population (up from about 24 percent in 2001), but just 16 percent of the advanced manufacturing workforce, 15 percent of the computing workforce and 12

percent of the engineering workforce—all rates that have remained essentially flat for many years.

With women making up just 24% of the STEM workforce and people of color making up only 30%, any higher education reform legislation must contain provisions that promote these groups entering the high-need STEM fields. This includes, but is not limited to, maintaining robust financial aid (grants, loans, and work-study) opportunities and encouraging meaningful mentorship between students and educators.

We support increasing the capacity of institutions of higher education that traditionally serve a large proportion of low-income and underrepresented groups. To this end, we urge Congress to reauthorize and expand the Minority Science and Engineering Improvement Program to support much larger cohorts of students to study and succeed in STEM fields.

### **A Strong Focus on STEM Educators:**

We support robust and sustained investments in preparing and retaining new teachers, at both the elementary and secondary levels, to be skilled in STEM pedagogical content knowledge so that they can generate strong student learning and excite students about pursuing STEM careers, including targeted efforts to promote STEM subject master teachers and teacher specialists.

We support efforts to create clear pathways from high school graduation to STEM teacher certification. This includes retaining the existing Title II Teacher Quality Enhancement grants. These programs, which support the recruitment and training of high-quality educators, are especially important to the STEM disciplines, where we are already facing a lack of qualified STEM educators in K-12 schools.

Congress should support meaningful incentives to encourage both mid-level STEM career professional and recent high school graduates to pursue teaching. This need is especially dire in the engineering and computer science teaching communities, where pathways to these careers are uncertain.

We also support robust dedicated federal funding for effective in-depth professional development for in service STEM educators, including informal educators.

### **High-Quality Opportunities at All Education Levels Have a Vital Role in Supporting the STEM Workforce**

We support targeted efforts to expand the capacity of community colleges to prepare students for further STEM education and for the STEM workforce.

Some of the biggest job growth in the STEM workforce is occurring in middle-skills, technician-level positions. Any higher education reform must provide greater support not only for high-quality STEM education and career opportunities for PhD and four-year

degree students, but also for students pursuing apprenticeships, trade certifications, and two-year degrees. Education in these tracks must include a clear pathway to a meaningful career, should include hands-on training, and where applicable should embrace emerging trends in competency-based education.

We encourage legislation that invests in undergraduate and graduate research experiences by including support for collaboration with industry, academic institutions, government and international partners. We encourage an expanded vision of scholarship that rewards and promotes high quality research within STEM disciplinary fields and ensures that students have access to deeper study of STEM, guiding the development of programs, tools, and methods for improving the teaching and learning.

High-quality STEM opportunities should also be available through the federal work-study program. This program helps qualifying students pay for school, but could also be leveraged as a meaningful learning opportunity when strongly aligned with their course of study. We encourage using work study funding to support graduate student education, research opportunities, and for work in community based organizations like STEM-focused afterschool and summer learning programs.

Finally, ensuring that female students and employees, as well as researchers and faculty members studying in STEM fields feel safe in classrooms, labs and academic workplaces, should be a priority of the HEA. The HEA should promote awareness amongst females of their rights on campus and include a clear path of redress for pursuing remedies afforded to them by federal statute.

We appreciate the opportunity to share our views and we look forward to working with you and your staff closely during the reauthorization of the Higher Education Act. For further information please contact James Brown, Executive Director, STEM Education Coalition, at (202) 400-2192 or [jfbrown@stemedcoalition.org](mailto:jfbrown@stemedcoalition.org).

Signed,

STEM Education Coalition  
National Council of Teachers of Mathematics  
American Chemical Society  
American Society of Biochemistry and Molecular Biology  
Society of Hispanic Professional Engineers  
Battelle  
Girls Inc.  
Hands on Science Partnership  
Society of Women Engineers  
National Science Teaching Association  
Afterschool Alliance  
Education Development Center  
CompTIA  
National Association of Biology Teachers

National Consortium of Secondary STEM Schools  
American Society for Engineering Education  
American Council of Engineering Companies  
The Goddard School for Early Childhood Development  
APNG Enterprises, Inc.  
Kansas City STEM Alliance  
BioNexus KC  
NY Sun Works