

Maintaining U.S. Economic Competitiveness: Reauthorizing the America COMPETES Act

Seeking to strengthen U.S. leadership in the areas of science, technology, engineering, and mathematics (STEM), the U.S. House of Representatives approved by a vote of 262-150 the reauthorization American COMPETES Act. The crucial legislation would authorize \$85.6 billion in spending on STEM programs over five years. BHEF first supported the bill in 2007, when it was enacted by President Bush with strong bipartisan support.

The approved reauthorization bill, which awaits Senate action, maintains the planned doubling for the Department of Energy's (DOE) Office of Science, the National Science Foundation's (NSF), and the National Institute of Standards & Technology's (NIST) research budgets by 2017. Additionally, the bill would increase levels of support for STEM education by coordinating federal activities and improving education at all levels, including undergraduate and graduate education.

COMPETES Background

The America COMPETES Act was enacted in 2007, largely in response to the report "Rising Above the Gathering Storm," which was commissioned by Congress and asserted the need for additional federal investments in basic research and in STEM education in order to counter threats to U.S. competitiveness. The bill was passed with strong bipartisan support in Congress and with overwhelming support of the business and scientific communities.

The law sought to ensure not only that the nation would continue to be the world's leader in research and innovation, but also that it would produce the next generation of scientists and engineers capable of driving innovation. The original bill included more than 100 sections that direct specific programs and policies at seven federal offices and agencies, including the Office of Science and Technology Policy (OSTP), the National Aeronautics and Space Administration, NIST, the National Oceanic and Atmospheric Administration, DOE, the Department of Education, and NSF.

The 2007 COMPETES Act also sought to address concerns about lagging U.S. student performance in mathematics and science, STEM teaching and learning, and the nation's ability to replicate and scale promising practices. However, many of the provisions of the legislation failed to be funded, or were only recently funded with the passage of the American Recovery and Reinvestment Act (ARRA) in 2009.

COMPETES Reauthorization

HR 5116, the House reauthorization bill that was passed on May 28, 2010, builds upon the 2007 legislation by keeping research funding for NSF, DOE, and NIST on track for doubling by 2017 and by increasing levels of support for STEM education. In addition, it contains several new features that would seek to increase the numbers of students who earn STEM degrees and choose STEM careers, consistent with recommendations by BHEF and several of its members (see sidebar).

Indeed, for the first time, the House bill includes a number of provisions that would help transform STEM undergraduate and graduate education, and encourage stronger collaborations between business/industry and higher education. These provisions will encourage a systemic approach that bolsters postsecondary STEM education as well as K-12 education.

The reauthorization also contains language to expand the Robert Noyce Teacher Scholarship Program, and reduce its cost-sharing requirement so that a more diverse group of colleges could afford to participate. However, the bill does not extend funding for the Mathematics and Science Partnership (MSP) Program, which was part of the original America COMPETES Act and is run by NSF.

New measures in the bill would ensure better coordination of STEM education activities across federal agencies. The bill also requires the White House to create an advisory committee on STEM education responsible for soliciting input from a variety of stakeholder groups, including business and higher education, with the goal of offering guidance to the president on how to better align federal programs with the needs of states and school districts and increasing connectivity among public and private STEM education efforts.

Another measure calls on NSF, NIST, and the Department of Education to collaborate in identifying “grand challenges” in STEM education research including those that use a systems approach and then deciding what role each federal agency should play in supporting and disseminating the research and its results.

BHEF Testifies in Favor of HR 5116

Earlier this year, BHEF member Rick Stephens, senior vice president, human resources and administration, The Boeing Company, [testified](#) before the House Science and Technology Committee on strengthening STEM undergraduate education.

BHEF members Jim Simons, founder and chairman of Renaissance Technologies and Math for America (MfA); Gordon Gee, president, The Ohio State University; and Jeffrey Wadsworth, president and CEO, Battelle Memorial Institute also [testified in support of the bill's reauthorization](#), as well as for strong partnerships involving business, K-12, and higher education that would bolster current programs and efforts, and lead to even more successful ones.

Key STEM Postsecondary Education Provisions in HR 5116

Undergraduate Education

- Transforming Undergraduate Education in STEM
- Broadening Undergraduate Participation
- Research Experiences for Undergraduates
- STEM Industry Internships
- Tribal Colleges and Universities

Graduate Education

- Graduate Student Support
- Postdoctoral Research Fellowships
- 21st Century Graduate Education
- Postdoctoral Fellowship in STEM Education Research
- Broadening Participation in Training and Outreach