



Securing America's Leadership in Science, Technology, Engineering, and Mathematics (STEM)

"Whether you are in business or education, we all have to act now to help secure the pipeline of STEM talent for our nation's future."

— William H. Swanson, Raytheon Company Chairman and CEO and BHEF 2010-2011 Chair

BACKGROUND

America's advantage over its international competitors in science, technology, and innovation is diminishing. A major reason for this trend is the declining interest and proficiency of U.S. students in science, technology, engineering, and mathematics (STEM) fields.

Since 2005, BHEF has been committed to a STEM Initiative focused on securing America's leadership in STEM. Its initial goal was to double the number of STEM college graduates by 2015. In recent years, BHEF has deepened and expanded the initiative, employing innovative tools — such as a unique system dynamics model of the STEM education system — and research to refine its understanding of the key leverage points that impact the number and quality of graduates in STEM fields.

STEM HIGHER EDUCATION AND WORKFORCE PROJECT

Most recently, under the leadership of **Walter Havenstein**, CEO, SAIC, and **Mark Wrighton**, Chancellor, Washington University in St. Louis, BHEF has launched the STEM Higher Education and Workforce Project to forge new strategic partnerships among business and industry, higher education, and government to strengthen STEM higher education and enhance the STEM workforce. Through complementary regional and national strategies, the project seeks to identify and encourage the scaling of programs, policies, and strategies that deepen college-level STEM learning and increase enrollment, persistence, and successful graduation of students, particularly women and underrepresented minorities, from STEM-centered undergraduate and graduate programs, and strengthen pathways into STEM careers.

An initial aspect of this project has focused on building awareness and support for Professional Science Master's (PSM) programs among leaders in business, higher education, and government. PSM programs provide students with intensive interdisciplinary graduate level coursework in STEM combined with training in management and workplace skills such as communication, teamwork, finance, and marketing. In particular, BHEF has developed numerous profiles of the most promising [PSM programs](#), [a PSM issue brief](#), and [an overview](#) of business involvement in PSMs. All of these publications, as well as [the PSM Program Locator](#) tool that allows users to access a compendium of PSM programs, are now featured on BHEF's online resource center, www.StrategicEdSolutions.org.

OTHER STEM INITIATIVE ACTIVITIES

The STEM Higher Education and Workforce Project builds on previous STEM Initiative efforts in which BHEF has:

COLLABORATED with Raytheon in developing the BHEF U.S. STEM Education Model. This system dynamics model enables users to examine the impact of proposed policy interventions and strategies on the number of STEM-capable and interested students in order to better understand which policies and strategies have the greatest potential to improve student interest and proficiency in STEM disciplines, and thus increase the number of STEM college graduates. Among the key insights: focusing on STEM higher education can produce significant return on investment by retaining students in higher education who have already demonstrated the pre-requisites to success in STEM — proficiency and interest — but who nonetheless too often leave the STEM disciplines while in college. To learn more, download a brief [description of the project](#) (pdf) or a [new report about the model](#) (pdf) or [run the model](#).

ESTABLISHED the [STEM Research and Modeling Network \(SRMN\)](#), to foster an open-innovation community devoted to improving U.S. STEM student outcomes, augmenting the BHEF U.S. STEM Education Model, and advancing predictive modeling tools in education. Visit the SRMN Web site at www.stemnetwork.org.

PUBLISHED [An American Imperative](#), a report that proposed a comprehensive action plan to elevate the status of the STEM teaching profession and focused on transforming three key components that contribute to a robust, world-class teaching workforce: teacher recruitment, retention, and renewal.

BHEF is the nation's oldest organization of senior business and higher education executives dedicated to advancing innovative solutions to U.S. education and workforce challenges. Composed of Fortune 500 CEOs, prominent college and university presidents, and other leaders, BHEF addresses issues fundamental to our global competitiveness. It does so through two initiatives: the College Readiness, Access, and Success Initiative (CRI), addressing college- and work-readiness, access, and success; and the Securing America's Leadership in Science, Technology, Engineering, and Mathematics (STEM) Initiative, promoting America's leadership in STEM. BHEF and its members drive change locally, work to influence public policy at the national and state levels, and inspire other leaders to act.

To learn more about BHEF's STEM Initiative, please visit www.bhef.com.