



***“An American Imperative: Transforming the Recruitment, Retention, and Renewal
Of Our Nation’s Mathematics and Science Teaching Workforce”***

REPORT HIGHLIGHTS

Deeply concerned about low student interest and achievement in mathematics and science, the Business-Higher Education Forum (BHEF) – harnessing the best resources of corporate America and higher education – uses this new report to call for an aggressive campaign to increase the number of teachers and improve the quality of our nation’s teaching workforce, particularly in the critical disciplines of mathematics and science.

Challenges in Education

- To ensure that the United States remains intellectually vibrant and economically competitive, we need to invest future generations of Americans with strong skills in the STEM areas: science, technology, engineering and mathematics. Current low levels of student interest and achievement in these subjects threaten our future ability to innovate and sustain our position in the global marketplace.
- Our nation will need more than 280,000 new mathematics and science teachers by 2015; this shortfall is already deeply felt in many schools, particularly those that serve our nation’s poorest students.
- Research shows that the quality of P–12 mathematics and science teaching is the single most important factor in improving student performance.

Report Recommendations

“An American Imperative” maps an action plan to transform teaching and learning in science and mathematics through action in three core areas: teacher recruitment, retention and renewal.

Recruitment: Strengthen teacher recruitment policies in mathematics and science.

- Implement a comprehensive package of mathematics and science teacher education recruitment strategies, starting in P–12 and extending through graduate school, that include incentives such as scholarships, signing bonuses and differential pay.
- Strengthen the content and quality of teacher preparation programs to ensure a national mathematics and science teacher workforce capable of preparing P–12 students for success in higher education and the workplace.
- Expand strategies to attract talented individuals in STEM-related professions to teaching, and ensure that they are adequately trained for the classroom.

Retention: Improve the retention of both new and experienced teachers, and address the causes of teacher dissatisfaction.

- Develop and implement research-based induction programs for all new mathematics and science teachers.

- Implement comprehensive policies and programs that address the leading causes of teacher job dissatisfaction, including inadequate compensation, lack of administration support and professional isolation.

Renewal: Ensure that all mathematics and science teachers participate in renewal activities that support their effectiveness in the classroom.

- Provide ongoing, research-based professional development programs focused on both content and improved instructional skills for all mathematics and science teachers.
- Revamp teacher license renewal programs to incorporate measures of teacher effectiveness.
- Establish statewide data collection systems that track student progress, teacher effectiveness and employment trends of mathematics and science teachers.

To help bolster the teacher workforce in mathematics and science, the report suggests more than 100 specific roles for five groups of stakeholders—the federal government, state governments, school districts, higher education and business and foundations—and cites the importance of these groups working together to improve mathematics and science education. In particular, the report calls on business and higher education to provide critical leadership.

A Time for Action

In order to drive on-the-ground support of its major recommendations, “*An American Imperative*” calls for reforms to start with four specific actions.

- **National Consortium.** BHEF calls for the creation of a national consortium among the stakeholders listed above to improve teacher recruitment, retention and renewal and elevate the status of the teaching profession. The consortium would launch a national public awareness campaign to promote the teaching profession, share information and coordinate resources and encourage business and philanthropic support for the most promising programs and strategies.
- **Federal Policies.** BHEF advocates for new and expanded federal policies that address teacher recruitment, retention and renewal, including provisions in the No Child Left Behind Act, Higher Education Act, and National Science Foundation appropriations.
- **State Policy.** BHEF encourages each state to develop a comprehensive plan to ensure an adequate long-term supply of highly qualified teachers.
- **P-16 Councils.** BHEF calls for the expansion of state and regional P-16 education councils to help coordinate the design and implementation of proposed reforms.

The recommendations in “*An American Imperative*” are part of a major BHEF initiative, “Securing America’s Leadership in Science, Technology, Engineering and Mathematics (STEM),” that seeks to double the number of students with degrees in STEM fields by 2015.

William H. Swanson, Chairman and CEO of Raytheon Company and Warren J. Baker, President of California Polytechnic State University, serve as co-chairs of the group of BHEF members who are leading the initiative and produced the report.

A copy of the full report is available on BHEF’s web site, www.bhef.com.