MAA
MATHEMATICAL ASSOCIATION OF AMERICA

## FY 2011 Commerce, Justice, Science Appropriations Bill
## Support for Recruitment and Retention in Undergraduate STEM Education
## National Science Foundation

### Background

Undergraduate mathematics education is the foothold in STEM education. Students and our nation's rising professionals in science, technology, and engineering must acquire strong mathematical skills in college for advanced learning and professions in the STEM fields. To ensure the social, economic health and security of our nation, the capacity of America's colleges and universities must be increased to train the next generation of STEM professionals – but begin by improving the ability to attract and retain students into mathematics and science at the postsecondary level. Recent research indicates that while more and more students are starting college with the intention of majoring in the STEM disciplines, actual completion rates are lagging, especially among underrepresented minorities.[1]

### Request

The MAA urges Congress to strengthen existing federal programs to attract and retain students in STEM and mathematics education at the undergraduate level through the reauthorization of the America COMPETES Act (P.L. 110-69). The federal role in STEM programs must be leveraged to not only provide access to postsecondary education, especially for students from underrepresented populations, but establish university models on the principles of mentoring for the successful **completion** of undergraduate degrees in the STEM disciplines. Students must be supported through networks that include faculty role models and mentors. There are examples of effective programs that recruit and retain students into mathematics and the other STEM disciplines, but no coherent and systematic efforts to replicate them on a national scale. Scholarships are essential to support promising students who might otherwise be denied opportunities; but they must be integrated into effective programs that will provide high school-to-college bridge programs in STEM; active recruitment of students from diverse backgrounds into the study of mathematics; training for faculty to advise and mentor students purusing STEM majors; and preparation for transition from college to graduate school in mathematics and science. To address this issue, the MAA recommends the following language in the FY 2011 Commerce, Justice, Science Appropriations Bill to enc:

> *The Committee is encouraged by the growing number of students entering into college to pursue STEM careers, but concerned about lagging completion rates, particularly among underrepresented populations and women. To ensure successful complete of degrees in undergraduate STEM education, the Committee urges NSF to include college bridge program, training for faculty to advise and mentor students purusing STEM majors; and including preparation for transition from college to graduate school in mathematics and science in all programs targeted to improve undergraduate STEM education.*

[1] Mitchell Chang, Sylvia Hurtado, Kevin Eagan and Josephine Gasiewski, "Degrees of Success: Batchelor's Degrees Completion Rates among Initial STEM Majors", Higher Education Research Institute at UCLA, January 2010.

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