



Massachusetts Board of Higher Education

STEM Pipeline Fund

Background

Science, technology, engineering and math (STEM) occupations will be among the fastest growing in coming years. These areas will also offer highly competitive salaries. It is estimated that about 79,000, or 30%, of all new jobs in Massachusetts in 2014 will be in STEM fields, an increase of almost 20% over 2004.

The current challenge is that students are not entering STEM careers at the rates that will be required to meet the requirements of Massachusetts employers. The opportunities to change this pattern reach into experiences and choices that occur in late elementary and middle schools, thus requiring a "pipeline" approach to policy.

Since 2003, the Board of Higher Education, through the STEM Pipeline Fund, has been working with employers and education leaders to develop statewide and regional programs to address the STEM student shortage and enhance the quality of education.

Policy and Process

In 2003, the Legislature enacted an Economic Stimulus package that included \$2.5 million to establish the Massachusetts Science, Technology, Engineering and Mathematics Grant Fund (the STEM Pipeline Fund). The Fund has since been recapitalized twice with \$4 million through the 2006 Economic Stimulus legislation and the FY08 budget.

The Fund was created with the goals of increasing the number and quality of students who enter STEM fields; increasing the number of qualified STEM teachers; and improving STEM educational offerings.

The 2006 Economic Stimulus legislation also created the Robert H. Goddard Council on STEM Education, which is co-chaired by two legislative appointees and includes members of the education, business, workforce development, and legislative communities. The Council was created to advise the Board of Higher Education and the legislature on STEM

workforce development programs and policy. The Board of Higher Education serves as the staff to the Council.

Initiatives supported by the Fund fall into three categories:

Regional PreK-16 Networks The Board of Higher Education funded competitive grants for Regional PreK-16 Networks, which coordinate STEM programming among elementary and secondary schools, higher education, workforce development providers, employers, and non-profit organizations.

Project Support With \$2.3 million in 2004 and \$1.7 million in 2007, grants from the STEM Pipeline Fund have supported 36 projects across the state and have been disbursed to 7 lead institutions and over 50 partner organizations. The projects support one or more goals of the STEM Pipeline Fund and have a direct impact on thousands of students and teachers.

State Level Policy Grants These grants are awarded competitively, to address priorities and programs selected by the Goddard Council or the Pipeline Fund staff.

The University of Massachusetts Donahue Institute evaluates pipeline fund programs and has developed the Massachusetts Statewide STEM Indicators Project (MASSIP), which analyzes STEM data to examine progress made in STEM education and employment in Massachusetts.

Recommendation

The STEM Pipeline Fund requires a long-term investment but the return will be greater industry growth and productivity gains, and enhanced earnings potential. It will provide thousands of students and teachers with the skills and knowledge to engage competitively in the Knowledge Economy.

The Board will continue to advocate for annual funding to continue the STEM Pipeline Fund and its objective to promote and enhance STEM education throughout the Commonwealth.