Boston Science, Technology, Engineering and Math (STEM) Network

Strengthening the economy requires meeting the needs of local employers and residents. Given that eighty percent of jobs created in the next decade will require math and science skills – and STEM related jobs are better compensated and more stable than other sectors – building a pipeline of students to enter the field is critical.[1]

In the summer of 2011, Massachusetts Education Secretary Reville and Higher Education Commissioner Freeland asked the Boston Private Industry Council to organize the Commonwealth's Boston STEM Network. Co-chaired by the United Way of Massachusetts Bay and Merrimack Valley, the Boston Public Schools and the PIC, the Network is comprised of representatives from the public education system, STEM businesses, after school programs, labor organizations, philanthropic partners and others from the community. The Network analyzes what effective instruction and excellent partnership must look like in order to increase student interest and achievement in STEM subjects. The group also builds the STEM network in Boston, inventories partnerships and programs, submits a plan that develops local initiatives, and promotes a "WOW campaign" (an education campaign of inspiring STEM professionals and accomplishments), as tasked by the Commonwealth.

The Governor's STEM Advisory Council recognizes career exploration and experiential learning as an effective strategy for increasing student interest. The Council seeks to expand "real world learning" opportunities in school, community and industry settings by developing educators and building partnerships with STEM employers. Members advocate for all students to gain "STEM fluency" through improved curricula and assessments, and rigorous teaching, including an emphasis on problem-solving and vertical alignment between subjects taught at various grade levels.

The Governor's STEM Advisory Council also has established the following quantitative goals for each regional network:

1. Increase student STEM interest (measured by the SAT Questionnaire)
2. Increase STEM achievement
    a. Increase the number of students scoring Proficient/Advanced on the MCAS in 5th and 8th grades by 20% by 2016;
    b. Increase the number of students scoring Proficient/Advanced on MCAS in 10th grade by 20% by 2016
    c. Reduce achievement gap by 25% between 2010-2014 and by another 25% between 2014-2016
    d. Reduce the number of students unable to pass the high school Science MCAS[2]
3. Increase the percentage of students who demonstrate college readiness for post-secondary STEM courses
    a. Mass Core completion (4 math; 3 lab science)
    b. Gender gap in course selection (SAT registration)
    c. STEM-course taking by underrepresented race/ethnic (SAT registration)
4. Increase college completion with degrees in STEM
    a. Increase the number of STEM degrees granted in public and private institutions by 50% between 2008 and 2016 (IPEDS)
5. Increase the number of STEM classes led by effective educators

[1] Governor Patrick's STEM Advisory Council website
[2] Boston is adding this goal