



May 29, 2014

Dear Colleagues and Friends,

Workers today are facing a changing job market. We are seeing growth in STEM (Science, Technology, Engineering and Math) fields as well as an increased demand for the innovation and critical thinking skills that are central to STEM disciplines. Ensuring that our students are STEM literate is not just an issue of education, but is also essential to the future of our economy. The Boston STEM Network, representing a cross-sector community of stakeholders, believes that providing quality opportunities for all students to pursue both education and careers in STEM should be a priority in our community. We believe it is important to collaboratively invest in improving STEM learning opportunities for our young people to prepare them for success in their post-secondary pursuits and careers.

“Assessing the State of STEM in Boston” serves as a guide for our local government, school district, educators, out-of-school time programs, philanthropy, and businesses in our community as they decide how to best allocate resources to support STEM learning. This report, written on behalf of the Boston STEM Network by the Boston Public Schools, the Boston Private Industry Council (PIC) and Boston After School & Beyond, provides a foundational understanding of Boston Public School student achievement and interest in STEM subjects and careers.

This report presents recent data showing student academic achievement and interest in STEM subjects at three different levels of education: elementary, middle, and high school. “Assessing the State of STEM in Boston” also describes system capacity to offer informal or out-of-school time STEM opportunities to Boston Public School students through partnerships with community-based, higher education, and industry providers. As the Boston STEM Network continues to support the advancement of students from school to career, we will use this report as a baseline to measure our progress. We hope that the findings and observations in this report will serve as a resource to inform decision-making regarding investment in STEM education.

Sincerely,

Neil Sullivan
Boston Private Industry Council
Boston STEM Network

Dr. Kamal Chavda
Boston Public Schools
Boston STEM Network

Christopher Smith
Boston After School & Beyond
Boston STEM Network

Peg Sprague
The United Way
Boston STEM Network



“Assessing the State of STEM in Boston” key findings and observations:

- In partnership with EdVestors, BPS launched the “Eight Grade Algebra Expansion” initiative to address the gaps in access and quality in eighth grade algebra in order to prepare more students for high school and college success
- The Boston PIC and Boston Public Schools partnered for the 13th consecutive year in 2012 to provide the Classroom at the Workplace program for 117 Boston high school students who previously failed English Language Arts, Mathematics and/or Science MCAS tests. By combining academic preparation with paid summer employment, students begin to view their education as a means to a viable career
- Student interest in math and science subject areas is high in younger grades (NAEP questionnaire 2011)
- Only 17% of Boston’s fifth graders scored Proficient or Advanced on the Science MCAS in 2012. This percentage decreased to 15% for eighth graders and increased to 46% for high school students in the same year
- In Summer 2012, the Boston PIC connected 122 technology-skilled high school students to a 7-week paid internship through the Tech Apprentice Program. Overall, 575 high school students were employed in a STEM-related summer internship in Summer 2012
- Of Boston students who graduate college with a degree in a STEM field (49.2% in 2012), a large percentage of them (26.2%) enter the Health Professions field where a small percentage enter into Biological Sciences, Engineering, or Mathematics and Statistics
- The Boston Summer Learning Project, launched by the Opportunity Agenda in 2010 and co-managed by Boston After School & Beyond and the Boston Public Schools, has served approximately 5,000 students from 50 Boston schools. The approach integrates academics, skill building, and enrichment through full-day programs over five weeks with 18 partner organizations. The initiative features a variety of community learning settings, from Thompson Island and Hale Reservation to MathPOWER (on the campus of Northeastern University) and the Boys & Girls Clubs
- There is limited capacity in Out-of-School time programs to serve younger students as well as limited STEM programming in the Grove Hall, Hyde Park and Mattapan neighborhoods