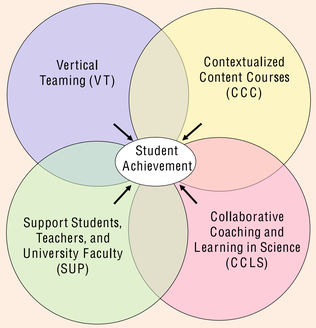
The Boston Science Partnership: A New Vision of Urban Education

Overview

Mission: The Boston Science Partnership (BSP) aims to improve science education in Boston from middle school through graduate school.

The BSP is changing the culture of science education in Boston. The BSP invests in human capital (its teachers, teacher leaders, higher education faculty) and social capital (evolving relationships, learning communities, partnerships). We are building a spirit of achievement, focusing the conversation on science education, and increasing knowledge about science instruction. Students are performing better, have access to advanced courses as never before, and are prepared for a future in science.

Strategic Framework



Dashboard

Award and Supplements

2004 - The Boston Science Partnership, a $12.5 million NSF Math Science Partnership grant, is launched.

2006 - NSF awarded a supplement ($712k) to add RCC and BHCC to the partnership and support a research study of the STEM pipeline in Boston

2008 - NSF awarded Noyce Fellowship supplements ($600k and $300k) to fund Science Education Fellowships (SEF)

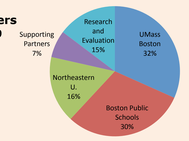
Four Core Strategies

- Contextualized Content Courses (CCC)
- Collaborative Coaching and Learning in Science (CCLS)
- Vertical Teaming (VT)
- Support for faculty & students, and the AP Science Support Program

Plus: Science Education Fellowship, research and evaluation.

BSP Funding Across Partners

Total: $14,111,619



Core Partners:

- UMass Boston,
- Northeastern University,
- Boston Public Schools

Supporting Partners

- The College Board
- Harvard Medical School
- Roxbury Community College (RCC)
- Bunker Hill Community College (BHCC)
- Education Development Center

Principal Investigators

- Robert F. Chen (PI, UMass Boston)
- Hannah Sevian (Original PI; On rotation at NSF)
- Christos Zahopoulos (Co-PI, Northeastern)
- Pamela Pelletier (Co-PI, Boston Public Schools)
- Arthur Eisenkraft (Co-PI, UMass Boston)

Evaluation

- PERG at Lesley University
- SageFox Associates Research
- Education Development Center, Inc.
- UMass Boston

Challenges

Biology Teacher Johanna Waldman with Principal Rachel Skerritt

I am so proud of my teachers! But they can't leave the building.

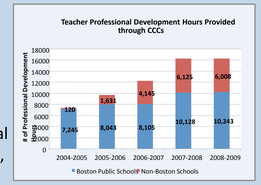
Year 1: Engaging Stakeholders

Once funded, our leadership team needed to engage local stakeholders: Teachers, principals, STEM faculty and other "friends" of the project. As we solidified our plans for programs, we wanted each group to be respected for their time and to make the most of their contributions.

What we did: We designed and adapted ways to involve each group: principals joined their teachers at workshops; faculty attended professional development events with informal, "hallway" follow-up; and external advisors were engaged in targeted work.

Year Two: Going Beyond "Early Adopters"

Our programs were launched and were finding success in the field. However, our challenge was to engage *all* Boston teachers, and we were attracting "early adopters," those who were excited about a new opportunity.



What we did: We gained a reputation for excellent professional development; therefore, teachers wanted to participate in the BSP. As well, we hit the streets, talking to teachers one-on-one, sent flyers and announcements via mail and email, talked to principals to identify staff who would find value in our programs

Physics teacher Steve Fernandez reports out

The BSP Leadership Team

Year Three: Risking Burn-out

As our successes were leveraged into additional projects, the principal investigators could not sustain the level of work on day-to-day operations.

What we did: We utilized the trust in distributed leadership to delegate responsibility, increase time efficiency and streamline decision processes. As well, we hired two full time staff to serve as Project Director and Associate Project Director.

BSP's Distributed Management

Role	Who & Responsibility
Strategy Lead	Lead PI for Activity
Development Team	Core staff and PIs who guide decisions for activity
Implementation Support Team	All partner personnel who work on activity

Year Four: Institutional Leadership Changes

By Year Four, four deans, two provosts, the school superintendent and assistant superintendent for curriculum and instruction were new to Boston. At the end of the year, a founding Co-PI moved out of state.

What we did: Change is constant. We worked to bring the new participants up to speed on the project. We found ways to help them take ownership of and credit for new aspects of the work. The new leaders have brought new ideas and fresh thinking to the challenges of science education.

I became Boston's Superintendant in 2008, and met with the Science Department in 2009.

Superintendent Carol Johnson with a middle school student and her teacher, Fernando Cleves, at the Boston Science Fair

Brandon Feingold and his AP Chemistry students at Summer Bridge.

Easy. Just write another grant!

Year Five: Sustainability

Sustaining $12.5M and five years worth of programs is impossible. However, making lasting changes to science education with such a large investment is a moral obligation. We needed to Identify those components that could live on.

What we did: We took advantage of opportunities for new grants and partnerships, continued to change the culture of the institutional partners to support science education, and adapted strategies to maximize cost effectiveness.

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