

**2014-2015 @Scale Year-End Report
STEM Pipeline Fund**
January 29, 2016

**Mass Insight Education
AP STEM and English Program**
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I. Basic Information

Mass Insight Education

AP STEM and English Program

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II. Goals & Objectives

Mass Insight Education's AP STEM and English Program focuses on three measurable goals in order to track the program impact on advancing the Massachusetts STEM plan goals:

- **Increase AP (Advanced Placement) participation.** The program leads to greater student participation in math, science and English AP courses.
- **Increase AP performance.** The program leads to more qualifying scores (scores of 3, 4, or 5) on AP examinations.
- **Increase college success.** The program increases the number of students matriculating to and graduating from college.

By implementing the program and measuring the outcomes to these goals, we are able to quantify:

1. Increased student interest in STEM areas.
2. Increased student achievement and preparing students for college success
3. Increase the percentage of skilled STEM educators
4. Increase the percent of students completing post-secondary degrees in STEM subjects.

Mass Insight Education's AP STEM and English Program currently operates in more than 70 schools across the state. Since the program began in 2008, **178% more students are participating in AP math, science and English courses and 160% more students have received qualifying scores on AP exams in these subject areas.** We have now begun to track students who have participated in the program into college, and the initial independent research shows that Mass Insight students are matriculating to college at a 79% rate, compared to 69% for other Massachusetts students. Seventy per cent of all Mass Insight graduates continue through the end of their second year college, compared with 60% of all Massachusetts graduates.

III. Implementation

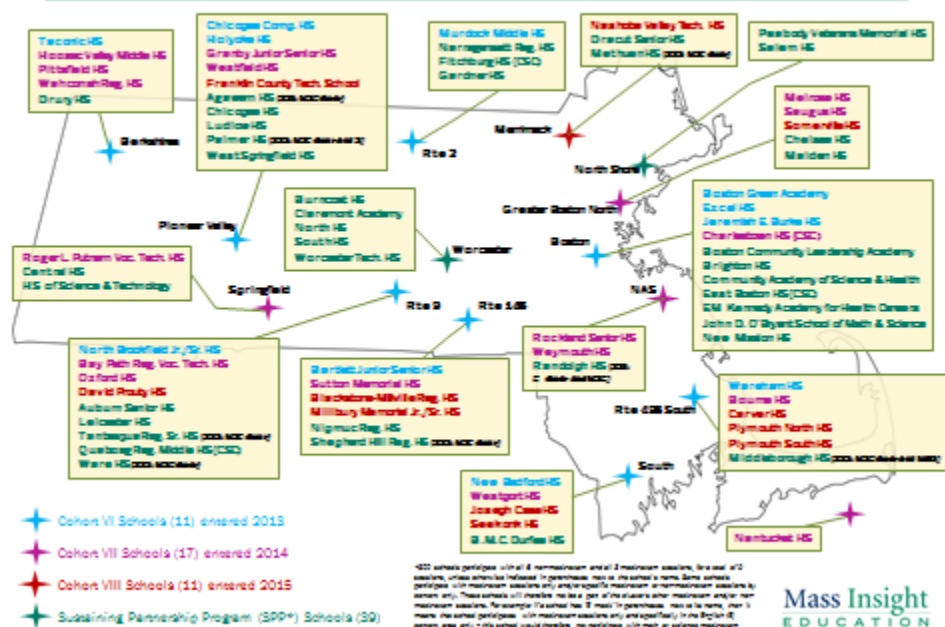
The STEM Pipeline Fund grant was used to help fund the first year of the program at Taconic High School, Pittsfield High School, Wahconah Regional High School, and Hoosac Valley Middle High School, which Mass Insight refers to as the "Berkshire cluster." The program was sustained by this year by Mass Insight Education with other public and private funds. Students will be taking AP exams in the spring, so the number of tests taken and exam results will not be available until July of 2016. However, we do have data detailing the success of the program over the last 2 school years and its impact on students and teachers. This information is contained in section V. Outputs, Outcomes and Evaluations.

While Mass Insight Education’s initial letter of agreement with Taconic, Pittsfield, Wahconah Regional, and Hoosac Valley is to implement the program for three years; our intent is to sustain the program beyond that time frame should funding be available.

IV. Scale

The maps below illustrate the scale of Mass Insight Education’s AP STEM and English Program. The participation of Drury and Lee in the program has directly led to other Berkshire area schools wishing to participate in the program. Taconic High School in Pittsfield entered in SY13-14 while Pittsfield High School, Hoosac Valley High School and Wahconah Regional High School all began the program in SY14-15. This scaling of our program in the Berkshires models our statewide scaling, where the success of the program has led to other area schools applying to participate. This has continued through SY15-16 and we anticipate expanding the program in SY16-17 as well.

MIE Program Clusters & Schools: 2015-2016



V. Outputs, Outcomes & Evaluation

Student interest: Mass Insight Education’s AP STEM and English Program introduces many more students to university level STEM courses while still in high school. We actively recruit students to increase enrollment and below are the increased enrollment numbers and AP course offerings for the Berkshire cluster. These numbers also include AP English courses, integrated into our program to support higher level academic skills such as literacy, communications and critical thinking.

Impact metrics:

- Enrollments in AP math, science, and English courses are our primary metric used to assess increases in participation in the program. We collect enrollment data continuously throughout the year and we additionally verify it by cross-checking it against a list of enrolled students. However, pre-program enrollment data is submitted by schools and may be less accurate than enrollment data received during the program. AP exams taken is a secondary source for assessing participation in AP. AP exams taken data is received from the College Board and consistent in program and pre-program years. Typically, enrollment data and

exams taken data are similar, however in cases where they differ widely it may be the enrollment data that is more variable.

- Qualifying scores (scores of 3, 4, or 5) on the AP exam are our primary metric for assessing increases in performance on the AP exam. We receive this data from the College Board, so it is highly reliable and consistent in program and pre-program years.

Pittsfield High School

- Exams taken have increased from SY13-14 to SY14-15 from 187 to 209 (+12%)
- Enrollments have experienced a 2 year decrease in enrollments of 81 in AP Math, Science and English (363 to 282)(-22%).
- While enrollments appear to have fallen, exams taken have increased and we cannot confirm the accuracy of enrollment prior to the beginning of the program (the enrollment for all program years is confirmed in the fall and updated throughout the year, while enrollment for pre-program years is provided by schools). Additionally, AP enrollment increased significantly in the one-year before the program began. In other schools, exams taken and enrollment track closely together, so this divergence at Pittsfield HS is anomalous and suggests that pre-program enrollment data may not be as accurate as enrollment data during the program.

Taconic High School

- A 3 Year Increase of 94 Enrollments in AP Math, Science and English (+72%)
 - A 3 Year Increase of 86 AP STEM course enrollments (+50%)
 - AP Mathematics
 - 3 Year Increase of 16 AP Mathematics enrollments (30 to 46) (+53%)
 - AP Science
 - 3 Year Increase of 19 AP Science enrollments (40 to 59) (+48%)
 - Physics 1 is +26 (0 to 26)
 - AP English
 - 3 Year Increase of 59 AP English enrollments (61 to 120) (+97%)

Wahconah Regional High School

- A 2 Year Increase of 75 Enrollments in AP Math, Science and English (+129%)
 - 2 Year Increase of 33 AP STEM course enrollments (+89%)
 - AP Mathematics
 - 2 Year Increase of 10 AP Mathematics enrollments (18 to 28) (+56%)
 - Added AP Statistics last year
 - AP Science
 - A 2 Year Increase of 23 AP Science enrollments (19 to 42) (+121%)
 - Added AP Physics last Year
 - AP English
 - 2 Year Increase of 42 AP English enrollments (21 to 63) (+200%)

Hoosac Valley Middle High School

- A 2 Year Increase of 21 Enrollments in AP Math, Science and English (+25%)
 - A 2 Year Increase of 15 AP STEM course enrollments (+37%)
 - AP Mathematics
 - 2 Year Increase of 1 AP Mathematics enrollments (17 to 18) (+6%)
 - AP Science
 - 2 Year Increase of 14 AP Science enrollments (24 to 38) (+58%)
 - Chemistry is +114% (7 to 15)

- AP English
 - 2 Year Increase of 6 AP English enrollments (42 to 48) (+14%)

We can also measure student interest and preparedness based upon attendance at Mass Insight Student Study Sessions (SSS). Mass Insight provides 18 hours more time on task for students, including a series of 6-hour regional Student Study Sessions on three Saturdays during the school year.

38% of Taconic, Pittsfield, Wahconah, and Hoosac Valley students enrolled in MIE classes attended the sessions over the last two years.

Student Achievement: The Berkshire Cluster had **331** qualifying scores in math, science and English in SY 2014-2015. That is up from 284 qualifying scores in SY2013-2014 and 219 qualifying scores in SY2012-2013 for a 2-year **increase of 51% (112 scores)**. As previously stated, the AP exams for the 2015-2016 school year will be administered in the spring. From SY 2012-2013 to SY 2014-2015 Taconic High School increased their number of qualifying scores in math, science, and English from **66 to 75**, while Pittsfield High School increased their same qualifying scores from **82 to 122**. Wahconah Regional High School increased their number of qualifying scores in math, science, and English from **51 to 86**, and Hoosac Valley Middle/High School increased their number of qualifying scores in math, science, and English from **20 to 37**.

These results show significant increases in student interest and achievement in STEM education for the Berkshire Cluster.

Skilled educators: Mass Insight Education's AP STEM and English Program has made an impact in the area of teacher support and training. The Program provides comprehensive teacher training which includes content-focused professional development. We provide up to 7 days of training per year for our AP teachers. At our 5-day training institute at Bridgewater State University held in the summer of 2014, 24 AP teachers from Taconic, Pittsfield, Wahconah, and Hoosac Valley attended. At the 2015 5-day AP Summer Institute at Bridgewater State University, 19 teachers again attended the training. All AP teachers have also met and have access to Mass Insight Education content directors, who are experienced former AP teachers with subject matter expertise. There has been additional training provided for our District Administrators and Lead Teachers. In addition, 28 AP teachers from these schools participated in our 2-day AP Workshop in the fall of 2014 as well as 21 in 2015.

VI. Budget and Plans for Sustainability

As stated in previous reports, Mass Insight Education has continued to conduct AP Kickoffs at 3 of the 4 high schools this fall. These events serve as an academic "pep rally" for AP students and outline the goals set for them in the upcoming academic year. These events also serve as an opportunity to increase the visibility of Mass Insight and STEM education. Please find attached copies of these presentations, which include much of the data incorporated in this report. We continue to work with Monica Joselin, Director of the Berkshire Regional STEM Network, who had a presence at the Kickoff events along with other community leaders. We also continue to promote the program through media outlets.

Mass Insight Education has been able to sustain the program through its private fundraising and advocacy for state budget funds. We raised between \$2-3 million in private funds to support the program. The Massachusetts Fiscal Year 2015 budget appropriated \$2.6 million for an AP STEM and English program, and we were selected as the sole vendor to manage this program. We continue to advocate for this appropriation to legislators and the administration along with our partner school districts.

Form 1a: Expenditure Worksheet

Please complete the expenditure worksheet below. In the first column, identify how you divided your grant among the identified expense categories. In the second column, list your expenditures to date. The third column will automatically populate with the difference (remaining balance). Make sure to sign and date this worksheet before submission and include any necessary explanations or comments in the "Comments Box".

Instructions: Double-Click on the table for it to become an interactive spreadsheet. Click outside the table to return to MS Word. ONLY FILL IN CELLS HIGHLIGHTED IN YELLOW: Non-Yellow cells contain formulas and will fill in automatically. Also, all cells are formatted for currency; you do not need to type in \$ signs.

Fringe Benefits			\$ -
Contractual Services			\$ -
Travel/Transporation			\$ -
Total Supplies & Materials:	\$ 8,920	\$ 8,920	\$ -
<i>Curriculum</i>			\$ -
<i>Equipment</i>	\$ 5,310	\$ 5,310	\$ -
<i>Student Exam Fees</i>	\$ 3,610	\$ 3,610	\$ -
Training	\$ 15,786	\$ 15,786	\$ -
Tuition & Stipends	\$ 6,952	\$ 6,952	\$ -
Evaluation	\$ 5,000	\$ 5,000	\$ -
Student Study Sessions	\$ 8,342	\$ 8,342	\$ -
Other (Identify)			\$ -
Indirect Costs (10% Max)	\$ 5,000	\$ 5,000	\$ -
Total	\$ 50,000	\$ 50,000	\$ -

Project Name/Organization: Mass Insight Education @ Scale

Project Manager: Deb Abbott **Date:** 1/29/16

Comments Box