

## **Brockton STEM Leadership Team**

Jonathan Shapiro,  
Brockton High  
School Science  
Department Head

Heather Ronan,  
Coordinator of Math  
& Science, K-5

Joan Farrington,  
Coordinator of Math  
& Science, 6-8

Karen Watkins-  
Watts, Grants  
Manager

Kimberly Kamborian,  
Program Manager,  
Gelfand Family  
Charitable Trust

## **Brockton Public Schools**

43 Crescent Street  
Brockton, MA 02302

*News and updates on Science, Technology, Engineering and Mathematics (STEM) education advancements and activities across the Brockton Public School District.*

## **GEMS Grant Enables District to Launch 4-Yr. STEM Implementation Plan**

The generosity of the Gelfand Family Charitable Trust (GFCT) through its GEMS grant funding has and continues to have a dramatic impact on STEM education in the Brockton Public Schools. GEMS stands for Gelfand Endeavor in MA Schools and is a collaboration between GFCT and the Massachusetts State Science and Engineering Fair (MSSEF). The positive results are due to a combination of funding and collaboration with GFCT. Kimberly Kamborian, GFCT Program Manager has provided insight, ideas, and recommendations including resources and connections to STEM focused organizations. These ideas and resources have been instrumental in transforming, deepening, and supporting STEM education in the district.

GFCT has been a key contributor, beginning with funding to build and equip two state-of-the-art science labs at South and Ashfield Middle Schools, which have allowed more authentic science experiences for students. They have continued their support through the GEMS Planning Grant,

MSSEF/GEMS Science Fair grants, and currently, the **4-year GEMS STEM Implementation grant**. This school year marks the second year of this grant which provides much-needed professional and curricular development, and supplies to grow STEM instruction and culture throughout the district. Teachers have attended workshops offered through the Massachusetts State Science and Engineering Fair (MSSEF) and professional development on inquiry based learning. The use of this powerful pedagogy continues to increase. As we move forward, progressive professional development will ensure its sustainability.

Science fair is the most visible example of authentic inquiry based learning. GFCT funding has provided Brockton's young scientists with much needed supplies to conduct independent investigations; as well as to hire science fair coordinators to organize all of the complexities of presenting and judging projects, facilitating entries, and preparing for the regional and state science

fairs. GFCT has enabled teacher leadership to supervise and guide students and provide classroom support for teachers. Thus, teachers are able to look to a colleague to assist in integrating science fair projects into the curriculum from both planning and implementation perspectives. As a result of this work, more students are presenting their projects at the regional fair. Last year, two high school students earned 2<sup>nd</sup> place at the state science fair; and at the middle school level, there was a 1st place and a 3rd place winner and two honorable mentions.

The district successfully implemented mandatory science blocks in Grades 3-5 last year and is expanding to include all elementary students this school year. With whole school participation, the quality of science instruction is improving. In addition, fifth grade teachers, district-wide, modeled the science fair process with their students.

With funding through GFCT, members of the K-12 STEM team collaborated to create a Science Fair Resource Guide for teachers. This guide provides teachers with resources to help students at all levels to successfully plan, conduct, report, and showcase science projects.

## **GEMS Grant Enables District to Launch 4-Yr. STEM Implementation Plan (continued)**



Science fair coordinators were hired at every elementary building to organize and assist teachers with the new and exciting venture.

district. Together, STEM educators from across the district have been able to develop guidelines, expectations and resources for science fairs at all schools.

organizations. We look forward to increasing the capacity of our departments through the education and training of greater numbers of working teams.



Feedback is positive and the district is growing this excitement by including 4th graders in the modeling of the science fair process. Also 5<sup>th</sup> graders have more opportunities for independence during the process.

This example of addressing inquiry-based learning from a systemic perspective is an example of the type of work that still needs great attention. Brockton educators have received training in Systems Thinking through Camp Snowball, guest presenters from the SolEd Partnership and other related

We are so grateful to be able to improve our instructional, curricular and assessment practices to provide greater opportunities for our students.

We are in the midst of a transformational shift in our approach to science education.

This systemic STEM work is a major factor in the progress of science education in the

We thank the Gelfand Family Charitable Trust which has been and continues to be instrumental in that transformational shift and the ultimate growth of our STEM culture in the Brockton school system.

