

Greater Southern Tier STEM Education

Preparing students for the 21st Century

SCIENCE | TECHNOLOGY | ENGINEERING | MATH



September 2012

The Summer of 2012 was “STEMtastic” by Mark D. Vaughn, Ph.D.

The summer of 2012 will undoubtedly be remembered for many things: the feats of the Fab 5 and Michael Phelps at the Summer Olympics, the sweltering heat that gripped much of the nation and perhaps even the conventions of the Democrats and Republicans. Through it all, though, a historic paradigm shift continued here in the Greater Southern Tier (GST) region. From Professional Development (PD) programs like the second installment of SEMI HTU and the sixth offering of the Summer Teachers Institute to the fifth annual Summer SciFair/Virtual Worlds experience and the second regional Summer of Innovation, more than 1,500 students and educators in the region got more “STEMified” this summer!

(Right) A group of approximately 50 superintendents and building and central office administrators joined the STEM Deployment Team Retreat on July 24 at Corning's Sullivan Park.



Helping to design, implement and support the summer's STEM activities was the Regional STEM Deployment Team. In an effort to enhance STEM programming as we enter Year 3 of the Regional STEM program (now with 12 of the 21 GST BOCES districts participating), the Deployment Team had its first-ever retreat on July 24. The event focused on team building, strategic planning and awareness

creation and enhancement. The retreat convened at Corning Incorporated's Sullivan Park. In addition to the 18 or so Deployment Team members on hand for the entire day, an additional two to three dozen administrators from 15 GST BOCES school districts attended in the afternoon.

The Deployment Team identified three critical priorities for Year 3 of the program: design and deployment of the Regional High School STEM Program, development and execution of a Comprehensive Sustainability Solution to ensure the program's effective continuation beyond Year 3, and development of a tool-box to offer clear instructional strategies for creating an environment of inquiry-based instruction.

To aid the awareness creation/enhancement portion

Continued on page 2



Some members of the Regional STEM Deployment Team include (clockwise): Jay Hillman (Horseheads), Nan Woodworth-Shaw (Watkins Glen), Geri Furterer (Campbell-Savona), Mary Ordway (Bradford), Kelly Houck (Canaseraga), Don Keddell (Wings of Eagles Discovery Center) and Brande Flaitz and Jeremy Wheeler (GST BOCES).

In this issue...

Page 2

New Interactive STEM Website Online

Page 3

STEM Team Welcomes Three Curriculum Mentors

Page 4

Summer of Innovation 2012 Extends Learning

Syracuse Evaluators Give MST High Marks

STEM Teachers Build Underwater ROVs

(Right) Corning Senior Vice President Don McCabe addresses the building and central office administrators at Corning Incorporated.

Summer of 2012, continued



of the retreat, building and central office administrators from every district in the region were invited to a networking luncheon and then to participate in a PD session aimed at introducing them to the Full Option Science System (FOSS). To start the afternoon off, the group was welcomed by Corning Senior Vice President

Don McCabe, who stressed the importance of the STEM program to the talent pipeline here in the Southern Tier and the impact the program has had across the Empire State and beyond.

New York State Commissioner of Education Dr. John B. King, Jr. was also on hand for the session and in his address to the group concurred with McCabe and shared that our program was a real benchmark for college and career readiness endeavors. After giving his remarks, the Commissioner rolled up his sleeves and participated in the PD session facilitated by GST BOCES Staff Coordinator Jeremy Wheeler and STEM Curriculum Mentor Brandy Flaitz.

The Deployment Team retreat is just one of the many exciting STEM activities that have been underway since the second quarter. In this, the third quarter edition of the GST region's STEM Newsletter for 2012, you'll be introduced to our new STEM curriculum mentors, as well as our new regional STEM website. Also included is a report on this summer's Remotely Operated Vehicle (ROV) PD session, the latest update from our team of evaluators from Syracuse University and news on Summer of Innovation activities.

Enjoy!



(Right) New York State Commissioner of Education Dr. John B. King, Jr. addresses retreat attendees.

New Interactive STEM Website Online

Check out the new interactive STEM website at www.gstboces.org/stem for all of the latest information on STEM. The site includes information on the mission and vision of STEM education in the region, as well as program information, teacher resources and past STEM newsletters. The site also includes information about all of our participating districts and contact information for our STEM staff, as well as teacher comments and students in action.

STEM Team Welcomes Three Curriculum Mentors

Deidre Burchett originates from Chicago, IL and moved to the Corning area after graduating with a BS in Industrial Engineering from Northern Illinois University.

After three years with Corning, Inc., she pursued a MS in Education at Elmira College. Upon graduating in 2005, Deidre joined the teaching staff in the Elmira City School District. During her tenure in Elmira, she taught grades 2, 3 and 4, including a grade 3 to 4 loop. While teaching in Elmira, Deidre was a member of her building's leadership team for several years, served on numerous committees and designed Positive Behavioral Intervention and Supports (PBIS) focused posters for adherence to school rules.

Deidre also volunteers in her community. She has been on mission trips to serve people in other nations, helped design a summer camp to boost student performance in reading, vocabulary and math, and led many groups of adults to accomplish various goals.



Deidre Burchett



Bill Giancoli

Bill Giancoli is certified as a Generalist in grades 1-9 and considers himself a jack-of-all educational trades. He began his career in Wakefield, MA, where he taught hearing impaired children for Project Bridge Inc. This experience led to a sixth-grade classroom teacher position, which Bill held for five years. After receiving his Masters degree, Bill designed and implemented a Communications class in the middle school where he taught. The class incorporated project-based learning strategies to help students improve problem solving and critical thinking skills.

After more than 10 years living in and around Boston, Bill decided to move back to his hometown of Horseheads. In New York, Bill took a position with Holy Family Catholic Schools as the computer teacher and educational technology coordinator. This position helped prepare Bill for an instructional support specialist position at GST BOCES. Bill is happy to be joining the STEM team, and feels his creative nature and tech skills will make him a valuable resource.

Paul Spara worked as a research and development chemist in the pharmaceutical and photographic industries for 18 years with Sterling Drug Inc. and the Eastman Kodak Company. During that time, he was the inventor on 17 granted US Patents and presented his work at several conferences. This experience has complemented his teaching. He taught Regents Biology at Holy Angels Academy in Buffalo, Introduction to Forensics, Chemistry for the Health Professions, General and Organic chemistry lab at SUNY Brockport and inquiry-based FOSS Weather and Water, Chemical Interactions, and Force and Motion at Corning Free Academy.

Paul's degrees include a dual BA and BS in Chemistry and Biology from D'Youville College, MS in Chemistry from Dartmouth College and MS in Education from SUNY Albany.

The combination of his training and work experiences give Paul a unique appreciation for classroom preparation and workforce expectations for students. He is excited about partnering with teachers within the GST BOCES region who are implementing the STEM curriculum and its engaging teaching methods in their classrooms.



Paul Spara

Summer of Innovation 2012 Extends Learning



Exciting opportunities for learning and exploration were offered to students during the Summer of Innovation 2012. This year's partnering organizations included GST BOCES CTE and SciFair programs, the Wings of Eagles Discovery Center, 21st Century Grant Program, The Science and Discovery Center and Tanglewood Nature Center and Museum.

The goal of SOI is to extend the traditional school year into a third summer semester and provide students with opportunities to expand STEM-related skills.

Enrollment across the partnering programs totaled 1,178 participants. Plans are underway to expand the offerings for next summer.

(Right) A student in the Rocketry program at the Wings of Eagles Discovery Center gets ready to launch the rocket he built.

Syracuse Evaluators Give MST High Marks

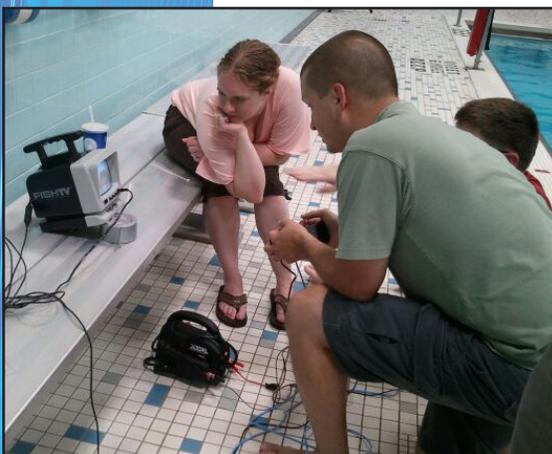
Scott Shablak and Mary Welker of the Office of Professional Research and Development at Syracuse University have served as the evaluators for the regional MST Connect initiative for the past year. Their primary areas of study have included two of the original pillars: FOSS science instruction and the Summer of Innovation (SOI) offerings.

The FOSS study revealed high levels of teacher competence and confidence as a result of the training and support system. The quality was maintained when the program expanded the number of trainers to meet the growing need. Overall student reaction to the FOSS program was highly positive at all grade levels and at each target district.

As the SOI program moved into its second year, a greater emphasis was placed on links to the STEM mission of the MST Connect. Students, parents and teachers gave generally favorable marks to the quality of the courses and the focus on active engagement.

The evaluators also maintained a focus on issues of scale-up, regional databases of achievement, attitude and behavior, and most recently, three initiatives resulting from the annual Deployment Team Retreat.

STEM Teachers Build Underwater ROVs



Teachers maneuver their ROV by viewing a screen connected to an underwater camera on the ROV.

On July 2-3, approximately 16 regional STEM educators worked together in teams to design and pilot their own remotely operated vehicle (ROV). These teachers participated in the two-day STEM training to gain first-hand experience with an integrated STEM module that was developed by the Marine Advanced Technology Center (MATE) (www.marinetech.org) and the Shedd Aquarium (www.sheddaquarium.org). Each team used the engineering design process (EDP) and science content knowledge gained from inquiry-based science investigations to create an underwater ROV to pilot in a competition at a local pool. The teachers will take the experience they've gained back to the classroom when they teach the module to their students. Please visit www.gstboces.org/stem to view a short video of the training.

