

WHO'S WHO IN STANYS SUFFOLK SECTION LEADERSHIP

The following people can provide information on membership, teacher workshops and other activities. The Subject Area Representatives (SARs) can provide current information on NY State Education Department Core Curricula and testing programs.

◆ Indicates individuals who serve in more than one capacity and for whom contact information is listed only once.

Chairperson

Glen Cochrane
(STANYS President)
gblink735@gmail.com

College SAR

Linda Padwa
Stony Brook University
Linda.Padwa@stonybrook.edu

Special Education SAR

Jean Ann Crespo (Kohn)
Walter G. O'Connell Copiague HS
JCrespo@copiague.net

Vice Chairperson - Programs

Matthew Christiansen, EdD
Islip School District
islipchem@gmail.com

Earth Science SAR

Melissa Torre
Division Avenue HS
Mtorre@levittownschools.com

Awards Dinner Co-Chairpersons

Maria Brown
Sayville HS
zostera2@gmail.com

Vice Chairperson - Membership

Sheilah Schumann
sheilah_s@yahoo.com

Elementary SAR

Marijean Scardapane
South Huntington School District
mcardapane@shufsd.org

Brian Vorwald
BVorw@aol.com

Secretary/Newsletter Editor

Gary R. Vorwald
Paul J. Gelinis JHS
gary.vorwald@gmail.com

Environmental Science SAR

Sonja Anderson
Sayville High School
andersonapes@gmail.com

Spring Conference Chair

Joe Malave
Montauk School District
jmalave@montaukschool.org

Treasurer

Angela Cigna-Lukaszewski
AngLuke@aol.com

Middle Level SAR

Ashley Bloch
Islip Middle School
abloch01@gmail.com

Health & Welfare

June Dawson

STANYS Directors

Ashley Bloch ◆
Angela Lukaszewski ◆
Gary Vorwald ◆

Informal Education

Alice Veyvoda
alveyvoda@optonline.net

Biology SAR

David Knuffke
Deer Park High School
misterknuffke@gmail.com

Physics SAR

Jaime Rogers
Walt Whitman High School
jaimerogersjr@gmail.com

Public Relations/Archives

Sheilah Schumann ◆

Chemistry SAR

James Ripka, PhD
Division Avenue HS
RIPKA@aol.com

Retiree SAR

Ed McDaniels
edmcdaniels@hotmail.com

Science Congress Liason

Angela Lukaszewski ◆

Web Master

Matthew Christiansen, EdD ◆



Chairperson's Corner (continued from page 1)

this shift. Work with other teachers to share and refine lessons that address 3D and align with what is currently required. I know there are teachers that have moved to a student directed learning environ-

"we are up for a major shift to standards based classrooms. It means a shift to three dimensional (3D) activities that incorporate science and engineering practices, disciplinary content, and cross cutting concepts. Moving away from activities that confirm content taught to activities where students construct understandings by engaging in science and engineering practices."

ment so look at those learning opportunities to align them with the 3D experience.

For the elementary classroom, the change is big. NYSSLS has elementary standards banded by grade level. K-2, 3-5, middle, and high school progressions mean the teaching and learning develops in all aspects of the standards. All students are supposed to experience science in a way that increases in complexity as they move through the grades so the elementary experience is critical for the foundation need-

ed for secondary classes.

The National Science Teachers Association (NSTA) has been a significant player in the move to new science standards. Their website has an incredible number of resources, activities, webinars, books, and opportunities for professional learning. A STANYS landing page has been established on the NSTA Learning Center for your use.

Feel free to log on and explore the Learning Center: <http://learningcenter.nsta.org/stanys>

promo code is **stanys**

Another NSTA resource is the NGSS Hub: <http://ngss.nsta.org/>

The Regents item presenting the NYSSLS in June:

<https://www.regents.nysed.gov/common/regents/files/616p12d3.pdf>

Link to the page with the new NYSSLS:

<http://www.p12.nysed.gov/ciai/mst/sci/nysls.html>



Suffolk STANYS Board: Gary Vorwald, Angela Lukaszewski, James Ripka, Alice Veyvoda, June Dawson, Joe Malave, Glen Cochrane, Matthew Christiansen, Ashley Bloch, Jean Ann Crespo, Maria Brown, and Brian Vorwald [missing from photo: Sheilah Schumann, David Knuffke, Melissa Torre, Marijean Scardapane, Sonia Anderson, Jaime Rogers Sr Jane Fritz, and Ed McDaniels]

Outstanding High School Seniors and Teachers of the Year Recognized at the 2015-16 Awards Dinner

Brian Vorwald, Awards Co-Chair

Each year the STANYS Suffolk Section invites high schools that are patrons of the *STANYS Suffolk Section District Member Services Program* to select an outstanding science student in their graduating class to be recognized at our Annual Awards dinner in May. The students are introduced and presented with their award by a science teacher of their choice and both are guests of the Suffolk section. Last year 29 high schools recognized their outstanding seniors at the dinner which was held on May 18th at Villa Lombardi's in Holbrook. It's always the highlight of our year to hear their proud teachers describe the outstanding achievements of these talented young people. Each student was presented with a plaque from the STANYS Suffolk Section commemorating their award. The list of these students and the teachers invited to present them is shown below. The STANYS Suffolk Section applauds these amazing students and wishes them well as they embark on their next adventure, their higher education.

High School	Student	Teacher
Bay Shore High School	Aleeza Shakeel	Erin Garland
Bayport-Blue Point High School	John Bachek	Nikki Restivo
Brentwood Ross Center	Lisbette Hernandez	Susan Campbell
Brentwood Sonderling Center	Oindrila Naha	Susan Campbell
Commack High School	Vincent Pennetti	Daniel Kramer
Connetquot High School	Julia Abbondanza	Erica Dosch
Deer Park High School	Kathryn Block	David Knuffke
Half Hollow Hills High School East	Bailey Kaston	Patricia Schmitt
Half Hollow Hills High School West	Connie He	Linda Davidson
Harborfields High School	Abigail Wax	Rory Manning
Hauppauge High School	Reah Vasilakopoulos	Jocelyn Handley-Pendleton
Huntington High School	Elisa Medina-Jaudes	Deborah Beck
Islip High School	Brian Lithen	Matthew Christianson
Mattituck High School	Dylan Marlborough	Janine Ruland
Mount Sinai High School	Alexander Mule	James DiNapoli
North Babylon High School	Alonzo Tabada	Annette Kuruc
Northport-East Northport High School	Jessica Conforti	Bryan Horan
Sachem High School East	Chandana Rajesh	Stephen Wefer
Sachem High School North	Emily Lin	Dr. Michael Vaccariello
Sayville High School	Jack Novak	Maria Brown
Shoreham-Wading River	Nicholas S. Maritato	Sherry Neff
Smithtown High School East	Emily McDermott	Maria Zeitlin
Ward Melville High School	Coco Wander	Jennifer Serigano
West Islip High School	Hannah Kim	Mary Kroll
William Floyd High School	Shannon Beattie	Victoria D'Ambrosio

The table below lists the Outstanding Senior Science Students who were unable to attend the Awards Dinner. The STANYS Suffolk Section congratulates them on their outstanding achievements.

High School	Student
Bridgehampton	Harriet DeGroot
Earle L. Vandermeulen High School	Eric Kilgore
East Islip High School	William Reed
Elwood John H. Glenn High School	Zachary Wollman
Westhampton Beach High School	Malini Mehta



Suffolk STANYS Teacher Awards Program

Each year at the dinner, teachers are recognized for their dedication and service as science educators. Awards for 2015-2016 were given for *Elementary School Level Science Teacher of the Year*, *Middle School Level Science Teacher of the Year*, and *High School Level Science Teacher of the Year*. Additionally, STANYS Suffolk Section's Executive Committee presented an award for service to the Suffolk STANYS section. Each of these most deserving individuals has performed meritorious service to science education. They've been recognized as outstanding teachers who help students and other teachers both inside and outside the classroom. The award recipients received their awards before family, friends and colleagues and their principals and superintendents were invited to the dinner as the guests of STANYS Suffolk Section. We once again congratulate each of these awardees and sincerely thank them for their contributions to science education.



Elementary School Level Science Teacher of the Year

**Theresa Palermo - Frank P. Long Intermediate School,
South Country Central School District**

Theresa Palermo is a special education teacher at Frank P. Long Intermediate School in the South Country Central School District. She is the 4th grade inclusion setting lead teacher for science and mathematics. Theresa's students explore, observe, engage, analyze and record during a unit while they also gain necessary information from their textbooks, lectures when necessary, as well as utilizing interactive notebooks, and worksheets. A hallmark of Ms. Palermo's teaching strategies is concluding each unit with a celebration of science. She transforms her classroom into a magical place at the end of a unit and students spend an entire day exploring how that "place" utilizes the concepts they've learned. For example, "Star Wars Zone" at the end of the unit on force and motion facilitated students experimenting with various forms of force and motion throughout the day and on the "Pirate Ship" students learned how simple machines are used aboard their ships as they rotate through the classroom performing activities reinforcing the skills they learned through hands-on labs.

Ms. Palermo's participation in the Aims Center for Math and Science, Brookhaven National Lab's Summer Institutes, and other summer programs have contributed to her developing a love of science and for developing the pedagogy she employs teaching her students. Her enthusiasm has created such a positive and fun learning atmosphere, that according to her colleague Patricia Gallina, "...every year Science becomes our students' favorite subject. They cheer when we begin a new unit and they try to predict what will be waiting for them when they walk in at the end."

(Continued on page 6)

(Continued from page 5)

Superintendent of Schools Dr. Joseph Giani wrote in his letter of support, "What I admire most and sets Ms. Palermo apart from other teachers is her interpersonal skills, which have enabled her to work successfully with some of our most challenging students." He further stated that, "...her patience and ingenuity combine with her unwavering commitment to improve the life of every student makes her an inspirational role model for everyone, and *this* is the best kind of teacher."

Middle School Level Science Teacher of the Year

Lynn Larsen - Beach Street Middle School, West Islip Public Schools

Lynn Larsen teaches 8th grade Physical Science and 8th grade Earth science at West Islip's Beach Street Middle School. Mrs. Larsen's approach to teaching science embraces making science engaging, interesting, and fun for students. She uses "story-telling," challenging inquiry-based labs and activities to achieve these goals and to make science relevant. Her use of labs as introduction material rather than as culminating activities facilitates her students to develop greater understandings and their ability to think critically.

Lynn works closely with her colleagues by sharing ideas and materials and mentors new teachers to the profession. She has worked with the school's Site-Based Team to create a Career Lunch and coordinates the program which has parents and other community members volunteering to share their professional journeys to successful careers during student lunch periods.

Other activities in which Lynn has been involved have included being a member of the Curriculum Council, Dignity for All Students Act committee, and Science Olympiad Head Coach. Lynn established the district's first Middle School Science Olympiad Team and the program has grown so that the Middle School now has two teams.

Superintendent of Schools Bernadette M. Burns stated that, "Mrs. Larsen exemplifies the STANYS mission, providing opportunities for all students to participate and learn science...and is actively involved in the life of her middle school learning community." In his letter of support, principal Andrew O'Farrell wrote that, "Mrs. Larsen is essential to the fabric of Beach Street Middle School." He concluded with, "You will not find a better practitioner-educator!"

High School Level Science Teacher of the Year

Jaime Rogers - Walt Whitman High School, South Huntington Public Schools

Jaime Rogers teaches physics (regents and honors) and robotics at Walt Whitman High School. In previous years his teaching assignment has included regents and honors chemistry along with 8th grade physical science and 7th grade Life Science.

In all courses Mr. Rogers teaches, he engages his students in hands-on activities and demonstrations that teach his students to learn critically. He requires that students demonstrate that they fully comprehend the subject matter by explaining it in their own words.

Jaime brings many real life examples into his curricula as a result of his varied experiences from outside the classroom. He draws upon his work in the Fire/EMS service to show how it relates to science principles and has gained valuable insights from his work as a respiratory therapist, pulmonary function technologist, and perinatal/pediatric respiratory specialist.

Outside of the classroom, Jaime has been involved in many school-wide activities. These have included starting a VEX robotics team and serving as the coach, writing curricula, coordinating and engineering awareness day at the Walt Whitman Mall, and organizing several fundraisers which have included support for needy families in the district, and the Wounded Warrior Project.

Mr. Rogers has supported teachers within and outside of Walt Whitman High School through a variety of activities. He has presented at the STANYS Annual Conference, the NY State Master Teacher program meeting at

(Continued from page 6)

Cortland, the Farmingdale STEAM conference, and Walt Whitman HS STEM Fair. Jaime has mentored new teachers and has supported student teachers as a cooperating teacher.

As a testament to his teaching skills, Jaime is a New York State Master Teacher. Science chair Marcus Maddy commented that, "Jaime's creative ideas and endless energy is a positive force in the school..." and that, "...with clear, concise explanations Jamie breaks down complex instruction for the multi-levels represented in his class." John Murphy, Walt Whitman HS principal, commented that Jaime's "...determination in achieving his goals and improving the education of students he serves is only matched by his ambition to improve the quality of life of those around him..." and that, "...Jaime would be an asset to any program that would give him the opportunity."



Now the Suffolk STANYS section will be the beneficiary of Jaime's talents as he assumes a new role as the section's Subject Area Representative for Physics. Thank you Jaime!

STANYS Suffolk Section Service Award

Jean Ann Crespo - Walter G. O'Connell Copiague High School

Jean Ann Crespo is a special education teacher who specializes in science. Since she began serving as the STANYS Suffolk section's Special Education Science Liaison, her energy and professionalism have spearheaded new initiatives and significantly contributed to the success of section programs. During the last school year, Jean worked with a team to redesign a dying Materials Exhibit into the Fall SciTech 2015 conference which was a huge success. She is known for our Section Tee Shirts, give-a-ways, and the "un-conference." When something needs to be done, Jean is one of the folks who can be depended upon to accomplish the task. She always enthusiastically fills in behind the scenes of an event to ensure things go off without a hitch.

Jean's service to STANYS goes beyond the Suffolk Section. She proposed including science teachers with a focus on Special Ed and English Language Learners to be represented at the state level of STANYS. Thanks to this initiative, the STANYS Board of Directors approved the creation of a new Director at Large position. Jean is now the STANYS DAL for Special Ed and ELL and she has a team of section representatives (SAR's) around the state. Their role of offering guidance and support to traditional science teachers will help STANYS to better serve all of our science students. As a result of Jean's efforts, special education teachers who teach science will most certainly benefit from their relationship with STANYS.

The Suffolk section's executive committee thanks Jean for her enthusiasm and tireless efforts in helping to make the Suffolk section the largest and one of the most active STANYS sections.

Jean Ann Crespo (2nd from right) with SciTech Planning Committee: Ashley Bloch, Matt Christiansen, and Sonja Anderson.



Suffolk Section WELL Represented in STANYS Leadership

Sheilah Schumann, Vice Chairperson Membership

The Suffolk Section is privileged to have nine members making substantial impact on STANYS state leadership this year! We are grateful for the notable efforts they provide here for us on Long Island in addition to the countless hours freely given of their time and talent at the state level. These dedicated individuals are keeping our membership in Suffolk Section thoroughly represented at the state level.

Glen Cochrane –President of STANYS; NYS Council of Education Associations Liaison; State Ed Liaison. Glen is a recently retired HS Biology teacher from the Half Hollow Hills school district and current STANYS President. At the local level, Glen admirably serves as the Regional Coordinator for the Long Island Science Olympiad competition and will continue to serve as the Suffolk Section's Chairperson for a sixth consecutive year.

Brian Vorwald – Finance Committee Chairperson; State Conference Treasurer; Constitution Committee; Fellows Committee; Finance Committee; Funding Initiative Committee; Newsletter Committee; STANYS Past President; STANYS Fellows Award Recipient (1992). Brian is a retired HS Earth Science Teacher and Science Department Chairperson from Sayville Public Schools and is currently an Adjunct Professor at Suffolk Community College. At the local level, Brian nobly serves as Co-Chairperson of the Suffolk Section's Annual Awards Dinner.

Alice Veyvoda – Newsletter Editor; Newsletter Committee Chair; State Conference Assistant Exhibits Chairperson; Constitution Committee; Policy Committee; STANYS Past President; STANYS Fellows Award Recipient (1984). Alice is a retired HS Chemistry teacher from the Half Hollow Hills district and an avid world traveler. When she isn't overseas, Alice amiably oversees Suffolk Section's correspondence and Informal Education.

Angela Lukaszewski – Suffolk Section Director At Large; State Conference Exhibits Chairperson; Finance Committee; Science Congress; STANYS Past President; STANYS Fellows Award Recipient (1996). Angela is a retired HS Physics and research teacher from the Syosset district and is currently an Adjunct Professor at Hofstra University. At the local level, Angela conscientiously serves as the Suffolk Section's Treasurer.

Gary Vorwald – Suffolk Section Director At Large; Fellows Committee; STANYS Fellows Award Recipient (2016). Gary is an Earth Science teacher and Science Department Chairperson in the Three Village school district. Gary, a Long Island Region Master Teacher, is locally known as a multi-award winning Science Olympiad Coach and graciously serves the Suffolk Section as Secretary and exceptional Newsletter Editor.

Ashley Bloch – Suffolk Section Director At Large; Informal Education Committee. Ashley is an Earth Science and Intermediate Science teacher at Islip Middle School, as well as a Long Island Region Master Teacher. Locally, Ashley serves as our Intermediate Science Subject Area Representative, and a prominent Conference Committee member.

Dr. Matthew Christiansen – Chemistry Director At Large. Matthew is the Science and Business Chairperson of Islip Schools, as well as an Adjunct Chemistry Professor at Suffolk Community College. On the local level, Matthew diligently serves as Suffolk Section's Vice President for Programs and Webmaster. In his role as VP for Programs, he is integrally involved in planning and coordinating our Fall and Spring Conference.

Sonja Anderson – Environmental Science Director At Large. Sonja is a HS science teacher for the Sayville school district, as well as a Long Island Region Master Teacher. At the local level, Sonja serves our Suffolk Section as Environmental Science Subject Area Representative and is a highly valued Conference Committee member.

Jean Ann Crespo (Kohn) – Special Education/ELL Director At Large. Jean Ann is Special Education teacher at Walter G. O'Connell Copiague High School. Locally, Jean Ann serves Suffolk Section as our Special Education/ELL Subject Area Representative (a position she founded and established at the state level), and is a vital member of our STEAM Conference Committee.



2016 Spring into STEM with Science Conference Report

Joe Malave, Conference Chairperson

The **2016 Spring into STEM with Science Conference** was again held at the premier science research facility of Long Island, Brookhaven National Lab (BNL) last April. Thanks to all of the presenters who offered workshops, as well as all who worked in the background to plan and make this conference such a success. A special thanks to the Suffolk STANYS board, the Office of Educational Programming at Brookhaven National Lab (in particular Mel Morris), and Eastern Suffolk BOCES.

The event was very well attended, with approximately 200 participants, including presenters, vendors, and teachers. A number of nonprofit groups provided displays and information in the lobby. These included the Open Space Stewardship Program, Custer Institute, BNL Office of Education, NYS Department of Environmental Conservation, Peconic Estuary Program, Cornell Cooperative, the US Fish & Wild Life Service, Malloy College, and finally the Environmental Systems Research group.

John Carter, Communications Director of the U.S. Department of Energy (DOE) Brookhaven Site Office, opened the conference with an introduction to the DOE's partnership with BNL. Our keynote speaker was Dr. Timothy Glotch, Associate Professor in the Stony Brook University's Department of Geosciences. Following the keynote address by Dr. Glotch, Past STANYS President Brian Vorwald provided an update on the draft of New York State's version of NGSS, the New York State Science Learning Standards (NYSSLS).

Dr. Glotch is the principal investigator of the Remote, In Situ, and Synchrotron Studies for Science and Exploration (RIS4E) node of NASA's Solar System Exploration Research Virtual Institute (SSERVI). The topic of his presentation was the use of instruments on board NASA robots and orbital satellites to measure vibrational frequencies of minerals formed by water. This is of great interest because water is the basis of life on Earth is projected to be the basis of life on remote planets.

The conference offered a diversity of STEM, research, and educational programming which focused on the draft of the New York State Science Learning Standards (NYSSLS). Workshops were also offered on current middle school science, all four main high school science disciplines, and on advanced placement courses. Other workshops focused on teacher pedagogy and on teaching science to Special Education and ESL students .

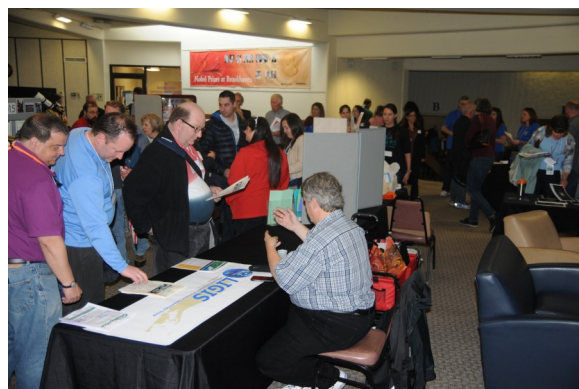
The Office of Educational Programming at Brookhaven Lab offered various workshops which connected important and ongoing research at BNL, Big Data, and Nanotechnology. In addition, BNL offered field trips to visit the new National Synchrotron Light Beam Source (NSLS-2), the Relativistic Heavy Ion Collider (RHIC), the Solar Panel test array, and other outstanding science research centers depending on the trip.

Our conferences would not be possible without passionate teachers willing to donate their time to prepare ongoing workshops in our fall and spring programs. I want to thank everyone that presented a workshop this year. Without these dedicated science educators, a conference that motivates, educates and inspires our Suffolk science teachers would not be possible.

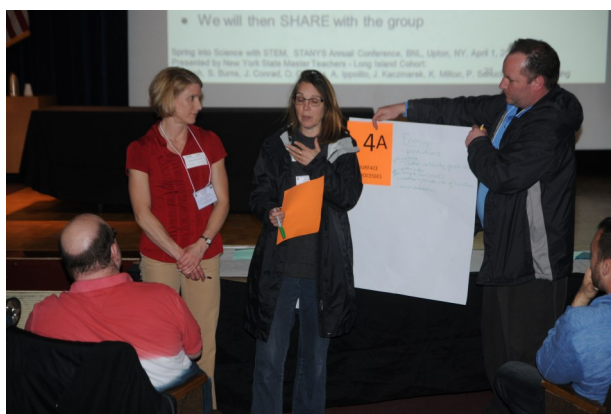
Finally, I want to thank all of you who attended the conference and who have helped Suffolk STANYS to be a very active science teacher's organization. Please share news of Suffolk STANYS conferences with your colleagues. Enjoy the new teaching year, and I hope to see you at our next conference!

Dr. Glotch gave the keynote presentation on Exploring Mars at the Spring Conference





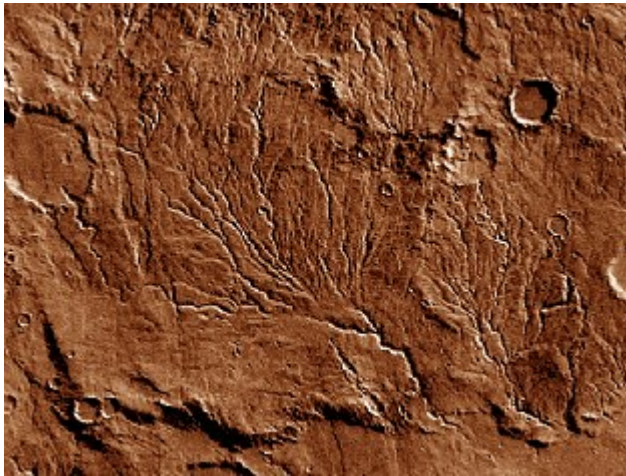
2016 Spring into STEM with Science Conference



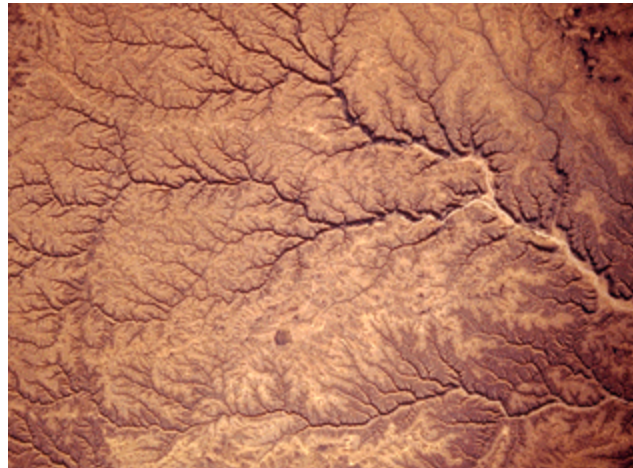
Photography by Gary Vorwald

Spring into STEM Conference, Mars Science, NGSS & NYSSLS

Joe Malave



Mars (42° S, 92°W)



South Yemen, Earth

Now, I know what some of you are thinking, how does Mars Science connect to my classroom, or the conference workshops? To some, the type of science or the overwhelming thought of incorporating new science standards into their instructional practices was still vague at the end of the spring conference, and unconnected to their work. I will explain my thoughts on how the conference theme, NGSS or the *New York State Science Learning Standards* resonated into the workshops.

Remote sensing of planets involves modern technology, robotics, computing, mathematics, and science. I like to apply the 'Big Picture' of current science at the cutting edge of research to classroom activities. The central conference theme on Mars exploration is an example of using a big picture theme to apply NGSS standards and performance expectations to your teaching. Our workshops tackled various aspects of NGSS throughout the conference in all subject areas. To elaborate on the conference theme, I will also incorporate NGSS to show what we had in mind in designing this conference.

Quoting from the *Next Generation Science Standards* dimension 1; "*The practices describe behaviors that scientists engage in as they investigate and build models and theories about the natural world and the key set of engineering practices that engineers use as they design and build models and systems.*" We as science teachers need to design lessons that use *big picture* research questions to create scaled down lessons that fit your curriculum. Get students to own their school work by engaging them in building models or doing investigations around a motivational big picture theme. Using this method not only is inspiring for all involved, but models actual scientific research. Clearly there are limitations, time being the biggest factor, but connecting to student interest to scientific research, matches NGSS Dimension 1, which in turn develops a deeper understanding. Students should be challenged by connecting big picture questions to their lessons, experiments, or research. NGSS challenges students to use new knowledge for scientific inquiry, and to relate cross cutting concepts and core ideas throughout the K-12 science spectrum. In the conference, this was discussed at multiple teaching disciplines.

NYSSLS (New York version of NGSS) has framework standards for each grade level or course which is very similar to NGSS. It is up to you or your science department to insert curriculum to match the NYSSLS core standards. (*Please be aware that NYSSLS has not been signed into law yet, but once it is, professional development will follow its proposed 5 year roll out*). It's not too early to look at your current curriculum and decide how to prepare for the new standards, and perhaps begin teaching within the new framework. Some of us teach this way already. I think the biggest challenges will come at the elementary levels, as the set of unified NYSSLS standards are engaged, and these teachers will need the most support. High School science leaders need to be aware of this, and be willing to work with elementary teachers as NYSSLS is rolled out.



Dr. Timothy Glotch

Dimension 2 of NGSS is as quoted “*Patterns, Similarity, and Diversity; Cause and Effect; Scale, Proportion and Quantity; Systems and System models; Energy and Matter; Structure and Function; Stability and Change.*” The study of Mars (for example) involves comparing patterns and systems (or any of the above) in Earth systems to Mars systems. This can be in any of the spheres of Earth: Biosphere, Geosphere, Hydrosphere, Cryosphere, and Atmosphere. If you're a physics teacher, it would be easy to align Dimension 2 with planetary motion, orbital motion, escape velocities, electromagnetic wavelength frequencies used in a Mars exploration mission. A chemistry teacher could talk about comparing how water standards of measurement on Earth differ on Mars: heat of fusion/vaporization, standard pressure comparison, vapor pressure comparisons, exposure to radiation on Earth's surface compared to Mars or the Moon, or how atoms are identified by specific frequencies of light. Biology teachers could tie the big picture questions building lessons around microbes such as extremophiles in the life kingdom Archaea. If life were to exist on Mars, these hardy life forms would certainly be a candidate. Where do these life forms exist on Earth? Where should we look on Mars? How does searching for water formed minerals on Mars link to water and possibly life? Back to chemistry: Can water exist on the surface of Mars? Why? Earth Science teachers could use land forms comparisons, glacier comparisons, climate comparisons, etc. Do I dare mention micro-fossils and the infamous Martian meteorite ALH840001? At any other level of science it's about all of the above at the appropriate scale. NGSS tries to engage students in scientific practices to better develop essential knowledge.

A major piece of the third dimension of NGSS is about *Disciplinary Core Ideas* which are teachable over multiple grade levels/disciplines and relate student interest to essential scientific knowledge to understand the scientific inquiry. If we use the *big picture* concept followed by inquiry guided student generated questions, then use Dimension 3 to tie student interest into core science ideas that have been developed over multiple grade levels, and use them to develop deeper understanding through an inquiry based investigation. Many of the conference workshops focused on introducing teachers to the new standards, and the keynote speaker clearly exemplified his use of STEM in his work.

The Mars/STEM research being done by Dr. Glotch is just one exemplary way of creating a *big picture* student led investigation to incorporate the new standards. However, not to reduce the significance of his work, any exciting scientific research could have been used to develop the theme of the whole conference. Workshops are short, and the subjects we teach require a lot of time and energy, so it is often difficult to find the time to connect things learned at conferences. So I felt this article might help connect some of those dots.

Finally, I believe the elementary program is the key to making the new standards a success, which is why I'm asking anyone teaching in science elementary schools to possibly give a workshop next Spring. Balancing the demands of common core with science is going to be difficult. I see how teaching time is used by elementary teachers in the K-8 school that I teach in, and some teachers teach science only one period a week, while spending half of every day on two common core subjects. I understand that reading and math are the foundation of learning, but not at the expense of a well-rounded education. Administrators need to be engaged in the NYSSLS transition and planning, or the standards will never be met. On a brighter note, using *big picture* themes to teach science has been one of my most rewarding ways to teach science, as has been measured by student success and sheer student motivation. If you have any questions about this article or the conference, please feel free to email me at jmalave@montaukschool.org.

Have a great school year!

Conference committee members
Matt Christiansen, Sonja Anderson,
Joe Malave, and Jean Ann Crespo.



Opportunities for Teachers & Students

Flip Your Classroom with Geoscience Videos

Jennifer Dixon, David McConnell, Jason Jones

As you look toward fall classes, you might find some useful resources in our GeoScience Videos YouTube channel, (<http://www.youtube.com/c/GeoScienceVideos>). The channel has more than thirty videos, including short videos (~6 minutes) that target basic concepts in introductory geoscience courses (e.g., Tectonic plates, Sedimentary Rocks, Classification of Volcanoes, Porosity & Permeability) and newer mini-videos (2-3 minutes) that focus on single topics (e.g., Clastic Sedimentary Rocks).

Colleagues tell us that they use the videos in a variety of ways, including as pre-class work, to support in-class discussions, as post-class reviews or homework, or as supplementary learning materials. We use these videos to support a flipped class teaching model that requires students to review a video and answer related quiz questions online before attending class (for more about this process see our video about Flipping a Geology Class, <https://www.youtube.com/watch?v=1tBhm8uBkhM>). Regardless, of how they are being used, we are glad that many other instructors have found these resources useful and we hope you do too.

We also created a GeoScience Videos blog (<https://geosciencevideos.wordpress.com/>) to provide support for instructors using the videos. The blog contains links to pdfs of one-page quizzes for each short video as well as other related information such as in-class questions and activities. We continue to update the available materials.

Call For Workshops

2017 Spring Conference

April 21, 2016

Brookhaven National Labs

Joe Malave, Conference Chairperson

I'm announcing a **Call for Workshops** in all Science/STEM disciplines for our planned 2017 Spring Conference which will take place on April 21, 2017 at Brookhaven National Labs.

Please consider presenting a workshop on a topic about which you have passion that can help teachers improve the delivery of their courses and which can inspire students.

We are particularly interested in expanding our workshop offerings elementary science teachers. If you are an elementary science teacher please consider presenting or if you know of an elementary colleague who has something to share, please encourage them to become a presenter.

When submitting a proposal please write a title and one paragraph that describes your workshop. Include your name teaching position, school, and district.

Email the proposal to me at jmalave@montaukschool.org.



to

Institute for STEM Education



STONY BROOK UNIVERSITY

I-STEM Programs for the 2016 – 2017 Academic Year

Last year the Center for Science and Mathematic Education (CESAME) at Stony Brook University was renamed the **Institute for STEM Education** (I-STEM). Even though its name has changed, the organization's commitment to quality STEM education remains the same.

I-STEM at Stony Brook University invites middle and high school science teachers to bring their students to work in our state-of-the-art laboratory facilities to do inquiry experiments that are rooted in real world science.

I-STEM has programs for middle school students as well as programs designed for each of the high school sciences: chemistry, earth science, environmental science, living environment, and physics. The lab activities have been designed to meet the needs of students in Regents, Honors, and AP/IB level classes. More information about all of these programs can be found on the I-STEM website: <http://istem.stonybrook.edu/> (follow tabs for Teachers/School Field Trips).

[Biotechnology Teaching Laboratories](#) (for all levels of Living Environment)

[Physics Teaching Laboratory](#) (for all levels of Physics and AP Chemistry)

[Chemistry Teaching Laboratory](#)

[Sustainable Chemistry Teaching Laboratory](#) (for AP and IB Chemistry and Environmental Science)

[Earth Sciences Teaching Laboratory](#) (for middle school and Regents level students)

All of these programs are BOCES aidable via Western Suffolk BOCES regardless of whether your school is in Nassau or Suffolk County. Please contact Peggy Unger at 631-360-3652.

I-STEM is pleased to inform you and your students about two other programs that are being offered during the academic year.

The *Della Pietra High School Applied Math Program* provides opportunities for students in grades 10-12 to enrich their knowledge of mathematics and explore several branches of applied mathematics. Information about this program can be found on the I-STEM web site: <http://istem.stonybrook.edu/content/della-pietra-high-school-applied-math-program>

The *Holiday Science Camp* is designed for students in grades 5-7 and the program meets on occasional week-days when public schools are closed for holidays. This unique program offers students the opportunity to explore a wide range of science topics in biology, environmental science, and the physical sciences. Information about this program, including schedule, can be found on the I-STEM web site: <http://istem.stonybrook.edu/content/holiday-science-camp>

If you should have questions about any aspect of the programs offered through I-STEM, please contact Judy Nimmo or Debra Pelio at istem@stonybrook.edu or 631-632-9750.

Experience Seminars on Science

Online Courses for Educators



Since 2000, *Seminars on Science*, an online professional development program at the **American Museum of Natural History**, has engaged thousands of educators around the world in cutting-edge research and

provided them with powerful classroom resources. The program offers twelve online graduate courses in the life, earth, and physical sciences. Each course is rich in essays, images, videos, interactive simulations and vibrant discussions that connect learners to the Museum's scientists, laboratories, expeditions and specimens. Graduate credit is available for all courses through partnerships with eight colleges and universities.

Registration is now open for Fall 2 Session which begins October 31. Registration for Spring courses, which begin in January, will be open shortly. The courses can be taken for up to 4 graduate credits. Check out the website for a complete listing of courses.

You can sign up now at **[learn.amnh.org](http://www.amnh.org)**. Since the courses are fully web-based, there is no need to come to the museum at any time and all courses are led by both an experienced classroom teacher and a PhD scientist in the field.

<http://www.amnh.org/learn/Courses>

Let us know if you have any questions—we're happy to talk about the program or the courses. Email or call for more information:

Phone: 800-649-6715

Email: seminfo@amnh.org

Web: <http://www.amnh.org/learn/>



Students from Paul J. Gelinis JHS participated in a Day in the Life of the Nissequogue River as part of the Brookhaven Open Space Stewardship program. They collected data on biodiversity and water quality of the mouth of the river at Short Beach in Smithtown.



Brookhaven Lab Open Space Stewardship Program



Gary Vorwald with his research class from Paul J. Gelinas JHS. Gelinas is one of many schools in Suffolk County that participate in the Open Space Stewardship Program each year. Next to Mr. Vorwald are professional environmentalists including JoyAnn Cirigliano (Four Harbors Audubon Society), Melissa Griffiths Parrot (Pine Barren Commission), and Mel Morris, Office of Educational Programs, Brookhaven National Labs). Over 2000 students participated in the Day in the Life of a River program this year.

The Open Space Stewardship Program (OSSP), sponsored by Brookhaven National Laboratory Office of Educational Programs, fosters partnerships between schools and land stewards in their local communities. Students in grades K through 12 directly interact with nature as they collect data within their community. This program is designed to:

- * benefit land stewards in the management of their property
- * help students to learn about the scientific process through working with real-life data in the field
- * promote scientific literacy
- * encourage students to consider careers in science and technology
- * foster a sense of civic responsibility and respect for the environment

Students in grades K through 12 are involved in authentic environmental research on properties in their own communities, fostering a sense of ownership and responsibility for open space within their neighborhoods. Each June students and teachers who participated in OSSP are invited to BNL for an OSSP evening celebration at which students display and present their work to teachers, parents, scientists and others in the environmental community.

For more information, contact Mel Morris, mmorris@bnl.gov or call 631-344-5963.

<http://www.greenoss.org/index.php>

Right: Students participate in Open Space Stewardship Program at Sand Beach in Smithtown.





Calling All Teachers:

Registration Now Open for Toshiba/NSTA ExploraVision Program

Registration for the 25th annual Toshiba/NSTA ExploraVision program—the world's largest K–12 student science competition—is now open. The deadline for all project submissions is **February 6, 2017**.

Through the competition, teams of 2 to 4 students are challenged to research scientific principles and current technologies as the basis for designing innovative technologies that could exist in 20 years. Students simulate real scientific research to outline how they plan to test their ideas and create mock websites to illustrate concepts. Student participants will have a chance to win a number of great prizes, including \$10,000 U.S. Series EE Savings Bonds (at maturity). Canadian winners receive Canada bonds purchased for the equivalent issue price in Canadian dollars. And to celebrate ExploraVision's 25th anniversary, the top 25 teachers who submit 25 eligible online entries will receive a technology related gift.

Teachers can learn more information by visiting the frequently asked questions page on the competition website. Follow ExploraVision on [Twitter at @ToshibaInnovate](#) or like ExploraVision on Facebook.

Website: <http://www.exploravision.org/>





The ultimate middle school science competition.

The Discovery Education 3M Young Scientist Challenge is the nation's premier science competition for grades 5-8. This one-of-a-kind [video competition](http://www.youngscientistchallenge.com/es) has sparked the imaginations of hundreds of thousands of students and enhanced science exploration, innovation and communication across the United States.

<http://www.youngscientistchallenge.com/es>

Many of the greatest innovations of our time were first designed to solve a simple problem. This year's Discovery Education 3M Young Scientist Challenge encourages young people to solve everyday problems using science and innovation. When you are working in the field of science, the opportunities for innovation are endless! Your innovative ideas just may revolutionize the way we live.

Entrants should identify an everyday problem that directly impacts them, their family, their community, or the global population. The idea must be a **new** innovation or solution, and cannot simply be a new use for an existing product.

The challenge is to **create a one- to two- minute video** that...

- explains the problem and how it impacts the entrant, their family, their community or the global population;
- describes a **new** innovation or solution that could solve or impact the problem;
- explains the science, technology, engineering and/or mathematics behind their innovation; and illustrates how their innovation could both address the everyday problem they've identified and have a broader impact locally or globally.

Middle Level Science Olympiad

Keri Lukin-Page, Regional Coordinator

Science Olympiad is a nationwide science and technology competition with over 7600 teams in 50 states. Science Olympiad's ever-changing line-up of events in all STEM disciplines exposes students to practicing scientists and career choices, and energizes classroom teachers with a dynamic content experience. Each school-based team is allowed to bring 15 students who cross-train for a variety of events in their skill set, but some school clubs have more than 75 members, allowing for an apprentice and mentoring system.

Science Olympiad competitions are like academic track meets, consisting of a series of 23 team events in each division (Division B is middle school; Division C is high school). Each year, a portion of the events are rotated to reflect the ever-changing nature of genetics, earth science, chemistry, anatomy, physics, geology, mechanical engineering and technology. Teams can compete in Invitational and Regional tournaments. The top teams in each region advance to the state tournament, and the top one or two teams in the state qualify for the national tournament.

The B-Division regional tournament for Suffolk County will tentatively be held on March 4, 2017 at Candlewood Middle School in Dix Hills. Teams of up to 15 students compete against each other in approximately 15 events. Events vary each year. This year, students will use forensic science to solve a crime in Crime Busters, build a Rube Goldberg style device for Mission Possible, become a weather expert for Meteorology, and use mirrors to complete a laser shoot in Optics, as well as many other interesting events. The top teams from our region will go on to compete at the state tournament in Syracuse in April.

In 2016, 38 teams from 22 schools competed. Teams from Bay Shore Middle School, Hauppauge Middle School, Port Jefferson Middle School, R. C. Murphy Junior High School and Paul J. Gelinas Junior High School represented our region at the state finals. The top two teams in the state, Gelinas Junior High from Setauket and Eagle Hill Middle School from the Syracuse area continued on to the national tournament in May.

Science Olympiad is a great way to get students interested in the doing of science. It offers them a chance to put their problem solving skills to use and challenge themselves. Any middle school or junior high school teachers with questions about how to get started can contact the regional director, Keri Page, at kpage@hhh.k12.ny.us. Interested coaches can visit the New York State website to register a team at www.newyorkscioly.org. Looking forward to seeing you at the tournament in March!

2016 New York State Champions from Paul J. Gelinas JHS represented New York and Long Island at the National Tournament held in Wisconsin. They placed 10th out of 60 teams in the country. (Photo courtesy of Three Village CSD.)



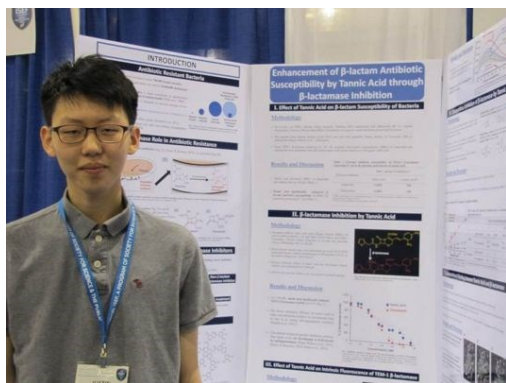
Long Island Science Congress

Mary Kroll, LISC

Long Island Science Congress is an adjudicated exhibit of science projects by students of both Nassau and Suffolk County middle, junior and senior public and parochial high schools, sponsored by the Long Island Sections of the Science Teachers Association of New York State (STANYS). This year's fairs were held on Tuesday, April 12th (Junior Division grades 7-9) and Wednesday, April 13th (Senior Division, grades 9-12) at St. Anthony's High School in Huntington. Long Island Science Congress hosted over 1500 students from 115 schools with 529 students participating in the Junior Division and 996 students participating in the Senior Division. This year each participating school was allotted up to 15 projects per division due to the gracious welcome and sizeable accommodations of St. Anthony's High School facilities. The **Long Island Science Congress Awards** ceremonies were held on Monday, May 16th at The Wheatley School where the top 25% of projects were awarded trophies, plaques, and monetary awards totaling over \$30,000.00 due to the generous donations of Science Congress supporters.

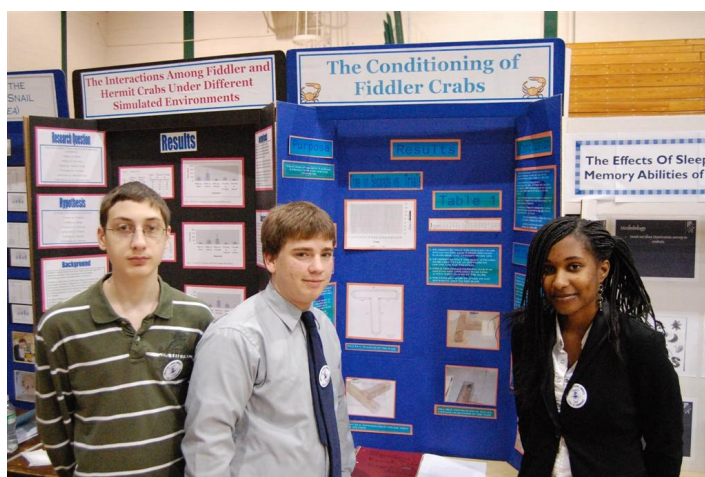
Additionally, 36 students in the Junior Division and the Senior Division were nominated to attend the **New York State Science Congress** at the University at Buffalo on Saturday, June 4th. To reach the state level, students had to place first or second in their categories at the middle and high school divisions to advance. Long Island Science Congress would like to thank the Suffolk STANYS section for their financial support to the Long Island students who participated in the New York State Science Congress. Thirteen of these students from Long Island were among those winning highest honors and honors recognition for their research projects.

Long Island Science Congress will again sponsor two division fairs in 2017 at St. Anthony's High School on Tuesday, April 4th, 2017 Junior Division, and Wednesday, April 5th, 2017 Senior Division. The Long Island Science Congress committee is made solely of volunteers including active science teachers, retired science teachers, and science professionals who dedicate countless hours to foster and encourage scientific research on Long Island. We are always seeking new volunteers to assist in this tremendous endeavor. Please contact Phil Sheridan at psher@optonline.net if you are interested in participating or visit our website at www.liscicong.org for more information.



Jericho High School junior Justin Kim was awarded highest honors in the high school division's biological sciences category at the New York State Science Congress in Buffalo. He is pictured here during the Long Island Science Congress at St. Anthony's High School in Huntington Station. Photo Credit: Jericho School District

(Photo and caption obtained from Ebert, Michael. Nassau Students Among 13 LI Winners of Science Congress Awards. Newsday. 27 June 2016.)



Commack High School students with their project at the Long Island Science Congress

(Photo Credit: Commack High School Science Department <http://www.commack.k12.ny.us/chs/depts/science/ScienceWeb/Photopage.htm>)

Professional Science Teacher Organizations

While STANYS is your New York State science teacher professional organization, there are several subject specific professional organizations that can provide valuable resources and opportunities within your discipline. Check out and support these groups that can enhance your skills and provide support for your teaching practices.



National Science Teachers Association (NSTA)

Become the Best Teacher You Can Be

Membership in NSTA is one of the best professional development investments you can make. Join more than 55,000 dedicated teachers, science supervisors, administrators, scientists, and business and industry representatives committed to science education. Help us promote excellence and innovation in science teaching and learning for all!

As an NSTA member, you'll receive:

- The award-winning NSTA journal of your choice;
- *NSTA Reports*, our quick-read newspaper delivered 9 times a year;
- Admission to the NSTA Learning Center and other online professional learning resources;
- Access to more than 200 other products and services.
- We offer eight membership categories, gift memberships, and special multi-journal and multiyear discount plans

<http://www.nsta.org/membership/>

National Association of Biology Teachers (NABT)



The National Association of Biology Teachers (NABT) is the "leader in life science education." Since its inception in 1938, thousands of educators have joined NABT to share experiences and expertise with colleagues from around the world, keep up with trends and developments in the field, and grow professionally. NABT empowers educators to provide the best possible biology and life science education for all students.

Member Benefits: Teaching is all about relationships. You and your students; you and your colleagues; you and your content. We have a rich collection of resources and programs. Your relationship with NABT puts those resources in your hands.

<http://www.nabt.org/websites/institution/index.php?p=1>



National Earth Science Teachers Association (NESTA)

The National Earth Science Teachers Association is a nonprofit 501 (c) (3) professional educational organization, founded in 1983, whose purpose is the advancement, stimulation, extension, improvement, and coordination of Earth Science education at all educational levels. We welcome new members, and offer numerous benefits to membership. We believe that the Earth Sciences are unique among the sciences, offering unparalleled opportunities for interdisciplinary learning and application in a field inherently relevant to learners of all ages. K-12 preparation in the Earth Sciences, prepares students to understand today's rapidly changing world. It offers experiences in a diverse range of scientific disciplines that have direct application to their lives.

Join **NESTA** today to support Earth and Space Science Education! NESTA is now offering discounted joint memberships with several Earth Science Teachers Associations. If you'd like to take advantage of this discount when you join or renew, be sure to choose the membership option of your choice with the Affiliate Earth Science Teachers Association in the registration process.

<http://www.nestanet.org/cms/>



New York Earth Science Teachers Association (NYESTA)

The *New York Earth Science Teachers Association* is an affiliate of the *National Earth Science Teachers Association*. It is a collaboration of teachers focused on continued excellence in the study of our planet. We are working to maintain Earth Science to its high standards. The goal of NYESTA is to promote Earth Science education in New York State by offering a professional community for both the pre-service and the working New York State Earth Science teacher.

NYESTA is looking to fill the needs of the 21st century teacher. While virtual communities are valuable and have their place, meeting with and sharing best practices and talking through concerns in the classroom is invaluable. NYESTA will hold two meetings annually. Our annual business meeting will be in conjunction with the state science teacher conference in Rochester as a registered workshop with an evening reception. Our second meeting will be a traveling meeting and field conference which will be held at different locations around the state. This affords teachers the opportunity to attend a conference close to them and to also see the different aspects of our grand state. The Geologic Field Conference will include family friendly field trips as well as guest lecturers.

Plans are underway for this year's conference which will be held at SUNY Fredonia in July 2017. We will also be accepting nominations and applications for two awards given at the summer conference: *Distinguished Earth Science Teacher* and *Distinguished Service to Earth Science Education*.

Visit NYESTA on Facebook!

www.nyesta.org

NYESTA participants at the 3rd Geologic Field Conference held last July in central New York, hosted by SUNY Oneonta.





American Association of **Physics Teachers**

Enhancing the understanding and appreciation of physics through teaching

AAPT is the premier global professional society established to advance the greater good through physics education. With the support of our members worldwide, AAPT is an action oriented organization designed to develop, improve, and promote best practices for physics education as part of the global need for qualified Science, Technology, Engineering, and Mathematics teachers who will inspire tomorrow's leaders and decision makers.

AAPT provides teachers with many opportunities for professional development, networking, and student enrichment. Whether you consider yourself to be a specialist in middle school, high school, undergraduate, or graduate physics education, with AAPT membership you will find the resources you need to change young lives, and the peers who are eager and able to support you. Please take a look at our website for further information on AAPT's many activities and opportunities.

<http://www.aapt.org/aboutaapt/>

AACT™
American Association
of Chemistry Teachers

Learn how AACT membership can enhance your experience in the chemistry classroom.
✉ aact@acs.org

Visit teachchemistry.org to join now!

The graphic features the AACT logo on the left, which includes the acronym 'AACT' in a large, bold, blue font with a grid of colored squares (green, blue, orange) to its right. Below the logo is the text 'American Association of Chemistry Teachers'. To the right of the logo is an illustration of two scientists, a woman with orange hair and a man with black hair, both wearing safety goggles and lab coats. They are in a laboratory setting, with the woman holding a test tube and the man holding a beaker. The background is a light blue and white grid pattern.

American Association of Chemistry Teachers (AACT)

- The American Association of Chemistry

Teachers (AACT) is a professional community by and for K–12 teachers of chemistry. Take advantage of AACT's benefits to connect with peers, discover quality classroom resources, and achieve your professional goals. Membership is open to educators and anyone with an interest in K–12 chemistry education.

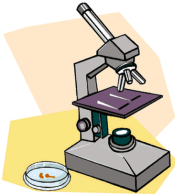
- Get connected in a community of passionate teachers of chemistry where you can ask questions, share strategies, find support, and overcome challenges.
- It's an easy way to find innovative and effective ideas to implement into your classroom.

Take advantage of opportunities to learn from other experienced teachers and professionals.

<https://www.teachchemistry.org/content/aact/en.html>

Subject Area Representative (SAR) Reports

BIOLOGY



Fun Explaining Things David Knuffke, Biology SAR

Happy Fall STANYS! I thought you might be interested in a recent activity that I created, based on a recent book that I read, "*Thing Explainer: Complicated Stuff in Simple Words*" by Randall Munroe. The activity can be accessed at <https://goo.gl/dT9wIB> (case sensitive). Hope you enjoy it!

I don't know a lot about you. I don't know what you teach, or what you think about your teaching. I also don't know what you think about the people you teach. I can tell you a bit about me: I teach very bright young people about the world and the tiniest parts of things that make up the world. I really like my job, and I like good ideas about my job. This is about one good idea about my job that I want to share with you.

I just got a new book. The book is called "*Thing Explainer: Complicated Stuff in Simple Words*"¹, and it was made by a man (Randall Munroe) who also wrote another book [*What If?*]² that I like. He also has a computer-place³ that I like to go to where he puts pictures. What the man has done for his new book is to take very interesting things and explain them using only the ten-hundred [1000] most used words in our language. The man says that he thinks that using only simple words to write about interesting things makes you think about what the things do and how they work, instead of thinking about the big words that the people who study interesting things use when they talk and write about them, which can be confusing. He has also put in very nice drawings of the things that he is explaining.

I think this is a great book. I also think that the way that this book has been made will be great for the very bright young people that I teach about the world. The very bright young people that I teach about the world can get confused by the big words that are used by the people who study the important things that they are learning about. I know this because sometimes, the very bright young people tell me. I also know this because sometimes when I read the words that the very bright young people write to me about the important things that I teach them, they show me that they are confused about the big words that we use.

So I made something to help the very bright young people that I teach try to use the way that was used to write "*Thing Explainer*." I used the computer to put this thing in [a place where I can share it](#)⁴ with other people, too. You can find it here if you would like to use it, or change it around for an idea of your own. One thing that can help is that the man who wrote the book made [a computer-place where you can see if your writing](#)⁵ follows the same way of writing that the man used when he wrote the book. Words that aren't part of the ten-hundred most used words in our language will show up colored red. I used it to write what you are reading right now.

I think that this idea is going to be very good for the very bright young people that I teach. I also think that it might be very good for very bright young people who are learning other things, too. I would be very interested to see if anyone who reads this decides to use this idea to teach other things like the study of the language that we all use, or the study of the people who lived on Earth before us, or even the study of the pictures people make. Please share this with anyone that you think would be interested in these things. Thank you for reading.

1 <http://xkcd.com/thing-explainer/>

2 <http://whatif.xkcd.com/book/>

3 <http://xkcd.com/>

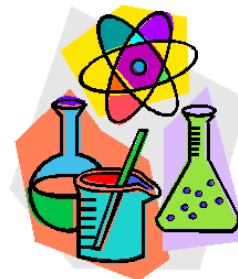
4 <https://goo.gl/dT9wIB> (case sensitive)

5 <http://xkcd.com/simplewriter/>

Appy-Hour!

Ashely Bloch, Intermediate SAR

Recently, I have been trying to incorporate more technology based applications into my teacher “bag-of-tricks”. The struggle is real, at least for me, since my school district has strict technology guidelines that I need to adhere to. However, this could possibly be a good thing, since it has forced me to really look around and see what is offered and what my district will support. Here are few Apps that I have been using to enhance my instruction.



Remind

This is an oldie but a goodie! This app allows me to communicate with my students (and their parents) via text message. What makes this so wonderful is that there is no exchange of phone numbers – the students (and their parents) will never see my phone number and I’ll never see theirs. It is super easy to send out an extra help schedule on Sunday nights and great way to send gentle reminders about upcoming labs and assessments. Additionally, I also include links to various video clips and scanned documents online for the students to use for review. No excuses regarding how they couldn’t find it – since I sent it right to them!

ZipGrade

I started using this app when our scantron machine broke down. I wasn’t about to grade seventy, 50 question multiple choice question exams by hand – I needed to find a solution, quick! I entered ZipGrade. Here, students answer their questions on ZipGrade’s special, custom scantron. Then, using their app, I use my phone to digitally scan their sheets and voila - their answers are instantly graded. No more waiting to use the scantron machine, I can grade scantrons from home. Additionally, students can use pen or pencil on their answer sheets – no more searching for a number 2 pencil! Best of all, I can do an item analysis of their answers to see where students have had the greatest trouble. Additionally, if I make a mistake on my answer key, I can easily change it within the ZipGrade app and ZipGrade will regrade all the papers I scanned earlier, without me scanning them a second time!

Plickers

As I mentioned earlier, ZipGrade has an item analysis feature. The more I utilized this feature, the more I noticed that my students were getting certain types of questions wrong. I wanted to find a way to review these types of questions with them and see if the students had the material stick the second time around. Plickers is a great way to review multiple choice questions. Here, students are each given a unique QR code (found on Plickers’ website) that allows them to answer questions. A question is projected on the board, the students select an answer and hold up their QR code, and I scan the classroom with my cell phone. The overall student results are projected on the board (without student names), while I can see on my phone how each student answered. Additionally, since all the students QR codes are different, the students have no idea how the others in the classroom answered. A great device for do-nows or exit tickets, my students love using Plickers. In fact, since I started using them last October, I have not had a single student lose their QR code answer sheet!

EdPuzzle

Many students this year seem to not be able to make it to extra help, so I need to figure out a way to offer review on their own time. I started recording lessons via *ScreenCast-O-Matic* and posting them on YouTube, but I had no means of knowing which students were watching these videos and if my students actually were watching them. I also didn’t know if they were gaining anything from watching these videos – could they possibly be falling asleep in the middle of them or getting up to make a sandwich? EdPuzzle seems to answer these problems. Here, students create an account where they watch videos hand selected by their teacher (it can be videos that you create or that others have uploaded). Then, the teacher has the ability to insert questions in the video, so the student understanding can be checked as they are watching the videos. Now I know who watched the videos, who understood what they watched, and how many times they needed to watch it for understanding. This is something that is going to be heavily used in my class this year. Watching the videos will be mandatory.

The End of the Periodic Table?

James Ripka, Ph.D., Chemistry SAR



Seven rows and eighteen columns, one hundred and eighteen entries. *The International Union of Pure and Applied Chemistry (IUPAC)* recently proposed names for the final four elements of the Periodic Table. Elements 113, 115, 117 and 118 now have names. Is this the end of the Periodic Table?

When you see a science lab on TV or the movies, they almost always have a Periodic Table hung on the wall in the background. One might think that scientists need to constantly refer to this chart for information on a daily basis. This iconic image has changed over time and now is complete.

When I was an elementary school student, the Periodic Table looked complete with 103 elements. You could look with awe at the neat arrangement of elements. We took pride in elements such as Americium, named for our country. Of course Polonium and Francium were for the “old” world and therefore, “older” than the new world of Californium, Fermium, etc. I marveled and tried to memorize the elements, just like the capitals of the 50 States. Team USA seemed to be discovering the newer elements above 94.

The seventh Principle Energy Level (PEL) had only two lonely entries, Francium and Radium. The rest of the 7th PEL was blank. There were no place holders, for future elements. Ms. Hess, my sixth grade teacher, could not tell me if any new elements would ever be discovered. By high school, more elements had been discovered and new entries appeared in the 7th PEL. Unusual placeholder names, such as Ununquadium (Uuq, element 114 also called eka-lead), appeared as well. I started to wonder, would the table ever be completed?

More than 3,000 years ago, the ancients knew 12 elements: Carbon, Sulfur, Iron, Copper, Zinc, Arsenic, Silver, Tin, Antimony, Gold, Mercury and Lead. From Egypt, to India, to China; Europe to Asia, these elements were in use.

In 1669, Phosphorus was discovered by Brand, when he purified it from urine. The eighteenth century brings on the discovery of many new elements. Lavoisier created a table of 29 known elements in 1789. The 18th century closes when Vauquelin observed a new element in beryl and emeralds, called Beryllium.

At the beginning of the 19th century, Vanadium and Niobium were observed. And as every chemist knows, in 1869 Mendeleev created his Periodic Table of 64 elements. Krypton, Neon, Xenon, Polonium, Radium and Radon were all recognized in 1898 to close out the 19th century.

Perrier and Segre created the first synthetic element, Technetium, in 1937 by placing Molybdenum in a cyclotron. The last naturally occurring element, Francium, was discovered by Perey in 1939. Then the age of “synthetic” elements really began. In 1940, Astatine, Neptunium and Plutonium were discovered by different groups who bombard elements. Between 1949 to 1961, Elements 97 to 103 were created, some by bombardment of atoms and some by thermonuclear explosions. In the sixties and seventies the pace slowed and only Rutherfordium, Dubnium and Seaborgium were discovered. Three more elements were found in the eighties and four more in the nineties. By the year 2000 the total number of elements was 114.

The final four elements on the table were discovered by 2010: Element 118 in 2002, Element 115 in 2003, Element 113 in 2004 and Element 117 in 2010. The IUPAC recently proposed names for these final four elements. We are in the public review time and you have until November 8, 2016 to register a comment on these new names. The naming follows the generally accepted guidelines of endings in “ium” for Groups 1 - 16, “ine” for Group 17 and “on” for Group 18.

It is interesting that the letter “J” still does not appear in an element name on our Periodic Table. It did, however, appear on Mendeleev’s original periodic table Iodine. (Before the 20th century, a capital J was often used in names in lieu of capital I.)

<u>Element</u>	<u>Name</u>	<u>Symbol</u>
113	Nihonium	Nh
115	Moscovium	Mc
117	Tennessine	Ts
118	Oganesson	Og

(Continued from page 27)

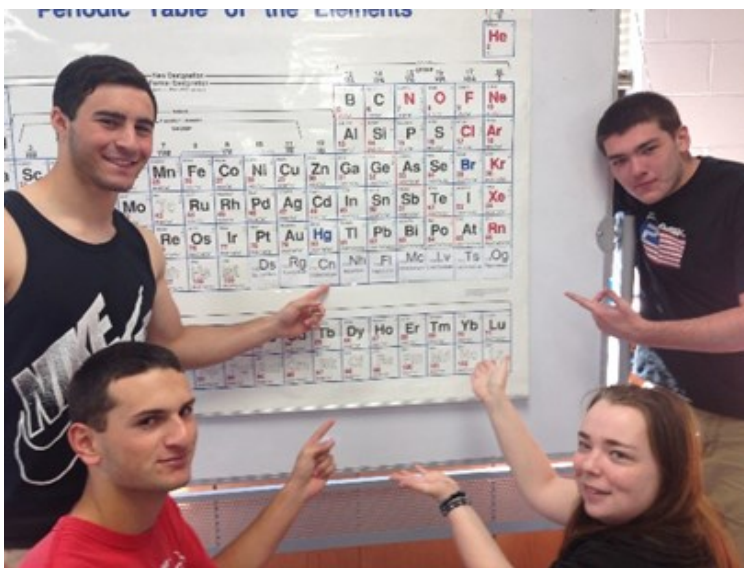
Element 113 is the first element named for Asia. Nihonium was discovered at the RIKEN Nishina Center for Accelerator Based Science in Japan. Nihon is one of two ways to say Japan and literally means the “Land of the Rising Sun.” Element 115, Moscovium is in honor of Moscow for the Joint Institute for Nuclear Research at the Flerov Laboratory, which is where Element 114, Flerovium was also discovered. Element 117 recognizes the input of the Oak Ridge National Lab in Tennessee, along with Vanderbilt University and the University of Tennessee at Knoxville, hence the name Tennessine. And finally we have the capstone of the Periodic Table, Element 118, Oganesson. In general, elements are not named after living scientists. The exception to the rule was Element 106 Seaborgium, which is a tale of how Seaborg skirted the rules to get his name on an element. Oganesson is named in honor of Professor Yuri Oganessian for contributions to transactinoid elements, discovery of super heavy elements and the concept of the “Island of Stability” for elements that we are all familiar with.

If you would like to make a comment on the proposed names, please visit before November 8:

www.iupac.org/recommendations/under-review-by-the-public.

I have updated my Periodic Table with the proposed names of the final four elements, you can too.

Is this the end of the Periodic Table? Will an 8th PEL be discovered and new elements found? Who knows? It is possible. Some preliminary experiments point towards this discovery. Maybe posterity holds more elements in reserve for the future scientists who we are teaching now in our classes and research programs.



STANYS 120th Annual Conference

November 5-7, 2016

Rochester Riverside Convention Center

<http://www.stanys.org/>



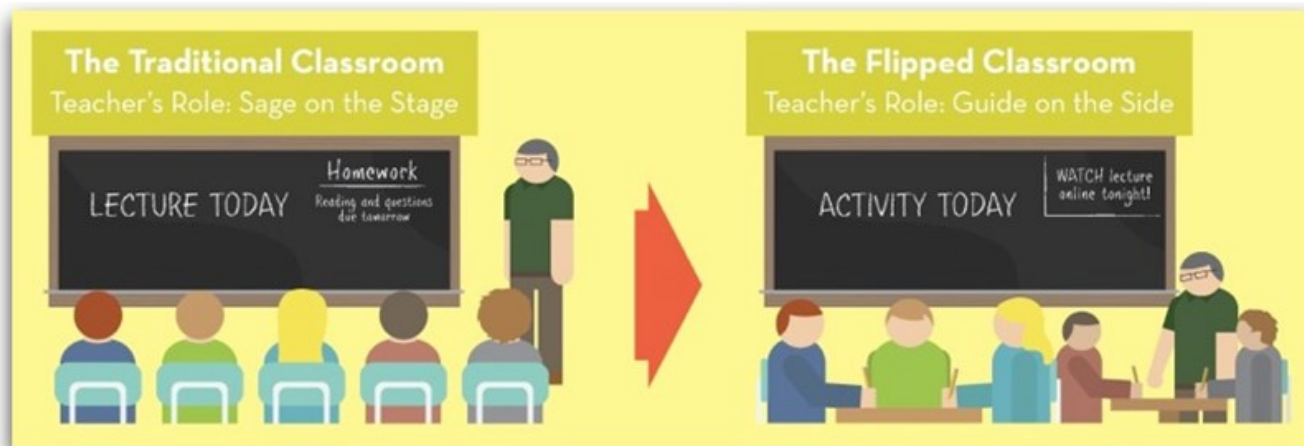
Flipped Classroom Where to Begin?

Melissa Torre, Earth Science SAR



Students today learn much differently than students in the past. If students today need to learn how to do something, they google it or watch a YouTube video. This is the best & fastest way for students to learn something in their own way on their own time. This is where Flipped Learning comes into play.

The **flipped classroom** is a model in which the typical lecture and homework elements of a course are reversed. Short video lectures or readings are viewed by students at home before the class session, while in-class time is devoted to exercises, projects, or discussions.



Step 1: Decide which technology you will use.

The low tech, less time consuming approach, is to film yourself with a Flip cam (even your cell phone will work). Then you just upload your video to YouTube.

The higher tech approach would be to use an application like [Camtasia](#) to capture your voice along with your computer screen. I have talked to many other teachers who use the paid version of [Screencast-O-Matic](#).

Once you decide what technology you will use you just narrate your existing PowerPoints. No need to create anything new. You are, after all, simply filming your existing lectures.

Step 2: Decide which video service you will use to publish your videos to your students.

What service will be easiest for my students to access at home? Will the service I choose allow students to watch my videos on multiple devices, like smart phones and iPads? Do I want my videos to be public or private? (YouTube has this option, and still makes it very simple to share your videos.)

I plan on using [Edpuzzle](#), which is a free site where you can upload your videos and insert questions that the students must answer before they can finish watching the video. The site also shows how long the students were on the site and what time they started and ended the video. You can also use YouTube which is available almost everywhere and on almost all devices. [Curriculet](#) is useful to assign reading passages, and is very similar to [Edpuzzle](#) where you can imbed questions.

Step 3: Make your videos!

Make sure to set some time limits. Try to keep the videos between 5-15 minutes in length. Many people are nervous that a 40 minute lecture will not fit into a 10 minute video, however you are losing all of the normal distractions that you have in class. No more slow writers (they can pause the video), no more stopping to take

(Continued on page 30)

attendance, or stopping for behavior issues. While filming, add your flair. Be yourself. Be funny. Be at ease. This is a good way to keep your students' interest and show them that you are still their teacher, even though you're in cyberspace.

Step 4: Make your students accountable for watching your videos.

EdPuzzle allows you to imbed questions throughout the video that the students must answer. Some people have them fill in skeleton notes, entrance tickets the next day, or quizzes. I've even heard of teachers hiding a picture, word, or phrase in their videos and asking about it the next day.

Step 5: Keep it up!

Find a video-making schedule that fits your lifestyle. Some people do them in the summer and get almost all of the videos done in a few days. Some teachers like to make the videos for the week over the weekend. Whatever works for you, I suggest staying at least a full week ahead of the kids so if something comes up you have a little wiggle room. Also remember once they are done, you have them from year to year.

Whenever a student is absent they can still view your lecture online. Special education teachers and parents will love you because they can now access your teaching directly. You are available on demand. Students can go back & re-watch videos to study. This method frees up a lot of class time so in the end the students have more access to material and more access to you the teacher (the most important resource).

Helpful Links

<http://blog.cue.org/flipped-teaching-in-the-science-class-strategies/>

<http://www.mrpalermo.com>

ScreenCast-O-Matic: <https://screencast-o-matic.com/home/>

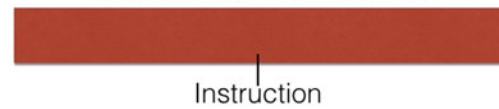
Edpuzzle: <https://edpuzzle.com/>

Curriculet: <https://www.curriculet.com/>

Camtasia: <https://www.techsmith.com/camtasia.html>

50 Minute Class Block

Traditional Classroom



Flipped Classroom



SAVE THE DATE

Suffolk STANYS

April 21, 2017

SPRING Into STEM Conference

Brookhaven National Lab, Berkner Hall

Check our website for updates and registration information.

www.SuffolkSTANYS.org

How to Start Thinking about New Standards in the Elementary Classroom

Mari Scardapane, Elementary SAR

Elementary teachers who love science know they are succeeding when they hear their students react. We listen for the oohs and aahs that come when a student looks at a butterfly through a magnifying lens, or views a projection of the night sky and recognizes a constellation, or pulls a rat skull from an owl pellet. Those moments of wonder and awe (and sometimes horror!) make teaching science to young students especially fun and rewarding.

But for many elementary teachers, the implementation of CCLS has been so time consuming that science investigations, the kind that engage students and open their eyes to the wonders of the world, have taken a back seat. And now, with new science standards expected to be adopted by New York State this year, we are facing a new set of challenges.

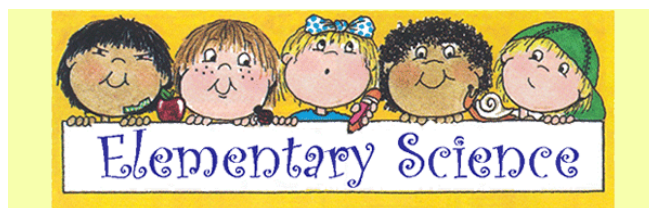
First, a little bit about the new standards: elementary students will be expected to develop an understanding of physical sciences, life sciences, earth and space sciences, as well as engineering and technology. Organized around core concepts in each of these areas as well as concepts that cut across all the sciences, students will be expected to develop ideas and skills to explain phenomena in the natural and designed worlds. Key to all is an emphasis on doing science and solving problems. The expectations are high. But this time, we have several important things going for us that will help make them reachable:

1. Timeline: The implementation of the new standards, once adopted, will occur over years, providing us time to do it right.
2. The instructional shifts we are making in English language arts and math are in line with many of the shifts called for in the new science standards. For example, the new standards require that students build knowledge through rich texts, engage in argument from evidence, construct explanations, design solutions, and obtain, evaluate and communicate information. Sound familiar?
3. Students must also develop and use models, and use math and computational thinking. Concepts such as recognizing patterns and cause and effect cut across all the sciences as well as math and English language arts. In elementary classrooms, the habits of mind required by the new science standards are already being developed in math and ELA lessons.
4. The new standards tap into the natural curiosity and wonder of young students - something every elementary teacher already knows how to access.

The change that may present both the greatest opportunity and biggest challenge for elementary science classrooms is the inclusion of engineering. Students will not only investigate science questions and demonstrate understanding of key science concepts, but will be asked to solve problems (engineering). The problems can range from improving soil for gardening, to creating a better habitat for birds, to cleaning drinking water in the community. There is a great deal of leeway for local determination of what the identified problems will be, presenting both an opportunity to foster creativity and innovation in our students, as well as new challenges for teachers who are already pressed for time in the daily schedule.

While some districts have started to introduce units based on the new standards, others have elected to hold off till the standards are adopted and additional guidance is provided by SED. Regardless, there are some things we may want to do as we engage in science with our students this year:

- ◆ Pay special attention to the world unfolding just outside the classroom door. What types of plants are in the school yard? What species of birds? Are there Canada geese on the property? What can we find out by examining our soil?
- ◆ Quantify observations, take measurements, and make charts and graphs. How many types of insects can we count in a soil sample? Can we track the outside temperature over a period of time? Measure the growth of



(Continued from page 31)

several small trees?

- ◆ Try to engage families. Can they go outside together to track the phases of the moon? Can they identify a place in the community where pollution is a problem?
- ◆ Engineer some solutions. Can we design a small bath to attract more birds to the school grounds? Create a step stool for students who can't reach the water fountain? Program the lights to shut off when the natural light in the room reaches a certain brightness?
- ◆ Integrate science into ELA and math lessons. As we have seen, many key practices cut across all disciplines.

Over time, the new standards, with their emphasis on doing science and solving problems, should ultimately bring back what every elementary teacher wants to hear - the sounds of joy and excitement as students discover for themselves the amazing way our world works.

Colleges Update

Linda Padwa, College SAR



It has been an interesting year for those involved with preparation of science teachers in the state. Last Fall this column addressed the new certification examinations that were put in place for pre-service teachers. Glad to report that the teacher candidates have adjusted to the new requirements and are taking the added burden and expense in stride. For some, these exams have proven to be quite challenging, but for others the exams are just another hurdle to get over as they become teachers. Candidates who take and fail an exam can take advantage of the safety net that the New York State has put in place for each of the certification examinations. Candidates will not have to re-take the exam as long as they meet the alternate requirements that have been put in place. These safety nets will be available until June 2017.

With the introduction and expansion of the *New York State Master Teacher Program* there has been an increased opportunity for in-service teachers to interact with pre-service teachers in venues other than student teaching or field observations. Teachers of science and mathematics have served as guest presenters on a wide range of topics that are important for pre-service teachers to incorporate into their "professional toolboxes." The Master Teachers have often revisited concepts and techniques that were addressed in Methods classes, but with their wide range of classroom examples the Master Teachers have helped to concretize what some candidates may have seen as theoretical concepts.

There is an open invitation for instructors in pre-service teacher preparation programs anywhere on Long Island to contact me (Linda.Padwa@stonybrook.edu) if they wish to explore how Master Teachers can be incorporated into their programs.

With the closure of Dowling College in Oakdale, one of the science teacher preparation centers on Long Island has ceased to exist. We are sorry to see the institution close its doors, but take comfort in knowing that there are several other very fine institutions on Long Island that are ready to welcome Dowling's teacher candidates and assist them as they complete their degrees.

Think Outside the Box to Provide Enriching Experiences

Sonja Andersen, Environmental SAR

One of the tasks that remind me of the start of the school year is the paperwork submission for field trips. I know districts vary widely in the amount of flexibility that teachers are given to take their students out of the building, some districts refusing to let students out of the classroom at all. I do realize that I am incredibly fortunate to have a supportive administration that truly goes above and beyond to support me in incorporating field trip experiences for my students. Having taught APES (AP Environmental Science) for 8 years I am not a stranger to the value of experiences for students. I have found that students can learn an incredible amount from experiences and using out of the classroom experiences really adds value and real world connections to my classroom teaching. Typically, I take students into their community numerous times throughout the year. We visit the Bronx Zoo, a sustainable farm, and the Museum of Natural History.

I have also started thinking about incorporating guest speakers via skype or hangout, google cardboard, and virtual field trips. Google has developed a fairly inexpensive way to visit places around the world and “experience” them without leaving the classroom. Check out <https://vr.google.com/cardboard/> for more information. With the restrictions many districts are facing today, I implore you to “think outside the box,” and try to fill classroom time with experiences even if students are not able to have the experience directly. While virtual reality will not replace the real thing, it may offer a compromise and more opportunities for students to experience the world from a new point of view. Have a great start to the school year!



Keeping in Touch

Ed McDaniels, Retiree SAR

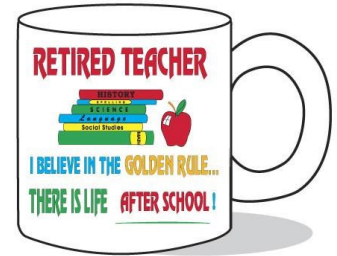
When I retired in 2008, I left the position of Physics SAR and assumed the role of Retiree SAR. I felt it was better for someone still actively teaching to share their insights and tips with the teachers they were “representing.” However, my problem became, “What does a Retiree SAR, share?” That is still my problem. In communication with other Retiree SARs across the state many are still actively going from classroom to classroom sharing their insights and accumulated wisdom from their decades of teaching. As I talk with classroom teachers I am astonished at how much has changed in their daily teaching requirements than when I taught. The amount of record keeping, the need for pretest, post test, Standards, Key Ideas, APPR and accountability for things well beyond the control of the classroom teacher fill their time very differently than when I taught. Sure, I can share how I checked homework and labs but today’s teacher is in a world that I never had to negotiate.

The question then still remains for me, what to write about in these occasional homilies? I want them to be useful, maybe insightful at times. Dare I hope that my odd article may even be inspiring? (Okay, so I’m a dreamer.) Still, what do I share if not the next best teaching tip? It is my hope to share hope. Life does not revolve around your job. There is more to you, your family and the world than just your teaching. I admit that I have done some presentations to colleagues and first graders and remembered how much I loved teaching. Is it enough to go back to work full time or even part time teaching? Sorry but NO. By sharing some of the things that I do and the places I go and the sights I see, I hope to give you the light at the end of the tunnel. It can be that beacon on a depressing Monday morning or at 1 am on Sunday night finishing up test grades due the next day. I know that I am luckier than many and not as lucky as others. Welcome to life!

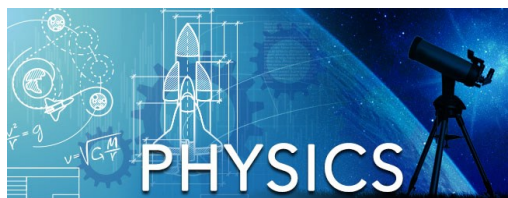
At the end of May, my wife had finished teaching her college course and had graded her last paper and we were off to Arizona. We went to Sedona, Flagstaff and Phoenix. Sedona’s red rocks and Nature’s rock carvings make for

(Continued on page 34)

wondrous sights. Even though it was almost June, the 14,000 ft peaks surrounding Flagstaff still had snow on them. I did make a mistake however. Being retired, time and dates and holidays are not the strict masters they once were. My mistake? We drove to the Grand Canyon on Memorial Day weekend. Okay, so I just forgot that it was a holiday. If it were not for my pill container I would forget what day of the week it was. We ended our sojourn in Phoenix and met with a student my wife and I both had in 1988. We met with his family, second one, and went out to dinner with him, his newest wife and their 1 year old girl. He is very successful and happy. He was a bit of an artistic flake in high school but now he runs a computer graphics business which combines his nerdy tech interests with his artistic flare. We still keep in touch by Facebook and follow each other's lives. What we see in the classroom is an unfinished person. Even thirty years later that journey is unfinished but it is good to see it a little more polished than when he wore graduation robes.



Coincidentally, the editor traveled to the southwest this summer and visited many of the same places described in Ed's article. Above: Saguaro cacti at Cave Creek, near Phoenix. Top right: red sandstones at Sedona. Right: South rim of the Grand Canyon at sunset. Photos by Gary Vorwald.



Opportunities in Scientific Computing

Jaime Rogers Jr., Physics SAR

Recently, I attended a presentation on Scientific Computing which is a program that is underrepresented in our schools, yet poses a real need in our country. Scientific Computing is always at the front line of cutting edge research. The programmers that work in this field are writing programs to meet the needs of scientists that are doing research that has never been done before. Scientific Computing is the collection of tools, techniques and theories that require a computer to solve mathematical models of problems in science and engineering. There is no cookie cutter program that can meet the needs of researchers when their research is new and dynamic.

David Biersach is a technology architect at Brookhaven National Lab. He has been in the field for 35 years and is a veteran who graduated from West Point. Last May, he delivered a presentation to the Physics Master Teachers that was an eye opener. In 2012, Time Magazine reported that the only serious computing class available to most high school students is AP computer science, which focuses on JAVA programming. And even that course was offered at just 10% of American high schools. Since 2005 the number of computer programming courses have decreased.

As we work toward getting our students College and Career ready, computing job growth will increase 50% by 2020. BNL staff noticed that interns coming to them will need a 6-8 week training period before they get to the point where they can be writing the programs on their own. Education is lagging way behind for this need.

BNL is trying to fill this need by offering weekly SCICOMP seminars. BNL staff will come in and train the educator and students in order to do real world Scientific Computing. In order to facilitate this program BNL maintains a cloud based computing system that can be accessed from anywhere. This aspect allows everyone to work on the same powerful platform. During these seminars students will be stimulated with the possibilities of computers, introduced to broad ranges of concepts, and be shown how to build complex "lego blocks" to develop their code. Mathematically they will be introduced to matrices/systems of linear equations, probability, Monte Carlo integration, polynomial root finding, projectile motion, 2D affine transformations, Mesh interpolations and cluster analysis. Computer science concepts cover representations, encodings, random number generations, strings, arrays, operators, loops, functions, recursion, handling combinatorial explosion, big data searching, storing, oblique projection, digital logic circuits, divide/conquer algorithms, runtime complexity, and discrete event simulation.

Listening to this presentation and doing some hands on examples got me really interested and enlightened me about the potential for computer programming careers and needs. I can now direct students who are eager to know what fields they can study for their future toward these opportunities. This is a valid career path that will lead to a job. BNL is holding summer workshops and will come to your school to bring the program there. The whole idea and program seems very worthwhile.

If you have any further questions please contact David Biersach at dbiersach@bnl.gov

BNL offers Summer Explorations Workshops for students in grades 4-12. The Scientific Computing program is just one of these programs. Information is available for last year's programs, and presumably 2017 programs at:

<https://www.bnl.gov/education/program.asp?q=173>

For **Introduction to Scientific Computing** (grades 7-9) visit:

<https://www.bnl.gov/education/static/sse/grades-7-9.asp>

For **Advanced Scientific Computing** (grades 10-12) visit:

<https://www.bnl.gov/education/static/sse/grades-10-12.asp>



Grant Opportunities

Funder: **Amgen Foundation [CA]**

Program: Science Education

Summary: The Foundation is committed to raising the value of science literacy for both students and teachers. In this area, the Foundation seeks to identify programs that provide pivotal hands-on science experiences for students, as well as those that seek to support teacher quality and provide professional development. The Foundation is committed to raising the value of science literacy on a national and local level. The areas given priority consideration within science education are: (1) Teacher quality and professional development in math and science: Comprehensive programs that enhance the quality of math and science teachers entering the classroom, and support teachers with meaningful professional development opportunities that have a positive impact on student achievement. (2) Pivotal hands-on science experience: Support programs that provide students and teachers with opportunities for hands-on, inquiry-based learning experiences that significantly impact students' excitement about science and scientific careers.

Awards: From \$10,000 to multi-million dollar commitments.

Deadline: Open

URL: <http://www.amgen.com/citizenship/foundation.html>



Funder: **RGK Foundation [TX]**

Program: Education. Community. Medicine/Health

Summary: The Foundation awards grants in three broad areas. (1) EDUCATION: The Foundation's primary interests include programs that focus on formal K-12 education (particularly mathematics, science and reading), teacher development, literacy, and higher education. (2) COMMUNITY: The Foundation supports a broad range of human services, community improvement, abuse prevention, and youth development programs. Human service programs of particular interest to the Foundation include children and family services, early childhood development, and parenting education. The Foundation supports a variety of community improvement programs including those that enhance non-profit management and promote philanthropy and voluntarism. Youth development programs supported by the Foundation typically include after-school educational enrichment programs that supplement and enhance formal education systems to increase the chances for successful outcomes in school and life. The Foundation is also interested in programs that attract female and minority students into the fields of mathematics, science, and technology. (3) HEALTH/MEDICINE: The Foundation's current interests include programs that promote the health and well-being of children, programs that promote access to health services, and Foundation-initiated programs focusing on ALS.

Eligibility: Grants are made only to nonprofit organizations certified as tax exempt under Sections 501(c)(3) or 170(c) of the Internal Revenue Code and are classified as "not a private foundation" under Section 509(a). Hospitals, educational institutions, and governmental institutions meeting these requirements are eligible to apply.

Region: There are no geographic restrictions to the Foundation's grantmaking program in the US.

Deadline: Open. There is no deadline for submitting an electronic Letter of Inquiry.

Contact: (512) 474-9298

URL: <http://www.rgkfoundation.org/>

Funder: Toshiba America Foundation

Program: Classroom teaching of science and mathematics

Summary: Our grants fund the projects ideas and materials teachers need to innovate in their math and science classrooms. TAF is interested in funding projects designed by teachers or small teams of teachers for use in their own schools. Our grants support public and nonprofit private schools throughout the United States. Grade K-5 applications are accepted once a year on October 1st. Grade 6-12 applications for \$5,000 or less are accepted on a rolling basis throughout the calendar year. Grant requests of more than \$5,000 are reviewed twice a year. Applications for grants of more than \$5,000 are due February 1st and August 1st each year.

Deadline: Open

Contact: 212-596-0620

URL: <http://www.toshiba.com/taf/>

Funder: Time Warner Cable

Program: Connect a Million Minds

Summary: Non-profit organizations and the hands-on learning opportunities they provide are often the catalyst that sparks a young person's lifelong exploration of science, technology, engineering and math. Time Warner Cable's Connect a Million Minds is always looking for exciting, new organizations we can engage in our efforts. We invite you to apply for support which includes cash grants and in-kind donations. Organizations may apply for cash support, which includes grants, project support, scholarships, etc., or in-kind support. To be eligible, your organization must provide youth (ages 11-18) access to hands-on STEM learning opportunities in after-school settings. Applications will be considered on a rolling basis.

Deadline: Open

URL: [http://](http://www.connectamillionminds.com/request_support.php)

www.connectamillionminds.com/request_support.php

Funder: American Honda Foundation

Program: Youth education

Summary: Funding priorities are youth education, specifically in the areas of science, technology, engineering, mathematics, the environment, job training and literacy. Eligible organizations are nonprofit charitable organizations classified as a 501(c)(3) public charity by the Internal Revenue Service, or a public school district, private/public elementary and secondary schools as listed by the U.S. Department of Education's National Center for Education Statistics (NCES). In addition, qualifying organizations must have a minimum of two years of audited financial statements. Awards range from \$20,000 to \$60,000 over a one-year period.

Deadline: Open

Contact: (310) 781-4090

URL: [http://](http://corporate.honda.com/america/philanthropy.aspx?id=ahf)

corporate.honda.com/america/philanthropy.aspx?id=ahf

STANYS on Facebook & Twitter

Join the hundreds of people who liked Science Teachers Association of New York State (STANYS) on [facebook.com](https://www.facebook.com/Science-Teachers-Association-of-New-York-State-STANYS-367603622203/) and Twitter. Keep up with colleagues from Suffolk County as well as other STANYS sections around the state. Connect with science teachers from around New York State.

<https://www.facebook.com/Science-Teachers-Association-of-New-York-State-STANYS-367603622203/>

<https://twitter.com/stanysorg>

Don't forget to utilize our state website as a resource:

<http://www.stanys.org/>





Science Matters, formerly *Building a Presence* (BaP), is an electronic network initiated by the National Science Teachers Association (NSTA). STANYS is the lead organization in NYS. The purpose of Science Matters/BaP is to reduce isolation of teachers of science, K-16, and to keep them informed about professional development in their region, the state, and nationally. Points of Contact can sign themselves up as PoC's. The Point of Contact for his/her school receives digital information that will then be shared with colleagues. At present, there can be more than one PoC per school. It is important that you be a part of this network to receive

Science Matters to all Teachers and Students!

Nancy Ridenour

information about grant opportunities and professional development.

Please consider being a Point of Contact (PoC) for your school. The success of this network requires all buildings to be represented. Easy step by step directions can be found at:

<http://www.stanys.org/progbap.htm>

The **Science Matters** website is:

<http://bap.nsta.org/Content/Home/BecomeAContact/Default.aspx>

There are three options as a Point of Contact:

a. If you are representing all the teachers of science in your building, be sure to include all the grades, and all science subjects for teachers whom you are representing, not just what you teach.

b. If you are representing a subset of teachers in your building, be sure to include just those grades and subjects of teachers you represent, not just what you teach.

c. If you are representing just yourself, include just the grade(s) and subject(s) that you teach.

Please consider volunteering as a PoC. You will be a great resource for your colleagues and students.

If you have any questions, contact Nancy Ridenour at:

nridenour@twcny.rr.com



Register Now for 2017 Science Olympiad Competitions

Register your school now for the 2017 NYS Science Olympiad tournaments, which will be held this Winter and Spring. There are two divisions, B for middle level and C for High Schools. Teams of 15 students from each school compete in 16-20 events at regional tournaments. The goal of Science Olympiad is to nurture and encourage excitement about science and engineering.

The **Eastern LI Regional Science Olympiad C Division Tournament** will be hosted on January 24, 2017 at Brentwood High School. Thanks to the efforts of Mr. Repetto, the Brentwood coaches, a superb custodial staff, and the generosity of the Brentwood School District, we look forward to another year of their hospitality. We typically have around 50 teams from 25 Suffolk schools competing. Teams of up to 15 students competed in a wide range of science and technology events. Teams worked solving problems on disease, cell biology, forensics, green generation, it's about time, astronomy, dynamic planet, fossils, protein modeling, game on, chemistry lab, anatomy, and invasive species. Our engineers constructed and tested robot arms, air trajectory, bridges, electric vehicles and air planes. The schools with the top scoring teams will be invited to compete at the state level competition on March 10-11 in Syracuse.

Continued on next page

SCIENCE on LONG ISLAND

Join the Suffolk STANYS Section Now!

MAKE A DIFFERENCE

There Couldn't be a Better Time to be a STANYS Member!

STANYS MEMBERSHIP helps us to be the best science teachers we can be. If you are not yet a member or if your membership has lapsed, please join and become part of New York's oldest and most respected professional association of science educators!

STANYS supports its membership through: Networking, Friendships, and Collaboration; Professional Development Workshops; STANYS' Annual State Conference; Updates on what is Happening in Education throughout the State; State Science Congress and Science Olympiad Information; Access to the STANYS DALs and SARs; The STANYS Newsletter; E-Blasts; The Science Teachers Bulletin; Section Meetings and Updates; and Opportunities for Leadership

Your membership in STANYS
INCLUDES membership in the **Suffolk Section**

Suffolk Section publishes several newsletters each year. Each issue includes SAR articles disseminating current information in each discipline, a Chairperson's report which addresses state updates and other issues in science education, details about local science contests, workshops, and field trips, and other items of interest *specifically to Long Island educators.*

Suffolk Section provides Conferences and Workshops throughout the year, offering information *directly pertaining to teaching on Long Island*, presented by local experts -- classroom teachers just like you! These gatherings provide opportunities to learn more about your discipline, get information about local activities, and provide the chance for networking with colleagues. Lab activities, innovative teaching strategies and demonstrations are just part of what's offered!

Suffolk Section offers Professional Development Hours close to home, and *directly related to teaching on Long Island.*

Suffolk Section holds an Awards Dinner each May honoring outstanding **Suffolk County** high school seniors and exemplary teachers.

Suffolk Section provides Local Leadership Opportunities and the chance to share experiences with your colleagues *in districts throughout Suffolk.* You have an open invitation to each monthly Section planning meeting.

(Science Olympiad Continued from page 38)

The B Division Tournament will tentatively be held on March 4, 2017 at Candlewood Middle School.

For a complete list of events, tournament schedules, as well as registration information, visit the **New York State Science Olympiad** webpage:

<http://newyorkscioly.org>

**But most importantly, Suffolk Section STANYS provides us,
as Long Island's Premier Science Educators,
the Opportunity to Make a Difference in Education in Suffolk County!**

The Suffolk Section of STANYS is your professional organization - JOIN US TODAY!

Use the membership form on the next page or join electronically using the form at the

STANYS website: <http://www.stanys.org>

For more information, email Sheilah Schumann, Vice-Chairperson, Membership at:

sheilah_s@yahoo.com

Suffolk STANYS Meetings

Join us for our monthly meetings.

2016-17 Dates:

Thursday, October 6

Wednesday, November 2

Thursday, December 1

Thursday February 2

Thursday, March 2

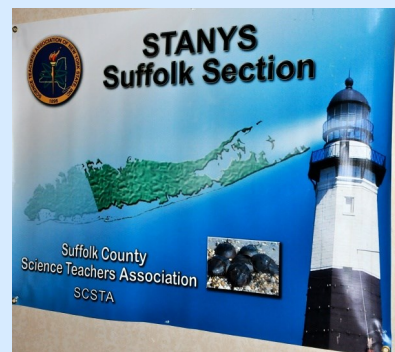
Thursday, April 6

Thursday, May 4

Thursday, June 1

*Meetings are at 7:00 p.m. at
BOCES II on Deer Park Ave.,
Dix Hills*

Website Has New Format!



Visit our Suffolk STANYS website at www.SuffolkSTANYS.org. It is a great resource for up-to-date information about scheduled meetings, trips, and events. You will also get access to suggested links separated by subject area as well as contests your students may be interested in.

Several of our past newsletters, minutes, and pictures of our events are available on the website. Thank you to Melissa Torre for managing the website for the last few years, and to Matt Christiansen for re-designing the site. We hope you enjoy it and find it useful.

Don't forget to utilize our state website as a resource:

<http://www.stanys.org/>



STANYS SCIENCE TEACHERS
ASSOCIATION OF
NEW YORK STATE

**MEMBERSHIP FORM
(PLEASE PRINT)**

Date _____

New _____ Renewal _____ STANYS ID (If known) _____

Name _____

Street Address _____

City _____ State _____ Zip _____

Home Phone (_____) _____

School/Organization _____

Street Address _____

City _____ State _____ Zip _____

School/Organization Phone (_____) _____

Preferred Email _____

Subjects taught or position _____

Last year of membership _____

Section to which you wish to belong : **SUFFOLK**

Dues*	Check One	
	1-YEAR	2-YEAR
Elementary	<input type="radio"/> \$44.00	<input type="radio"/> \$82.00
Intermediate/Jr. HS	<input type="radio"/> \$44.00	<input type="radio"/> \$82.00
High School	<input type="radio"/> \$44.00	<input type="radio"/> \$82.00
College	<input type="radio"/> \$44.00	<input type="radio"/> \$82.00
Associate	<input type="radio"/> \$44.00	<input type="radio"/> \$82.00
Retired	<input type="radio"/> \$23.00	<input type="radio"/> \$42.00

Free Student Membership

Enrollment in a teacher preparation program is required. A letter on institutional letterhead by a college faculty member or a cooperating teacher verifying the student's eligibility must accompany this application annually.

**Enclosed is my tax-deductible contribution of \$ _____

to: STANYS Foundation

Fellows Conference Award

*Membership dues are not refundable.

**STANYS DOES NOT ACCEPT
PURCHASE ORDERS**

PAYMENT OPTIONS

- CHECK - Payable to **STANYS**
- VISA MasterCard

Print Cardholder's Name _____

Card Number _____ Exp. Date _____ CW2 Code _____

Membership \$ _____

Contribution \$ _____

Total \$ _____

Cardholder's Signature _____

Mail to:

**STANYS
PO Box 2121
Liverpool, NY 13089-2121**

Phone: (516) 783-5432
Email: info@stanys.org