

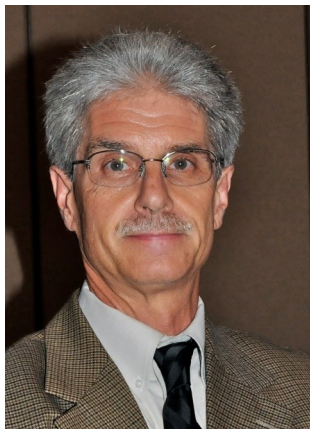


The Science Explorer

Suffolk Section: Science Teachers Association of New York State

Volume 44	Number 1	Fall 2015
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The Chairperson's Corner



Welcome to another school year and with it the opportunity to start fresh with new students and a chance to incorporate different strategies for learning. I was thrilled so many teachers came out to our SciTech 2015 Conference Monday 9/28. It shows me that many of you are eager to be updated and learn the latest use of educational technology. Unfortunately, many in our educational community are feeling the pressures of the latest versions the Annual Professional Performance Review (APPR) and the high stakes testing fueling a statewide opt out movement. This is a distraction to the excellent teaching and learning that occurs in our science classrooms. We need to focus on the best teaching practices that enhance student learning. On that note, I strongly recommend the book I read this summer, *Make It Stick*:

Glen Cochrane *The Science of Successful Learning* by Brown, Roediger, and McDaniel. It is a research based review with real life examples of what is known about how we learn with retention and how we don't. The cognitive science cited will help you understand the science behind the success and failure of some of the strategies we've used in our teaching.

What is the latest on the possible changes in science education in New York State? The NYS Board of Regents approved the Statewide Strategic Plan for Science during its January 2015 meeting. The plan provides objectives and activities for reform in NYS science standards, curriculum, assessment, professional development, materials support, and administrative and community support. We are currently in the phase of developing a New York State Version of the Next Generation Science Standards (NGSS).

During spring 2015, STANYS, other professional science teaching organizations, district science departments, and individual teachers reviewed the NGSS and made comments regarding concepts and content they thought should be considered in a NY version of NGSS. This summer four teams of Educational Specialists representing Life Science, Earth and Space Science, Chemistry, and Physics, were invited to take part in creating a preliminary draft of the NY version of NGSS. Each team had experienced teachers representing elementary, middle and high school levels. I was honored to be invited to work on the Life Science topics. We reviewed the comments made during the spring reviews and used them to develop a draft of the NY version of NGSS. The architecture of NGSS with Performance Expectations, Science and Engineering Practices, Disciplinary Core Ideas, and Cross Cutting Concepts was maintained but it was modified to address the concepts and content NY teachers felt should be included.

It is important to remember we were working on a document that represents relatively broad standards that are for all students and not the details of curriculum or assessment in this phase of the process. In August, the Science Education Steering Committee (SESC) reviewed the draft standards developed by the teams of Educational Specialists. Comments made by the SESC were incorporated into the draft standards. In September, Standards Writers selected from the application process met to continue the review of the draft standards. Their comments will also

Dates of Interest:

- STANYS 120th Annual Conference - Rochester: November 6-9, 2015
- Eastern LI Regional Science Olympiad Tournaments:
C Division Jan 30, 2016
B Division Feb 27, 2016
- LISEF—Feb 3, 2016 & March 10, 2016
- Long Island Science Congress — St. Anthony's HS, Huntington Station April 12-13, 2016
- Suffolk STANYS Spring Conference—Brookhaven Lab April 1, 2016
- Annual Awards Dinner: May 18, 2016

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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.

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Chairperson's Corner (continued from page 1)

be incorporated into the draft standards. After the review with modifications by these three groups, the plan is to have the draft NY version of NGSS available for public survey later this Fall. There will be a survey of teachers in the field in December.

Science organizations with conferences, workshops, online resources, webinars, etc. have a big role in helping these new standards "come to life".

It is exciting news that we are moving toward a revision of the New York science standards. These standards will encourage teaching and learning practices more in line with research based strategies for student learning. It is important to recognize the development and adoption of new science standards as one of the six steps of the Strategic Plan. Curriculum, assessment, professional development, materials support, and administrative and community support are also important components that need to be part of the process.

Science organizations with conferences, workshops, online resources, webinars, etc. have a big role in helping these new standards "come to life". It will take time and patience but if done with support, these standards will guide NY science education and prepare our students for the challenges of their future.

I wish you all a wonderful start to the school year and we at Suffolk STANYS look forward to offering programs that may be of interest to science educators.

Spring into Science

April 1, 2016

Call for Presenters!!**Joe Malave****Conference Chair**jmalave@montaukschool.org

If you attended our conferences within the past year, you have had the opportunity to meet colleagues from other districts and engage in quality professional development. Our next Conference will be on April 1, 2016 at Brookhaven National Lab. We are also looking for people to present at our conferences. If you have interest in sharing an aspect of your craft as a science or STEM teacher, we would love to see a proposal for a workshop. Please send proposals to me at the above address.

I want to personally thank all those that attended last Spring's conference. We had a record attendance, and had much positive feedback. As the new chairperson of the Spring Conference, I worked to put together a diverse group of workshops. The *Office of Educational Programming* at Brookhaven National Lab was an invaluable resource, as well as several Suffolk STANYS Board members. I wish to thank all of the presenters for their outstanding workshops; the feedback was very positive. Finally, I would like to thank Dr. David Krause for the highly praised talk on his paleontological work in Madagascar, and how it led him on a mission to help the impoverished children of that region with the formation of the Ankisy Fund. "Ankisy" means children in Malagasy.

Here's to another great Spring Conference in 2016!



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

Outstanding High School Seniors and Teachers of the Year Recognized at the 2014-15 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 27 high schools recognized their outstanding seniors at the dinner which was held on May 20th 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	Invited Teacher
Bayport-Bluepoint	Patrick Liu	Steven Roach
Cold Spring Harbor	Christine Collins	Robert Colascione
Commack	Scott Massa	Lorraine Solomon
Connetquot	Austin Bates	Brenda Foley
Deer Park	Aaron Zhang	Brian Kruger
East Islip	Derek Dattero	Kathleen Dinota
Half Hollow Hills East	Benjamin Edwards	Dr. Michael Lake
Half Hollow Hills West	Rose Bender	Charles Bartolotta
Harborfields	Alisa Chang	Michael Pinto
Hauppauge	Luke Farrell	Jocelyn Pendelton
Islip	Trevor Uher	Matthew Christiansen
John Glenn	Noah Charles Yoskowitz	Arnold Kumhi
Mount Sinai	Seth Brand	Roger Cardo
Rocky Point	Aijia Feng	Jeffrey Spahn
Sayville	Nicholas Cowan	Maria Brown
Smithtown High School East	Brian Righter	Maria Zeitlin
Smithtown High School West	Samantha DeRosa	Joanne Figueredo
Ward Melville	Sapna Nath	George Baldo

School	Student
Brentwood (Ross)	Maham Naviwala
Brentwood (Sonderling)	Sarah Wong
Earl L. Vandermeulen	Noah Davis
East Hampton	Cameron DiGate
Longwood	Dennis Grant
North Babylon	Matthew McGovern
West Islip	Daniel Kelly
Westhampton Beach	Harshil Mehta
William Floyd	Jennifer McDermott

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

Pictured below are scenes from the Awards Dinner. Outstanding Science Seniors invited a teacher who made a significant contribution to their science education. Outstanding science educators were also recognized.

Below right: Brian Vorwald, Co-Chair of the



Suffolk STANYS Teacher Awards Program

Each year at the dinner, teachers are recognized for their dedication and service as science educators. Awards in 2015 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 awards 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. Each has been highlighted below and on the following pages.



Elementary School Level Science Teacher of the Year

Susan Rosner

Burr Intermediate School, Commack Union Free School District

Susan Rosner is a fifth grade teacher at Burr Intermediate School in the Commack school district. A strategy Mrs. Rosner employs to engage her students so that they feel like scientists is to have them wear a white shirt, courtesy of their fathers, as a lab coat along with name badges such as "Dr." or "professor." But, this isn't the most important strategy she uses to have her students learn science and become life-long learners. Mrs. Rosner's lessons are infused with the scientific method and engineering design and provide her students with the opportunity to explore science in a hands-on inquiry fashion while integrating literacy and mathematics.

Susan has been active outside of the classroom and her activities have included serving as the school's science fair coordinator, being the cooperating teacher for student teachers, hosting student observers, and participating in the Brookhaven National Lab Elementary Science Fair as a judge. Since 2010 she has been a Curriculum Development Leader, assisting with the writing and implementation of science curricula throughout the district's elementary schools. Susan served as a key facilitator of the schools Science Collegial Circle and has assisted students in developing web-based resources to use as they prepared for the school's Science Fair.

Mrs. Rosner was awarded scholarships from Honeywell Corporation to Teacher Space Camp and Advanced Camp at the U.S. Space And Rocket Center in Huntsville, Alabama and Cape Canaveral, Florida. Her experiences in simulated space shuttle and International Space Station missions provided her with the background and knowledge to bring this real life learning experience to her students.

In addition to integrating rocketry into her curriculum, along with her students, Susan constructed an interactive 20 foot Space Shuttle replica, transforming the gym into an interactive museum.

Susan's participation in professional development has included attending the Real World and Math Elementary Teacher Workshop at the Stony Brook University Center for Science and Mathematics Education, the Mickelson



Susan Rosner

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Exxon Mobil Teacher Academy: STEM at the Liberty Science Center and participating in an authentic Dinosaur Dig Paleontology Experience in the North Dakota Badlands. All of these experiences have contributed to her curriculum development and the dinosaur dig provided her with the background to create a sandpit with buried artifacts so that her students can learn the methodology of a dig.

Director of Science K-12 Alison Offerman-Celentano wrote in her letter of support that, "...Mrs. Rosner is a teacher with integrity who has an unwavering commitment to excellence in science education not only for her students, but all of the students on the grade level." And, principal Paul K. Schmelter wrote that Mrs. Rosner has a clear passion for the subject, a passion which students and colleagues find contagious..." and that, "...she regularly attends local science workshops and staff development opportunities, constantly working to hone her skills and expand her professional skills."

Middle School Level Science Teacher of the Year

Rochelle Petre

James Wilson Young Middle School, Bayport-Blue Point U.F.S.D.

Rochelle Petre is a sixth grade teacher at James Wilson Young Middle School where she teaches science, reading, and ELA. An innovative teacher, Rochelle bases her instruction on integrating her students' interests with the NY State Science Standards. She engages her students in lab activities by having them work in cooperative groups to maximize participation and to approach problems using methods of inquiry. She emphasizes having her students learn how to speak and listen to one another, developing basic life skills that facilitate them becoming independent learners and being college and career ready.

Rochelle is a teacher leader, mentoring teachers in her building and throughout the district. She has provided mentoring and assistance to new teachers in her building and to the other fifth grade teachers. Her colleagues were in agreement that they've benefitted from Rochelle's enthusiasm in sharing her ideas and collaboration on new instructional approaches. She was the chair and coordinator for the district's Next Generation Science Standards district review team which worked to respond to the first public draft of the NGSS. Rochelle is involved in many other district activities, including the middle school orientation programs, judging the three elementary school science fairs and working with the Annual Student Educational Enrichment and Development Foundation Science K-12 Science Quest.



Rochelle Petre with Principal Robert Hass

Rochelle has continued to grow as a teacher, participating in many professional growth programs, including serving as a co-presenter at a National Board Certified, NEA and AFT sponsored Teaching and Learning Conference. Her professional activities outside of the school district have also included serving as co-chair of NYSUT's statewide math, science and technology subject area committee and the AFT's NGSS National Teacher Review Team.

In his letter of support, middle school principal Robert E. Hass stated that Rochelle, "...has dedicated her entire career to teaching children and more specifically, teaching science." Her colleague Jennifer Pedersen wrote that, "Mrs. Petre's greatest contribution is the enthusiasm she brings to her content area..." and that she "...sets a high standard for students, colleagues, and herself."

High School Level Science Teacher of the Year

Wayne Mennecke

Islip High School, Islip U.F.S.D

Wayne Mennecke currently teaches AP Biology, Biochemistry and Physiology, and Marine Biology at Islip High School. He has previously taught regents Living Environment, regents Chemistry, research and ecology. An innovative teacher, Wayne integrates an interactive approach to learning with his students and emphasizes hands-on learning. He has piloted a program for bringing laptops into the classroom and for implementation of SmartBoards, for which he also served as a teacher trainer. He helped create an app that allows teachers to assign their students digital questions from textbooks or works of fiction and non-fiction as an e-reader.

Mr. Mennecke has received several grants, including a grant from the Norcross Wildlife Foundation, The Home Depot Youth Garden Grant, Lowe's Toolbox for Education Grant, and Cornell University Department of Ornithology. In addition to his teaching responsibilities, Wayne has coached the Science Olympiad Team, developed lab manuals for various biology courses, and is a faculty advisor for the Keep Islip Clean (KIC) Club. Outside of his district, Wayne has served as a judge for the Long Island Science Congress and is an instructor in the Stony Brook University's Center for Math and Science Education/CESAME ninth grade Science Exploration Camp summer program. He's a member of several professional associations in addition to STANYS, including the National Science Teachers Association, the NY State Marine Education Association, Seatuck Environmental Association and serves as a member of the New York Institute of Technology Intercounty Teacher Resource Center Policy Board. He has assisted in prospecting, excavating and preserving Cretaceous turtle, mammal and dinosaur fossils of the Hell Creek Formation in Montana and North Dakota as a research assistant with the Marmarth Research Foundation. Wayne is a published poet, writing poetry based on experiences based on his work in paleontology and other personal experiences.

He's shared his poems with his students, particularly those related to the fossil digs when he teaches evolution.

Several students in their letters of support for Wayne's nomination for the award cited a common theme that Wayne is inspiring, engaging, and is a master teacher. Islip High School Chairperson of Science and Business, Matthew Christiansen, wrote in his letter of support that Wayne has, "...inspired countless students to pursue college studies in biology and environmental science." He further stated that Wayne's "...knowledge and enthusiasm of science is contagious to his students and colleagues. He always is willing to provide a helping hand and is completely invested in the student body at Islip High School."



Islip HS Chairperson Matthew Christiansen presents High School Teacher of the Year Award to Wayne Mennecke

STANYS Suffolk Section Service Awards

Matthew Christiansen, Islip Middle School

Joseph Malave, Montauk School

Matthew Christiansen and Joseph Malave received service awards for their meritorious service to the Suffolk STANYS section.



Joseph Malave, who teaches at Montauk Public School, received the **STANYS Service Award**, an award provided by STANYS for service to the local section. Joe, as chairperson of our Spring Conference, provided the leadership and guidance which were instrumental to the overwhelming success of the event.

Matthew Christiansen was the recipient of the **Suffolk STANYS Section Service Award**. Matt is science chairperson at Islip High School and as webmaster of the Suffolk STANYS website, redesigned the site which was launched at the end of May.



SciTech Fall Conference a Huge Success with 170 Participants!

Matt Christiansen
Conference-Co Chair



Keynote speaker Paul Andersen

Suffolk STANYS hosted its first annual Fall Conference at the Huntington Hilton on September 28th. The **SciTech Conference**, whose focus was the integration of technology into classroom classrooms, was attended by more than 170 teachers and administrators from Long Island and the rest of the state.

Over coffee and a light breakfast, STANYS President-Elect and Suffolk Chairperson Glen Cochrane offered the conference attendees an update on the New York adaptation of the Next Generation Science Standards (NGSS). Check out the Chair's message for these highlights!

Paul Andersen, creator of Bozeman Science, offered teachers pointed advice on how to design a 21st century science classroom to be what the teacher wants and needs, as opposed to what we, as teachers, feel that we are forced to do. Paul also discussed the need to help the people students learn how to learn, not just to learn the science subject matter. In addition, he stressed that technology is a facilitative tool for educators and is not meant to be the replacement of the teacher. For more information on Paul Andersen's work or to view his video gallery, please visit his website at www.bozemanscience.com.

Through the remainder of the morning, the conference attendees heard from presenters on a range of topics, including integrating technology with nature education, *Google Apps in Science*, and flipped classrooms using *EdPuzzle* and *Curriculet*. Paul Andersen and David Knuffke also moderated a live recording of their podcast **Horizontal Transfer**. The entire podcast focused on Next Generation Science Standards (NGSS) in New York State can be found on their website at www.horizontaltransfer.com. Some SciTech teachers even had the amazing opportunity to use cell phone technology with a birding app to tour the Sustainable Garden at Farmingdale State College. Finally, after lunch, the teachers and administrators broke into smaller "un-conference" sessions, where participants were able to discuss the topics of the morning workshops and other items, such as science research sharing opportunities through LICORE, using Remind for parental and student communication, and the perks and pitfalls of flipped instruction.



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Above: SciTech Planning Committee: Ashley Bloch, Matt Christiansen, Jean Ann Crespo (Kohn) and Sonja Anderson.

Right: Chairperson Glen Cochrane. Peter Guastella, Sonja Andersen, Jean Ann Crespo, and Joe Malave helped with the event.



(Continued from page 10)

The “un-conference” session also provided an opportunity for the participants to visit with over twenty vendors in attendance and to discuss their various products and services.

The Conference Committee would like to thank our conference sponsor, Molloy College, for their support. In addition, we would like to thank the many individuals who volunteered their time to offer the great morning workshops that allowed the conference to be a tremendous success. We are looking forward to seeing more NYS science teachers at our annual Spring Conference at Brookhaven National Labs on April 1, 2016. Please check out the section website for more information as it becomes available.



Scenes of teachers participating, networking, and enjoying the SciTech Conference.

Opportunities for Teachers & Students



The Albert Einstein Distinguished Educator Fellowship (AEF) Program now accepting applications for the 2016-2017 Fellowship Year!

The AEF Program provides a unique opportunity for accomplished K-12 educators in the fields of science, technology, engineering, and mathematics (STEM) to serve in the national education arena. Fellows spend 11 months working in a Federal agency or U.S. Congressional office, bringing their extensive classroom knowledge and experience to STEM education program and/or education policy efforts.

Program applications are due November 19, 2015, 8:00pm EST, and must be submitted through an online application system.

To be eligible, applicants must be U.S. citizens, employed full-time in a U.S. public or private elementary or secondary school or school district, and must have taught full-time in a public or private elementary or secondary school for at least five of the last seven years in a STEM discipline.

Current sponsoring agencies include, but may not be limited to, the Department of Energy (DOE), the National Science Foundation (NSF), and the National Aeronautics and Space Administration (NASA). The DOE also sponsors up to four placements in U.S. Congressional offices.

The AEF Program is managed by the DOE Office of Science, Office of Workforce Development for Teachers and Scientists, in collaboration with the Oak Ridge Institute for Science and Education.

Information about the Albert Einstein Distinguished Educator Fellowship Program, including eligibility requirements, program benefits, application requirements, and access to the online application system can be found at

<http://science.energy.gov/wdts/einstein/>.

The Department of Energy, Office of Science

Albert Einstein Distinguished Educator Fellowship Program

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CESAME Programs for Students

The *Center for Science and Mathematics Education (CESAME)* 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.

CESAME has programs for middle school students as well as programs designed for each of the 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. Visit our website for more details about these programs.

Earth Science Laboratories For Your Students at Stony Brook University

Geoscience Teaching Laboratories for middle and high school students are also available. Earth Science teachers Steve Dickson and Chris Marotta offer programs that give students hands-on learning experience in surveying topography, measuring weather variables and determining microclimates, measuring porosity and permeability, and modeling real world processes on a stream table. They also offer a Long Island geology field



trip to Caumsett State Park in Huntington. Some of these programs can be performed at your school. Through the NSF sponsored GeoPREP program at Stony Brook University, these programs can be provided free to students at high-needs schools.

More information is available at:

www.stonybrook.edu/cesame/students/ScienceTeachingCenter/geoscienceteachingcenter.shtml

More information about all of the programs can be found on the CESAME website:

www.stonybrook.edu/cesame

If you should have questions about any aspect of the program, please contact Judy Nimmo or Debra Pelio cesame@stonybrook.edu or 631-632-9750.



CESAME provides opportunities for students to work in state-of-the-art labs at Stony Brook University, or experience natural history in the field. Pictured are students conducting labs (left and top picture) and the cliffs at Caumsett State Park (above) where students learn the geology of Long Island.

Professional Development Opportunities

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 Spring Session 1 & 2 courses. The courses can be taken for up to 4 graduate credits each and run from January 25 - March 6 and March 14 - April 24, 2016, respectively. Courses offered in Spring Session 1 include: Ocean System, Solar System, Climate Change, Earth Inside Out, Diversity of Fishes, and Evolution.

You can sign up now at learn.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/>



Suffolk STANYS Awards Dinner; teacher presents award to her school's outstanding senior science student.



Informed by Nature is non-profit organization working to advance the public understanding of science. We are dedicated to encouraging lifelong learning, promoting critical thinking, and celebrating

science, technology, engineering, and mathematics (STEM) disciplines. Our efforts expand from online learning and networking to physical outreach in the classroom and other educational venues.

We are excited to launch our Online Science Fair <http://www.informedbynature.org/science-fair-projects/>. Unlike most other such endeavors, our platform offers students the ability to upload, share, and store their projects for years to come. We are also working with educators to help them develop programs around the platform that encourage hands-on, self-guided learning among their students. The integrated social media functionality encourages students to share their work with peers, family, and even future college admissions boards, highlight-

ing their scientific prowess and building pride in their work. This is available for **free** to anyone with an Internet connection, though we are limiting this phase to students age 13 and over because of COPPA guidelines.

Online Science Fair helps you:

- Engage your students in science learning and discovery
- Organize, review, and present student projects
- Enable students to share their work with friends and family
- Encourage students to promote themselves and their work through social media
- Provide opportunities for networking with and learning from their peers
- Support the future! Projects remain live for years to promote the achievements of the present and inspire the projects of the future
- Help students have fun with science!

Brookhaven Lab Open Space Stewardship Program

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.



William Sun, a student from Paul J. Gelinus JHS tested the water quality of the Setauket Mill pond as part of the Open Space Stewardship Program.



Calling All Teachers:

Registration Now Open for Toshiba/NSTA ExploraVision Program

Registration for the 24th 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 1, 2016**.

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 24th anniversary, the top 24 teachers who submit 24 eligible online entries will receive a Toshiba tablet.

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/>



TELL YOUR CLASSROOM'S SCIENCE STORY!

The Elementary Division of The DuPont Challenge returns for its second year, giving young students across North America a chance to show their creativity and passion for science through a classroom science writing competition.

Teachers, please be sure to read through the [Challenge guidelines](#) for your grade level(s)! We have updated the project options and rules to continue improving on the STEM exploration experience.



The DuPont Challenge
Elementary Division
Grades K-5

thechallenge.dupont.com/elementary



Watch our video with "Science Is Fun Day" highlights!

MORE THAN \$50,000 IN AWARDS!

When Students Win... Teachers Win Too!



- "Science Is Fun Day" at winning schools
- Expenses-paid trip to 2017 NSTA National Conference for teachers
- Reference media and other student prizes

IMPORTANT DATES

Entry Period Begins:
November 1, 2015

Entry Deadline:
March 1, 2016



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

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

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



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Kathy Arminio, *Director*
karminio@monroe2boces.org

Alan Alda's Flame Challenge Ignites Curiosity for Science

Alan Alda, a founding member of the **Alan Alda Center for Communicating Science**, started the **Flame Challenge** in 2012 to have scientists answer the question, "What is a Flame?," in a way that resonated with 11-year-old students. Last year, 20,000 students from around the world voted on hundreds of entries to find ones that best answered the question, "What is sleep?"

The Flame Challenge, an annual contest held by the *Alda Center*, works to ignite excitement and a lifelong curiosity for science in children. "I came up with this contest as a fun challenge for scientists to explain a complex thing like a flame in a way that would make it clear to an 11-year-old," said Alan Alda, an actor, writer and visiting professor in Stony Brook University's School of Journalism. "The idea was to urge scientists to communicate more clearly. I didn't realize what an extraordinary learning experience it was going to be for the 11-year-olds. By now, tens of thousands of kids from all over the world have excitedly delved into the mysteries of nature as they've judged the scientists' entries."



Photo 1: Students show enthusiasm for the Flame Challenge

The mission of the *Alda Center*, located in Stony Brook University's School of Journalism, is to help scientists communicate more effectively with the public. The Center gives innovative science communication courses for graduate and undergraduate science students and conducts workshops around the country. The **Flame Challenge** is designed to help scientists explain difficult subjects in an interesting and informative way.

In the challenge, students vote on a science question, which scientists around the world answer in a written or video format to help the students understand the question. Then, the entries are screened for scientific accuracy and sent to thousands of fifth and sixth grade students in registered schools around the world to be judged.

"My fifth grade class last year had such a wonderful experience with the **Flame Challenge**," said Michelle A. Miller, a sixth grade science teacher at Selden Middle School. "...My students were invested in the results and were so excited that many of them picked the video winner. The repetition of the reading and video pieces was also an excellent learning tool and offered us an authentic reason to do close reading."



Photo 2: Students vote for their favorite Flame Challenge answer.

Students vote for the six finalists' entries. Then, students vote for the top written and top video responses out of the six entries. At the *Worldwide Assembly*, held every year in April, 10 schools from around the world talk with Alan Alda in a live video conference to discuss the finalists' answers.

"The students really enjoy seeing any of the entries they judged in the finals," said Willie Schmidt, a teacher from the Laurel Hill School in East Setauket. "They always enjoy all the responses and actually learn about the "question" while reading the responses and watching the videos." Andrea Miller, a teacher from Beach Street Middle School in West Islip, said it was difficult to have all of her students in three sections complete the readings and videos in last year's challenge. "I would advise people that if they have three sections to

(Continued on page 20)

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break the material up into a few days instead of one or two," Miller said.

Taking part in the **Flame Challenge** is a wonderful way for 5th and 6th grade students to learn about evaluating scientific theories, as well as encourage their natural curiosity. Register your classes to be judges this year at flamechallenge.org. This year's **Flame Challenge** question will be announced in November. The winning entries are announced at the World Science Festival, held every year in New York City.

The **Flame Challenge's** sponsors are major nonprofit scientific societies. The *American Chemical Society* is chartered by the U.S. Congress and is a global leader in providing access to chemistry-related research. The *American Association for the Advancement of Science* is the world's largest multidisciplinary scientific society and publisher of the weekly global science journal, *Science*.

Register for this year's flame challenge at:

<http://www.centerforcommunicatingscience.org/the-flame-challenge-2/school-form/>

Over 1,700 Students Participate in Scientific Studies of Four of Long Island's Watersheds

Melissa Griffiths Parrott
Education & Outreach Coordinator
Central Pine Barrens Joint Planning and Policy Commission

A Day in the Life



The Day in the Life Program is designed to celebrate the river and estuary ecosystems and educate participants on the uniqueness of Long Island's New York State-designated *Wild and Scenic Recreational Rivers*. This year, 2000 students from 40 schools simultaneously collected scientific data, analyzed it and shared it to portray

the status of river and estuary ecosystems during a "*Day in the Life of the Carmans River/Connetquot River/Peconic Estuary/Nissequogue River*." On a single day, environmental education partners and students all along each river simultaneously collected scientific data, analyzed it and shared it to portray the status of the river and estuary ecosystem. Students used hands-on field techniques to describe their sites, catch fish in nets, collect water and invertebrate samples, develop a biodiversity inventory of the riparian zone and analyze water chemistry. Students examined the physical and chemical aspects of each river, such as where freshwater and salty seawater meet, the amount of sediments in the water and turbidity and oxygen levels, as well as conducted biodiversity inventories of the flora and fauna in and around the ecosystems. All data collected on these "Day's" is being posted on the Portal to Discovery website at: <http://www.portaltodiscovery.org/aday/>

The goal of the program is to help students develop an appreciation for and knowledge of Long Island's river and estuary ecosystems, to collect useful scientific data in regard to the status of associated surface waters and to allow students to become stewards of water quality and natural resources. As water quality continues to face challenges across Long Island, protecting and restoring our aquatic ecosystems has become a top priority throughout the region. In order to tackle our water issues we need to inspire younger generations as well. This innovative program does not only get students out to local water-based ecosystems to discover hands-on science techniques, the program provides a unique learning system that allows students to step back and see a larger picture as multiple sampling sites are studied at the same time by different classes throughout each watershed and data is shared among all of them.

The Day in the Life of the Nissequogue River, the 2nd of the four events, took place on Friday, October 9th, 2015.

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Students and teachers from 10 schools engaged in hands-on science exploration of the Nissequogue River. Students donned waders and pulled nets called “seines” through the water, measured tidal range, and current velocity and direction. It is hoped that this program will develop enthusiasm for learning more about fish and other aquatic life. Participating classes came from Smithtown, Brentwood, Three Village, Sachem, Kings Park, and Northport School Districts as well as the Stony Brook School and Harbor Country Day School.

The annual event was coordinated by the Central Pine Barrens Commission, Brookhaven National Laboratory's Portal to Discovery, New York State Department of Environmental Conservation (DEC) and Suffolk County Water Authority (SCWA), with over 30 partner organizations and agencies. A total of 47 experts volunteered their time to assist the students collect and analyze the data. The following educational partners were teamed with the school classes along all three Rivers and the Estuary to create a day-in-the-life picture of the ecosystems from headwaters to mouth: Trout Unlimited, Cornell Cooperative Extension, NY State Parks, United States Geologic Survey (USGS), Wertheim National Wildlife Refuge, Peconic Estuary Program, Group for the East End, Long Island Aquarium, Long Island Science Center, Sweetbriar Nature Center, Long Island Sound Study, NY Sea Grant, East Hampton Shellfish Hatchery, The Nature Conservancy, Girl Scouts of Suffolk County, the Brook trout Coalition, and the South Fork Natural History Museum and Nature Store. This program promotes citizen science and we thank all the partners, and schools for their participation.

The program will take place again in the Fall of 2016. Schools are encouraged to contact me for more information on how to get your classes and students involved: Melissa.Parrott@SCWA.com 631-218-1177



Editor's note: My 7th and 8th grade Science Research class from Paul J. Gelinas JHS participated in the “Day in the Life of the Nissequogue River” on October 9th. Pictured are my students who studied the mouth of the river at Short Beach on Long Island Sound in St James, Smithtown.

- Gary Vorwald



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 Oneonta on July 20-22, 2016. 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 2nd Geologic Field Conference held last July at Fire Island National Seashore.





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 (blue, green, orange) behind it. Below the logo is the text 'American Association of Chemistry Teachers'. To the right 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.

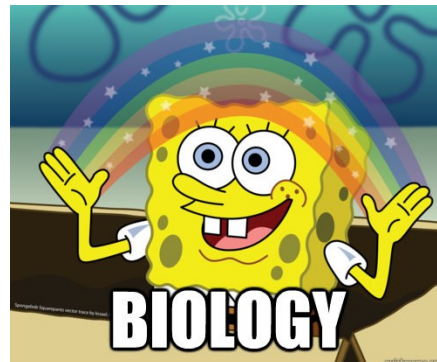
<https://www.teachchemistry.org/content/aact/en.html>

Subject Area Representative (SAR) Reports

Write With Us In The New Year

David Knuffke, Biology SAR

Last year, I was fortunate to be able to participate in a national science teacher writing project. Science teachers from across the country selected a mutual topic ("What is the Value of Letting Students Struggle in the Science Classroom?" and each wrote a brief essay). The collected essays were published at "Unity & Diversity" (<http://unitydiversity.org>), a new online space for science teacher writing. This year, the cycle is repeating. Teachers who are interested in participating can suggest a topic on the website, and selection will take place by voting in the second half of September. Once a topic is selected, any science teacher who wants to participate will have until January 1st, 2016 to write and submit their essay.



If you are a science teacher (having taught at least one K-12 science class in the past three years), I hope you'll consider joining us for this year's writing cycle. To get more information on the project, and be notified of future updates, feel free to join the "Unity & Diversity" mailing list at <http://www.unitydiversity.org/contact/>

To show you how easy it is, find my submission to last year's writing cycle below:

More than never, and less than all the time

Let's begin by noting that all of what follows is based squarely on my own opinions, as relates to my own career, teaching my own students. Inasmuch as it might be useful to any reader, that is wonderful, but I think every reader would do well to remember that the subjective position described below is no substitute for whatever conclusions you may come to from your own experiences. So noted, let's tuck in.

It has been useful for me to consider the job of a teacher as one of maintaining balance between opposing forces. Should the class be student-centered or teacher-centered? Should we allow students to make their own meaning or provide them with the myriad meanings made by others? Is the role of the teacher one of telling students what to do or one of helping students figure out how to do what they want to do? This is a list without any particular end. It is also a list without resolution, or at the very least without one true resolution. It shouldn't be surprising when different teachers reach different conclusions about what it means to teach their particular students or when most of us find a middle path to tread. Nor should we be surprised when the same teacher adopts different techniques from class to class or from student to student.

It seems to me that struggle is one such item for this list. In my experience, teaching students is a navigation of the tension between letting them struggle with the material they are presented with and giving them the support they need to develop the skills and abilities of learning. How much struggle is too much? How much is enough? Of course the answer is a resounding "it depends." Still, as difficult as it might be to determine the optimal amount of struggling that students should engage in while learning, I will suggest that the answer is always more than never, and less than all the time. Which is to say that struggle, in some degree, is an essential characteristic of an education.

Learning requires an amount of difficulty on the part of the learner. Perhaps the most dangerous popular thought regarding education is the notion that the only good education is a fun education. This notion shows up in a variety of contexts, none of them any less disingenuous to what it means to actually learn something than the others. If we're being honest, we should admit that the process of learning is often quite difficult and frequently not en-

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joyable. Why should it be enjoyable? To learn something is to find space within a preexisting body of understanding for something new. Old notions have to be excised and replaced with new ones, a process that generally requires an admission on the part of the learner that they were previously wrong - and are even now only less so (or perhaps wrong in a different way). This is struggle, and it is important, but it is not always going to be fun.

The work of teachers has been defined in many different ways over the history of the profession. Here is my preferred definition: The teacher makes the work of learning possible. To that end, the teacher must allow students to struggle with the material of a course. This allowance is not something that is easy to do, or that we should expect all students to uniformly embrace. It is also not something that is done as expertly by all teachers. In my own experience, it is not uncommon to have those students who have been deemed the most academically talented express the sentiment that they would very much prefer to be told what to think rather than engage in the work of figuring it out for themselves, and that the pattern of education through dictation has been the dominant one for their academic careers. It is much more comfortable to be trained in what to think than in how to think. It is also much more comfortable to teach students from the purchase of the former. Being able to resist the urge to make a student's meaning for them is particularly difficult for experts; but, as experts, we should all remember that the way we became experts was not by having other experts do our learning for us.

This established, we start to see a clear role for the teacher in terms of struggling students. Not only do we have to let students struggle, we also have to make sure that the environment we are providing is one that encourages struggle. To this end, struggle shapes the classroom. Teachers must provide work that demands struggle and provide an environment that makes it possible for students to engage, struggle, and even to fail with the material that is being taught. The expectation should not be one of instant success, but one that requires continuous effort. The one-size-fits-all approach must be discarded and replaced with an equally insistent focus on the best effort of each particular learner. At the same time, teachers should never abdicate their responsibility to guide students through the process. Setting students up to struggle, while not providing them with the structures needed by them to seek assistance, seems to me to be a recipe for lasting damage.

I don't suggest that this is an easy goal to accomplish, particularly in the types of school systems that most teachers work in. So much of U.S. public education is failure-averse and offers learners single-shot opportunities to demonstrate their learning. Many teachers who strive to provide the type of environment that I am describing will find that they have to fight to do it. But I will suggest that it is an important enough goal that we owe it to our students to fight whatever battles are necessary to provide such places for our students to learn in.

How we do this is very much an individual choice. There is no one way to manifest the type of classroom that I am advocating for, and I would be very wary of any person, institution, or other concern that suggested there was one true path to educating students. At the same time, I do believe that if you look at the teachers, classrooms, and school systems that are seen to be most effective (however that term is defined) in the goal of educating students, you will see that, while many start from different operational principles, they all provide the type of environment that encourages student struggle and rewards the attempt. I know that it is what I strive to do in my own classes, and I firmly believe that it is what is best for the students that I am fortunate enough to teach.

STANYS 120th Annual Conference

November 6-9, 2015

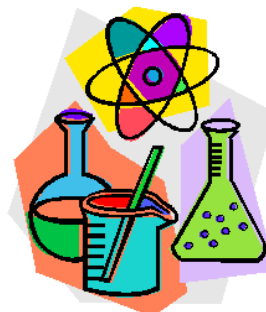
Rochester Riverside Convention Center

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



Intermediate Level: Tips for New Science Teachers

Ashley Bloch, Intermediate Level SAR



In the past couple of months, I seem to be coming in contact with more and more new science teachers. They are fairly easy to spot; they often look frazzled and slightly tired, but exude enthusiasm and are eager to become an integral part of the science education community. I'm often asked for advice and tips on how to be successful, so I thought that I would share a few of my most useful tips.

Do come early and stay late. I'm not suggesting that you stay until 8pm every night, nor am I suggesting that you arrive at 5am. However, staying after school for 15 minutes can make a world of difference. It will give you time to clean up, prep for the next day, and take care of any housekeeping items on your agenda. Your mornings will thank you too – you won't feel as rushed knowing that you don't need to hurry in and take care of the things that you left behind the night before. (I also recommend that you get to school at least 15 minutes early too!)

Don't eat alone. It is often tempting to stay in your classroom and work through lunch – that pile of papers seems like it will never get graded. I've also heard that the faculty lounge is a haven for complaints – so new teachers should avoid it at all costs. However, going out and connecting with the people that you work with is one of the most valuable things you can do for your career. Talking to other teachers will allow you to collaborate and pick up various teaching tips, ranging from time management to classroom management. It can be especially useful to talk to teachers outside of your discipline – some of the best advice I have received has come from non-science teachers.

Do have a presence outside of your classroom. As a teacher, you are now part of the community that your school is located in. Be sure to get involved – attend the school play, attend sporting events, and if you are brave enough, be part of the school talent show. It allows students (and their parents) to see another side of you. In turn, you are sending a signal that you truly care about the kids that you work with and it's not all about the assessments.

Don't fail to plan. It is often said that a new teacher is only a day or two ahead of the students. While you might feel like you are treading water by trying to keep on top of many different tasks, I have found that by planning with the end in mind, I have been able to relax somewhat. If I know that I need to give a test on a certain day or be done with a particular topic before a break, I will plan backwards from that spot. I have found that determining the amount of time needed to cover certain materials, I have been able to break the content down into chunks and not feel as overwhelmed.

Do join professional organizations. Joining STANYS is a great way to connect with other science teachers and see how things are done in other schools and districts. They have several professional development opportunities to enrich your teaching, and in turn, your student's knowledge of science. I know that since I have joined the organization, I have been able to learn so much more about what is going on with science education, not just in my school, but in New York State!

These are just a few suggestions to help those of you starting out. If you have any suggestions that I have not mentioned here and would like to share, feel free to email me at abloch01@gmail.com.

An Engaging Inquiry Activity to Start the Year

Melissa Torre, Earth Science SAR



Becca Parker shared this activity on the ES listserv. It sounds like a great activity to start off the new school year. Using Ziploc bags make matching sets of 15 or so LEGO pieces, enough sets for every student to get a bag. You can ask for LEGO donations, or I was able to get them in the \$1 section at Target. I made 15 sets of matching LEGOS so I have 30 bags in total. I numbered the bags 1A, 1B, 2A, 2B and so on so that when the students come in they grab a bag and are randomly paired up with another student.

The pairs get together & sit back to back. Person A makes a design while B enjoys the down time. Then, person A explains to B how to make the same design, while still sitting back to back. No looking - and Person B cannot say a thing - not "what?" or "can you say that again?" NOTHING! They finish - compare – laugh. The second time - person B makes a design, only when they are describing it, person A can ask all the questions they want to. The pairs usually talk out many confusing moments.

After the activity, have a class discussion about how much easier things can be if communication is involved. Especially if one asks questions throughout the year if there are misunderstandings. I also made an exit ticket reinforcing the point/lesson behind this activity.

I shared this activity on the STANYS Facebook page and Genesis Suchan shared another activity that she does. "Each student gets a can of play dough is told to make a functional item. After everyone is complete they move to someone else's and must use quantitative and qualitative observations on an index card. No saying what they think it is though. Once completed I collect the cards and randomly hand them out. Using the observations they have to find the item. Then we discuss useful observations."

If you have any more activities you would like to share with us, please post them on the STANYS Facebook page.

Name: _____

#: _____

LEGO Activity Exit Ticket

Can you see the similarities between this activity & the learning that takes place in the classroom on a daily basis?

Student A - built a structure then taught Student B how to build it.

The concept the teacher wanted the student to learn

Structure A - the structure built by Student A & taught to Student B.

Teacher who is teaching a new concept.

Student B - person who builds structure from directions given by Student A.

What the student actually learned.

Structure B - the structure built from Student A's directions.

Student learning a new concept.

5. What effect does being able to ask questions have on the outcome of the lesson/activity? Explain.

New Mandates for ELL How Will This Impact Science Classrooms?

Jean Ann Crespo (Kohn)



A Special Kind of Class

Each day in our science classrooms we have the ability to be faced with teaching students who are learning English as a second language. In September 2014, a new set of mandates from the commissioner were proposed and were implemented in September 2015. The purpose of these mandates is to create equal educational opportunities for students learning English as a second language. With the changes came new terminology which is shown in Table 1 and Table 2 (on page 30). With the new terminology changes also came changes as to who can teach these students. In the past, a science teacher did not have to have TESOL/ESL certification to teach ELL students. As of September, the science teacher needs to have ESL or bilingual certification or have a push in teacher with the certification. Very different from what we are used to.

For science teachers, the most important changes come from the type of teacher that now can teach these students. The science teacher must either be dually certified with ESL and content certification or have an ESL teacher co-teach in the classroom, if the science class is the one chosen as the content with support for the English as a New Language learner. This does not mean it is a special education classroom. It is now a supported model for students learning English as a second language. Another interesting change that can affect science teachers is the mandate stating that the parents must be met with an additional time during the school year in addition to the bi-annual parent/teacher conferences, something like what we have for special education students. It is the district's discretion as to how they are going to meet this mandate and if the science teacher is needed to have the additional meeting.

One of the major changes has to do with Professional Development requirements. All teachers will be required to have 15% of their total PD hours be ELL specific. A challenge for teachers to fulfill, but many classes and opportunities are out there for teachers. As more of the changes are set in stone, I will be continuing to write articles to give science teachers the most updated information as it becomes known. If you have any questions please don't hesitate to contact me at Jcrespo@copiague.net.

To see the entire power point from EngageNY at"

<http://www.p12.nysed.gov/biling/docs/CRPART154Overview-webversion.pdf>

SAVE THE DATE

Suffolk STANYS

SPRING Into STEM Conference

Wednesday, April 1, 2016

Brookhaven National Lab, Berkner Hall

Check our website for updates and registration information.

www.SuffolkSTANYS.org



Last year's keynote speaker David Krause, a paleontologist from Stony Brook University, with Suffolk Chairperson Glen Cochrane.

Old	New
English as a Second Language	English as a New Language (taught by certified ESL or Bilingual teacher)
Native Language Arts	Home Language Arts
Beginner	Entering
Intermediate	Emerging
-----	Transitioning
Advanced	Expanding
Proficient	Commanding

Newcomer	Students in an ENL program for 1-3 years
Developing	Students in an ENL program for 4-6 years
Students with Inconsistent/Interrupted Education (SIFE)	Students who have attended school in the US for less than 12 months and who upon initial enrollment in a US school are 2 or more grade levels behind in their home language literacy and/or math or had interrupted schooling prior to coming to the US
English Language Learners with Disabilities	ELL students classified with a disability
Integrated English as a New Language	ESL instruction and content area instruction (either co-taught by an ESL and content area teacher or taught by dually certified teacher in ESL and a content area)



Colleges Update

Linda Padwa, College SAR

As the school year drew to a close in June, the local press was paying a large amount of attention to teacher evaluations and the impact of the evaluation process on teachers' careers. However, another aspect of the trend to modify teacher evaluations that has received far less public attention is the impact of new regulations on those who are about to enter the profession.

Prior to certification, pre-service teachers are now required to successfully complete three written exams: Academic Literacy Skills Test (ALST), Educating All Students test (EAS), Content Specialty Test (CST), and a performance assessment (edTPA). The ALST and EAS are relatively new exams, but the CST in the sciences have not yet undergone significant revision like the CST's in other disciplines.



The edTPA is a performance examination that requires candidates to select a three to five lesson segment within a unit, plan the assessments, lessons, activities, and then video the lessons as they are being taught. A series of narratives are submitted to demonstrate that the candidate has reflected on the process associated with planning the sequence of lessons, to provide evidence of student learning, and to assess whether or not the intended Learning Objectives for the lessons were met. Two ten-minute video segments are used to demonstrate students' active participation in the lessons and to provide evidence of student learning.

The new examinations are proving to be challenging for some teacher candidates, and the pass rates have raised some concerns at the state level. The cut score for one exam (EAS) has been lowered by twenty points and substitutions for some of the other tests (ALST and edTPA) have been put in place for those who fail the tests but meet all of the other certification requirements by June 2016.

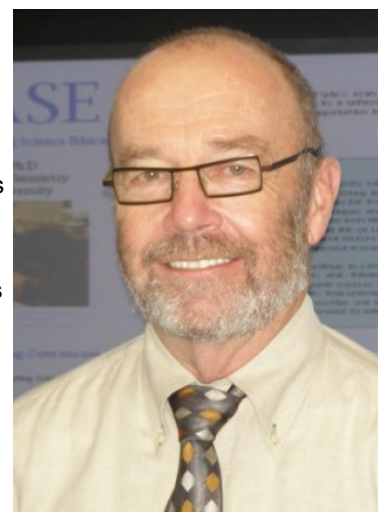
If you should be fortunate enough to host a student teacher in the coming school year, please be aware of their challenging task as they meet the new teacher certification requirements. Your support will make the task that much easier. Thanks in advance.

THANK YOU, DAVID BYNUM

After 33 years at Stony Brook University, Dr. R. David Bynum, Professor of Biochemistry and Cell Biology, has retired. Many of you may know Dr. Bynum through his role as Director of CESAME (Center for Science and Math Education) or its predecessor, LIGASE (Long Island Group Advancing Science Education). Others may know Dr. Bynum through his work with programs to advance opportunities for minority students who wish to pursue careers in STEM fields. And as teachers, many of you know Dr. Bynum for his contributions to the Science Education Program at the University.

On behalf of all of us involved with STEM education on Long Island, we thank Dr. Bynum for his efforts to create opportunities that have advanced our work. Through millions of dollars in grants that he brought to the University, Dr. Bynum built a framework to support STEM education that touched countless numbers of K-12 students and their teachers, as well as college undergraduate and graduate students.

Many of you will recall that the Suffolk STANYS Spring Conference was held on Stony Brook University's campus for many years. Dr. Bynum's assistance was instrumental in making this possible. With CESAME as a co-sponsor, sites for the conferences were secured and CESAME also provided some financial support to defray conference costs.



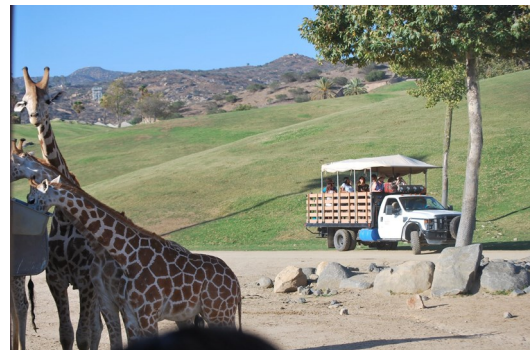
Dr. Bynum, please accept our best wishes on your retirement. We know that all who have benefitted from your dedication to advancing STEM education on Long Island, throughout New York State, and beyond, will remember you with thanks.



How I Spent My Summer Vacation

Sonja Andersen
Environmental SAR

This summer, along with the regular summer activities, I took a five and a half hour airplane ride to San Diego, California to participate in a teacher workshop at *The Institute for Conservation Research*. I am still going over this experience in my mind and amazed at the experiences I had and information I learned. The teacher workshop in conservation science was a 3 day experience at the San Diego Safari Park. We were met at the airport and drove about 45 minutes to the entrance of the Safari Park which is part of the San Diego Zoo Global. There were about 36 teachers from around the country and we were greeted by excited members of the education team. We worked through eight modules all with the theme of conservation, got a behind the scene tour of their state of the art veterinary hospital on site, took a safari caravan (see pictures) and toured the Safari Park. Our accommodations were tents inside the safari park where I woke up to sounds of the lions, watched the giraffes walk by and saw elephants bathe themselves after the park visitors had all gone for the day. We spent time tracking condors and determined their sex through PCR and DNA analysis. We also were treated to lectures by researchers on the cutting edge of conservation science. It was an incredible experience and I encourage anyone interested in conservation to apply. For more information check out their website at www.sandiegozooglobal.org.

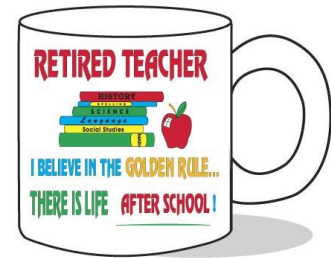


Sonja Andersen at the San Diego Safari Park.

What Do Parents Really Want

Ed McDaniels

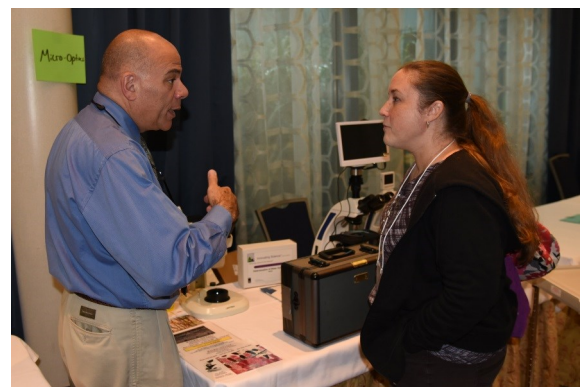
Retiree SAR



What parents want from school for their children will vary for almost each family and their expectations and their ability to provide for their children. For some, they are looking at a “nanny-state” that takes on all responsibilities and absolves parents of any of the troublesome burdens like providing school supplies, meals, and career counseling. For others, they feel that teachers, lower than the parents on the socioeconomic ladder, could not teach their children the lessons of business, dubious ethics, and the way the “real world” works. Of course, the vast majority of parents fit somewhere along this continuum. Are there things that all parents want for all their children? Yes, among them fairness and consistency.

Living in the same community in which I taught for 27 years gives me the opportunity to see former students, now parents, and as adults we can discuss what they remember from my classroom and what they see in their child's classroom. A former student, now in his forties and father of two girls, eighth and fifth graders, was sharing a situation that had only occurred recently for the eighth grader. She had had a history assignment over the weekend and had stayed up late to finish it and Monday morning had to drag herself out of bed. When she got to class a couple of her classmates had not done the assignment and without too much trouble convinced the teacher to collect the assignment the next day instead of the original due date. What a nice teacher! Wrong, the young girl was annoyed and confused. She had stayed up late to finish the assignment, she had lost that sleep to meet a deadline, why couldn't these other kids have done that too. Are due dates really when the assignments are due or can things be handed in with no penalty after the due dates? Are all teachers like this or only some? Will this teacher always waive due dates without consequences? This former student expressed his concern for the “lesson” his daughter had learned. For many years he worked in business and now owned his own company. He knew that when working with clients and bosses, due dates are due. That Monday morning PowerPoint to a client to secure a million dollar project doesn't do the job if you show up unprepared. How does a client judge your work ethic and trustworthiness if even your presentation is not on schedule? Will this company really meet the proposed time schedule after I have signed the contract and have given them money? Your word in business and in life are what you are judged by. The written contract is what will stand up in court but that handshake to finalize the deal is what you will be judged by. Are you a person of your word? Was that teacher fair to the many students who did the assignment on time by changing the due date? I can think of a number of ways that teacher could have made the situation a good life lesson, but she didn't. Not only was an educational opportunity lost but it created resentment among the diligent students and created doubt in their minds in the word of that teacher as well as their other teachers.

How would you have handled that as the teacher? How would you have handled that as the parent?



More scenes from the SciTech Conference. Left: teachers networking during the keynote presentation. Right: David Sandomir of Micro-Optics explaining his products to a participant.

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



More pictures of outstanding seniors from the Awards Dinner.



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 2016 Science Olympiad Competitions

Register your school now for the 2016 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 30, 2016 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 problem on disease, cell biology, forensics, compound machines, green generation, it's about time, astronomy, dynamic planet, fossils, protein modeling, game on, chemistry lab, anatomy, and entomology. Our engineers constructed and tested scrambler, air trajectory, bridges, air planes, mission possible, and bungee cords. The schools with the top scoring teams will be invited to compete at a state level competition March 11-12 in Syracuse.

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 hosts MATEX (Materials and Textbook Exhibit) each October. Vendors display and discuss the latest textbooks, science equipment, and field trip opportunities. **Free Admission and Give-aways** are always a part of the program!!

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.

(Continued from page 36)

The B Division Tournament will be held on February 27 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. They alternate between the first Wednesday or Thursday of each month.

2015-16 Dates:

Thursday, November 12

Thursday, December 3

Wednesday, February 3

Thursday, March 3

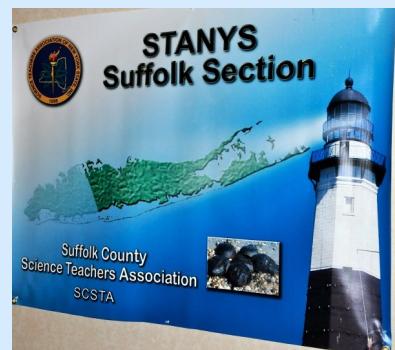
Wednesday, April 6

Thursday, May 5

Wednesday, 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