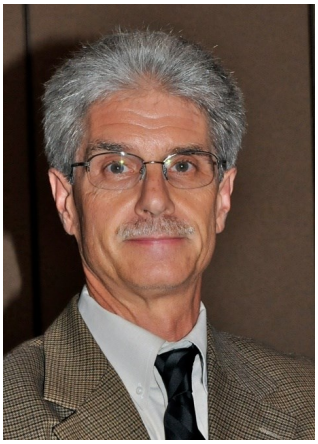
The Science Explorer

Suffolk Section: Science Teachers Association of New York State

Volume 43 | Number 2 | Winter 2015

The Chairperson's Corner



Glen Cochrane

It was a year ago we were talking about the roll out of the Common Core and wondering when and how science standards would come to the agenda. For the past three years, the New York State Science Education Consortium established by STANYS and its sister professional associations have been meeting with NYSED science content specialists to enhance communication and provide more direct feedback on State initiatives in science education. This included the review and revision of *Next Generation Science Standards* and the development of the *Statewide Strategic Plan for Science*. Well, as a result of the Consortium's hard work and efforts last summer, a presentation to NYSED officials found the mark and they decided to support the plan. This past October, a draft of the ***Strategic Plan for Science*** was presented to the Board of Regents. The Board asked for an opportunity for public comment. Stakeholders were encouraged to review the plan, complete a survey and write letters expressing their impression as to how the Plan might be important to science education in New York. We learned that the Plan moved to the Board's agenda just before the STANYS Annual Conference and used that opportunity to inform our members of the Plan. Over 1600 stakeholders completed the survey and thanks to the Consortium's efforts many letters were written in support of the Plan. Just this month, the Plan was adopted by the Board of Regents at their meeting on January 12, 2015. We will now start the actual process of developing new 21st-century science standards for NYS.

What is this *Strategic Plan for Science*? If you haven't heard, it is a "planning and implementation guide to support newly adopted P-12 science learning standards." The mission is to "create a statewide learning community to enhance science education and improve student achievement of the New York State science learning standards." Its vision is to ensure high quality teaching and learning of science for all P-12 students. This multiyear plan consists of six major components: ***Standards, Curriculum, Professional Development, Assessment, Materials and Resource Support, and Administrative and Community Support.*** I encourage you to go to the news link on the *stanys.org* website and review the Plan.

You should know that the Suffolk Section has been active during the fall. Our section was well represented at the STANYS Annual Conference. Congratulations to Nina Smith from Dayton Elementary School who was the Banko Elementary Award winner. Suffolk board members took the top three places in the QR Code Scavenger Hunt with Jean Kohn, our Special Education Science Specialist, winning a free 2015 conference registration. Our members presented several workshops, participated in many, and networked with science educators from around the state. Thanks to the efforts of Melissa Torre, *MATEX*, our annual materials and

(Continued on page 3)

Upcoming Events:

- **C Division Science Olympiad Regional-January 31**
- **B Division Science Olympiad Regional—February 28**
- **American Museum of Natural History Scavenger Hunt— March 7**
- **Suffolk STANYS Annual Conference at BNL— Friday, March 27**
- **LISC— Cradle of Aviation Museum: April 21-22**
- **SCSTA Annual Awards Dinner: May 20**
- **NYS Science Congress at Brookhaven Nat. Lab – May 30**

Inside this issue:

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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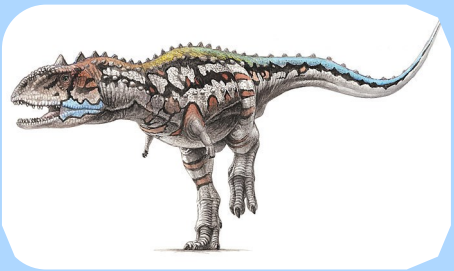
REGISTER NOW!

Suffolk STANYS Spring Conference

Brookhaven National Labs

SATURDAY, MARCH 27, 2015

See more info on Page 7



Chairperson's Corner (*continued from page 1)*

We are currently planning our Annual Spring Conference which will be held at Brookhaven National Lab on Friday, March 27, 2015.

book fair was held on Tuesday October 21th at Villa Lombardi's in Holtsville. Several board members helped by contacting the vendors and welcoming our visitors. Thanks to Gary Vorwald, our newsletter editor, issues of Science Explorer are made available to you on our website. Take a look at our newsletter at *http://www.suffolkstanys.org/* by clicking on "newsletters".

We are currently planning an American Museum of Natural History Scavenger Hunt on March 7. Registration will be available on Eventbrite (see below) through March 5th. STANYS Suffolk isn't charging so your cost is only the museum fees. Professional development hours will be available to those that register.

We are currently planning our Annual Spring Conference which will be held at Brookhaven National Lab on Friday, March 27, 2015. A very exciting program with hands-on workshops, keynote address, and BNL tours are being planned by co-chairs James Ripka and Joe Malave.

Plans are also underway for our Awards Dinner with District Membership to be held on Wednesday, May 20th. After a district joins our section, they are offered the opportunity to select their top senior science student to receive a plaque and attend the dinner with a teacher. Awards for Excellence in Teaching will also be presented to teachers of elementary, intermediate and high school levels after a nomination and application process. Look in this newsletter for some information about these programs.

Suffolk STANYS, in coordination with Brookhaven National Lab, is also proud to be planning for the New York State Science Congress on May 30th. The students that attend the State Science Congress represent the very best research projects from STANYS affiliated regional science fairs. If there are teachers interested in assisting with this event, please contact me at: *gblink735@gmail.com.*

Suffolk STANYS Presents:

American Museum of Natural History Scavenger Hunt

Saturday, March 7
10:00 am – 2:30 pm

Join the Suffolk County section of STANYS as we explore this New York treasure in a fun and exciting way – a scavenger hunt! Working alone or with a team (made-up of colleagues, friends, family, or a combination – you pick), search for various fossils and artifacts of the museum. Clues will be given a variety of ways – all designed to make you think and experience some of the exhibits of this institution. Additionally, we will present various ways that this scavenger hunt can be easily adapted to use with your students. Whether this is your first trip to the museum or your hundredth, you're bound to have a fantastic time!

We will be meeting at 10:00 am at the 81st Street entrance of the museum at the Rose Center for Earth and Space (located between Central Park West and Columbus Ave). Here, you will have the opportunity to purchase your admission to the museum and receive your scavenger hunt clues. At 2:30pm, we will regroup to see how everybody did!

Please note, to participate in this exciting opportunity and to receive professional development credit, you must register on Eventbrite by Thursday, March 5. Also, it is highly recommended, but not required, that you bring a smartphone or tablet so you can take advantage of the free apps that the museum offers to enhance your visit.

Bring your family and friends for a fun time as we explore the AMNH!

For more information, please contact Ashley Bloch at *abloch01@gmail.com*

For more information about the museum, please visit their website at *http://www.amnh.org/*

Don't Delay – Register Today at: ***http://suffolkstanysamnh2015.eventbrite.com***

Materials and Textbook Exhibit (MATEX) Provides Resources for Teachers

Suffolk STANYS hosted the annual Materials and Textbook Exhibit on October 21st at Villa Lombardi's in Holbrook. There were 20 vendors including microscope companies, publishers, non-profit organizations, and the Suffolk Section Subject Area Representatives (SARs). More than 80 people attended and the event raised needed funds that will support the activities of the Suffolk Section. We would like to thank all of our vendors and volunteers for their participation and contributions to science education on Long Island. Special thanks to Melissa Torre and the Suffolk STANYS Board for organizing and coordinating the successful event.

Suffolk STANYS volunteers Melissa Torre, Alice Veyvoda, Sheilah Schumann and Ed McDaniels helped make MATEX a success.

Scenes from MATEX 2015

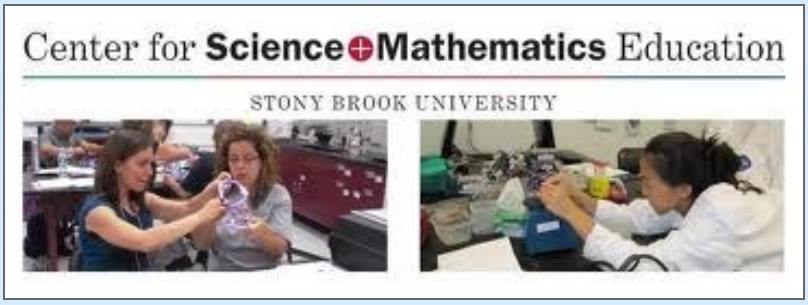
Suffolk Section Wins STANYS Membership Award!

Congratulations to Sheilah Schumann for her hard work in helping the Suffolk Section win the Membership Challenge Award, presented for the greatest membership increase in total number for STANYS in 2014. The award ceremony, held November 2, 2014, took place at this year's state conference in Rochester. In addition to the greatest increase in number, Suffolk section currently has the largest membership numbers of the 17 sections in the state. At the time of the conference, Suffolk accounted for 236 of the 1635 STANYS members. Sheilah attributes Suffolk's success in retention and attraction of science professionals to the diligence and dedication of Suffolk Section's Board of volunteer leadership, as well as the great array of programs offered annually. We hope to continue to attract more Suffolk science teachers to join our section. Ask a colleague to join and be part of our local professional organization of science educators.

Sheilah Schumann, above with Suffolk Section Chairperson Glen Cochrane, is Vice President for Membership.

STANYS Suffolk Section members had a great time at the annual conference. More than 20 members attended the conference last November, a significant increase since the conference moved to Rochester years ago.

Opportunities for Teachers & Students



It's Never Too Soon to Think About Next Summer!

Summer Camps for Middle and High School Students

at Stony Brook University – Summer 2015

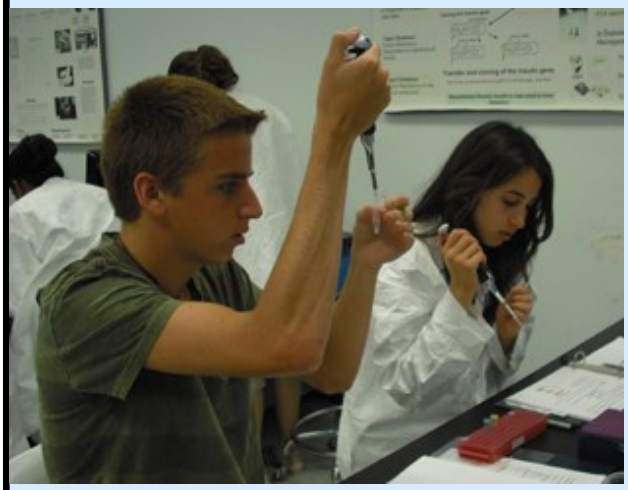
Before you know it, Spring will be here and your students may ask you about possible summer programs in science. The Center for Science and Math Education (CESAME) at Stony Brook University will be offering a wide variety of programs for middle and high school students who are interested in exploring different aspects of science in a camp setting.

Choose two to four week camps that explore a variety of STEM subjects including: Biotechnology, Forensics, Science Exploration, Mathematics, Engineering, and Physics. See the CESAME web site for more details: *http://www.stonybrook.edu/cesame/students/k-12.shtml*

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 offers five-hour lab experiences in Biology, Chemistry, Earth Science and Physics for Regents and AP level classes. These experiences are designed to expand on material that is addressed in the Core Documents for each science, and to meet some of the more advanced laboratory skill requirements for AP classes. More information about the Teaching Labs and how to schedule a field trip for your classes can be found at the CESAME web site:



http://www.stonybrook.edu/cesame/students/ScienceTeachingCenter/scienceteachingcenter.shtml

SAVE THE DATE!

Science Teachers Association of New York State

Suffolk Section presents:

"Spring into Science with STEM"

Spring Conference

Friday, March 27, 2015

8:00 am to 3:30 pm

Brookhaven National Labs

Keynote Presentation by Dr. David Krause

Department of Anatomical Science, Stony Brook University

"Science with a Social Conscience"

The STANYS Suffolk Section, along with Brookhaven National Laboratories, is pleased to announce our Spring Conference for science educators. Join your colleagues from Long Island schools for a day of professional development and networking. The focus of the conference will be on a variety of STEM topics, including updates on the status of the Next Generation Science Standards and the State Education Department Strategic Plan for revising science curriculum and assessment in New York State.

We are fortunate to have Dr. David Krause from the Department of Anatomical Science at Stony Brook University, who will give our keynote address. Dr. Krause, a dynamic world renowned scientist, is also the founder of the Madagascar Ankizy Foundation. His paleontology research on Mesozoic vertebrates from Madagascar (dinosaurs, birds, crocodiles, frogs and early mammals) is complemented by his foundation's work on impacting the lives of the local residents. This is a must hear talk on how science improves our world. In addition, Brian Vorwald, Past President of STANYS, will give all of us an update on the status of the Strategic Plan for Science, and the highly probable upcoming revision to New York State Science Standards.

STEM Workshops Include: Solar Energy, Behind the Scenes Guided Tours of Brookhaven Lab's Research Facilities , Walking Tour of BNL Geology: Carolina Bay Potential Impact Craters, Nanotechnology, Classroom Science Fun, Climate Change, Trilobites, Brachiopods, & Crinoids, Oh My!, and many more.

Registration will begin in January 2015, expected cost is under $50 for the complete day of workshops, tours, keynote, Science Standards update, networking and 5 ½ hours of professional development in a full day workshop. We hope you can join us for the exciting program.

Go to Suffolk STANYS website link below to review the entire program. Registration is through EventBrite. The link is listed below also.

Cost is only $40 for STANYS members; $60 for nonmembers, and $25 for students if you register by March 14. You can join STANYS at a discounted rate, and get the members price!

http://www.suffolkstanys.org/index.php?p=1_48_Spring-Conference

Register Online at: *http://www.eventbrite.com/e/spring-into-science-with-stem-tickets-15200957473*

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. Each online course costs $495 and graduate credit is available at additional cost.

Upcoming course offerings have been posted for this Spring. Two summer sessions are also offered in May—August. Check the website for updates.

Spring Session 2: March 16—April 26
Earth: Inside and Out, The Ocean System, Genetics, Genomics, Genetics, Evolution, Climate Change, Diversity of Fishes, Water, and Solar System.

Register by March 2 for Spring Session 2.

For more information and to register go to:

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

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.

http://www.greenossp.org/index.php

Open Space Stewardship Program

An Opportunity to Bring 21st Century STEAM Skills to Your Classroom

Sr. Jane Fritz

Do you want to learn to code, to develop websites, to integrate technology such as 3D printing into your curriculum? An organization called NoizIvy.org, through its innovative programs at *kidOYO.com* and *codeLI.org,* is working with students and teachers in K-12 to introduce coding, maker education and the use of new tools and technologies. The mission of *NoizIvy.org* is to empower hands-on maker education and entrepreneurial learning within local communities using technology and peer-to-peer exchange models. Recent programs have offered students from 7 to 17 the opportunity to design a web site, create an interactive game in Scratch or Python and learn about cybersecurity. Students also have had the opportunity to work with Arduino boards and to program robots. Science concepts such as the laws of motion, and electrical circuits are presented in a hands-on, need to know environment. Students are also encouraged to explore math shapes and graphing coordinates as well as artistic use of color and layout. The projects they produce in a very short time are amazing! This can be a great way to incorporate STEAM (science, technology, engineering, art, and math) skills into your program.

While working with several University-partners on Long Island to make advanced opportunities available to our connected learning community, NoizIvy.org is also willing and available to provide members of the Suffolk Section of STANYS with professional development opportunities to help bring these capabilities into classrooms across our region. To learn more, or to gain access to details of their programs, workshops and their consultative capabilities, reach out to *info@kidoyo.com.*

Website & Facebook

Melissa Torre

Suffolk STANYS has its own website at ***www.SuffolkSTANYS.org.*** If you visit the website you will get up to date information about scheduled programs, meetings, trips, and events. You will also get access to suggested links separated by subject area & contests your students might be interested in. You can even find our newsletters online!

Join the hundreds of people who liked Science Teachers Association of New York State (STANYS) on *facebook.com.* Connect with science teachers from around New York State.

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

http://www.stanys.org/

Like us on Facebook

MAGLEV Contest for Middle School Students

BROOKHAVEN NATIONAL LABORATORY

The 2015 Middle School Magnetic Levitation (MagLev) Contest will be held on Wednesday, March 18, 2015 from 8:30 a.m. to 1:00 p.m. at Brookhaven National Laboratory in the Brookhaven Center (Building 30). Registrations must be submitted online and are due on March 6, 2015 . The website listed below provides information regarding rules and eligibility. Registration is now open at:
http://www.bnl.gov/education/program.asp?q=134

The Cradle of Aviation is hosting a "sister" MagLev Contest on Wednesday March 18, 2015. Schools can choose to participate at either location; the specifications or criteria are the same for both contests. Additional information can be found at: *https://www.cradleofaviation.org/education/competitions.html.*

In addition, the Cradle of Aviation is hosting a MagLev Contest Teacher Workshop on January 12, 2015. Information for this professional development workshop can be found at *http://www.cradleofaviation.org/education/professional_development.html.*

In this contest, students will learn about MAGLEV technology and use math, science, and technology principles to optimize the design of a MAGLEV vehicle. Long Island, like so many areas, has traffic congestion problems. Many experts believe the best way to solve this problem is to design new transportation systems. One approach is to develop "MAGLEV" vehicles which float over a fixed track, supported (levitated) and driven by magnetic fields. This is like flying with lift provided by magnets instead of wings.

Each contestant must complete a "Student Design Portfolio" (SDP). The "Student Design Portfolio" can be downloaded from our website. The portfolio form to be completed will depend on the category in which the contestant participates. Please refer to the rules and specifications for more information. On the day of the contest each participant must hand a completed Design Portfolio to the judge. The top six fastest times will be considered for placement and weighted accordingly. The judges will then review the SDP and weight those as well. Final scoring will be determined based on these combined scores.

Each school is limited to a maximum of 15 vehicles. Each vehicle can only be entered into (1) category. A lunch break will take place from 11:30 a.m. to 12:30 p.m. during which time the judges will tally the scores and read the design briefs. Students are asked to bring their own lunches. Beverages and chips will be provided by BNL.
Tracks and timing devices will be provided for the competition. Kelvin Kel-Timer timing devices will be used during the contest and these will be mounted on the sides of the track, approximately three quarters of an inch above the track. A separate room will be available for the students to practice and make vehicle adjustments.

Important Dates

Registration Closes:
Friday, March 06, 2015, at 11:45 p.m.

Contest
Wednesday, March 18, 2015, 8:30 a.m. - 1:00 p.m.

Contact Information

For more information about this program, contact:

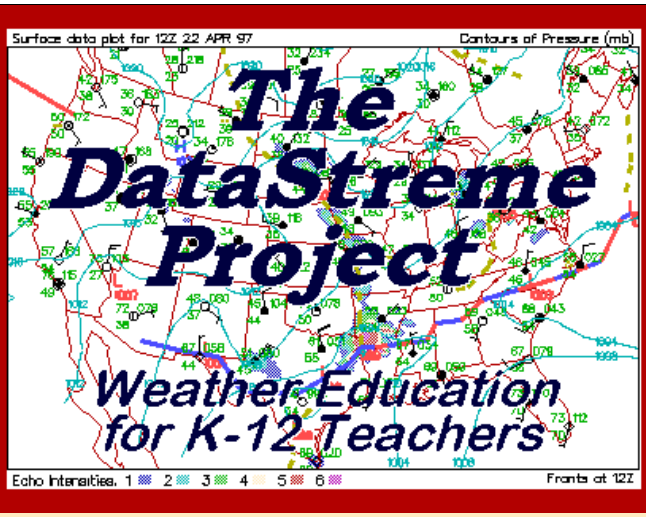
Aleida Perez
Brookhaven National Laboratory
Bldg.400C – P.O. Box 5000
Upton, NY 11973-5000
631-344-4788 (phone)
631-344-7098 (fax)
pereza@bnl.gov

How Could You Pass This Up?

FREE PROFESSIONAL

DEVELOPMENT

GRADUATE CREDITS



If you haven't heard of the AMS DataStreme courses for K-12 teachers, then you must read on. The American Meteorological Society has a precollege teacher enhancement and leadership training program offered in a hybrid online learning format. There are two different thirteen-week courses offered in the fall and spring semesters – **DataStreme Atmosphere** and **DataStreme Earth's Climate System**. The courses use an e-textbook and an e-lab investigations manual as well as a web site that contains two weekly current weather and climate activities and a wealth of current data and information that can be used in the classroom.

Participants will get access to the e-textbook and e-investigations manual, and other resource materials at no cost to the participant! Teachers who successfully complete the course will earn three graduate credits through SUNY Brockport at no cost! So how could you pass up this opportunity? Read on to find out how to apply for this course.

You may register for only ONE DataStreme course per semester. Applicants must be teaching professionals at the precollege level. Although these are inquiry-based science courses, it is not just for science teachers or high school teachers. The program seeks teachers who are willing to accept a leadership role as a weather and/or climate education resource teacher in their school district and community. Participants will develop a plan of action that will be implemented upon completion of the course. This plan will help them introduce colleagues, administrators, parents and members of their community to the benefits of using real-time environmental data as vehicles for learning across the curriculum. They will also develop a lesson plan based on one of the topics covered in the course.

To learn more about the *AMS **DataStreme Atmosphere*** course and to download an application, go to *http://www.ametsoc.org/amsedu/dstreme/DSindex.html* The first two meetings for this course will be Saturdays, Jan 24 and Feb 28, from 12-2:30 p.m. at Nassau Community College, Garden City, Long Island, NY. The third meeting will be on Saturday Apr 25 from 3:30-7:30 p.m. at the National Weather Service Office, Upton, Long Island, NY. This meeting includes dinner and a tour of the NWS facility. Some participants travel 2 hours to get to each meeting. So if these dates and locations work for you, please send your completed application or questions to: *Lisa.Bastiaans@ncc.edu*

To learn more about the *AMS DataStreme Earth's Climate System* course and to download an application, go to *http://www.ametsoc.org/amsedu/ECS/index.html* All three meetings will be held at Long Island University, C.W. Post Campus from 5-7 p.m. on the following Tuesdays - Jan 20, Feb 24, and Apr 21. If these dates and the location work for you, please send your completed application or questions to: *Margaret.Boorstein@liu.edu*

Seating is limited in both courses so send in your completed application to the appropriate contact person before Jan 16, 2015. Each course begins on January 19!

Hurry - SIGN UP NOW!

Award Opportunities for Teachers

STANYS Teacher Awards

As we are already gearing up for the next STANYS conference in November, we are looking for teachers to submit applications for the ***Excellence in Science Teaching Award***. This award honors one elementary, one intermediate, one high school and now one college educator who have been devoted to inspiring students and colleagues alike. There is also special recognition for a ***Fellows New Teacher Conference Award***. To be selected, the applicant must: have commenced the second through fifth year of full time teaching in September, have never attended the STANYS Conference, be a member of STANYS (upon application), attend this year's full conference, submitted an application letter and a recommendation from a principal or department leader. The ***Anton Banko Award for Excellence in Teaching Primary Science*** recognizes an educator in early elementary grades who is an outstanding teacher of science. The award covers expenses (up to $1500) to attend the STANYS annual conference and provides a $500 stipend for the purchase of science material for the classroom.

For the Excellence in Teaching Award, you will need to describe and provide evidence on four aspects of your professional teaching career. We ask that you first present your philosophy of science teaching. The second aspect is to describe for us how you implement your philosophy of science teaching in the classroom. The third aspect is to provide evidence of the effectiveness of your philosophy of teaching. We are looking to see not only letters of recommendation from colleagues, administrators, parents and students but you could also include publications, student work, articles, pictures—the list is endless! The final aspect that we ask for you to provide to us is a description of your professional involvement, not only in STANYS, but also with your school and your community. Two copies of your application, along with the entry form are due by July 1st.

Go to the STANYS website (www.stanys.org) for more in-depth information about both of these awards. Click on the "About" on the blue banner and then click on the ***STANYS Excellence in Teaching Award, Fellows New Teacher Conference Award***, or ***The Anton Banko Award for Excellence in Teaching Primary Science*** links in the right column. On these pages you will also find a link to the application entry form as well as the rubric by which all applications are evaluated.

If you would like to nominate an individual for these awards, email your name and the nominee's name, position and contact information by May 1, 2015. The nominee will be contacted and it will be up to them to complete the application process. Don't wait until the last minute! STANYS knows that we have excellent science teachers and we want to recognize you for the great things that you do. Let us know who you are and what you are doing!

Chemical Safety Video Available

Last December, the U.S. Chemical Safety Board (CSB) released, "**After the Rainbow,"** a video about potential dangers in high school chemistry laboratories. The message features Calais Weber, an accident survivor, who on January 23, 2006, at age 15, was burned over 40 per cent of her body during a chemistry demonstration performed by her teacher at a prestigious boarding school she attended in Ohio. Calais describes the demonstration, called the "rainbow experiment," that was meant to show how various mineral salts produce different color flames when burned. Mineral salts were mixed with highly flammable methanol in small dishes.

Just a couple of weeks after the release of the video, two students were severely injured while observing the same demonstration in a Manhattan science lab (*http://www.nytimes.com/2014/01/04/nyregion/school-experiment-that-burned-boy-was-focus-of-federal-warning.html?_r=0*). The importance of safe practices in the science classroom can not be overemphasized.

CSB videos may be streamed and downloaded at *www.CSB.gov* from the CSB media room. They are also available on *www.YouTube.com/uscsb.*

Fellows New Teacher Conference Award 2015

Melissa Torre, Fellowship Committee Chairperson

The Fellows Endowment Fund, created in 1984, enabled the STANYS Fellowship Committee to establish a conference award for new teachers starting in 1992. The award supports the attendance of a science teacher in his or her **second to fifth year of teaching** to the annual STANYS Conference. This award provides the recipient with three nights of lodging and full registration to the conference (including two dinners & one breakfast). The winner of this award is responsible for costs related to travel, Saturday events, and other meals not included in registration.

We are pleased that the fund has benefited promising new educators for a number of years. We hope their association with STANYS will continue to be a part of a lifelong commitment to professional development.

If you are a new teacher, we welcome your application. If you are a veteran teacher, please encourage your new colleagues to apply. To be selected the applicant must meet the following criteria:

* Has commenced no more than their fifth year of full time teaching in September 2014
* Has never attended the STANYS Conference
* Is a member of STANYS (upon application)
* Will attend the conference (Saturday, October 31 through Monday, November 2, 2015)
* Has submitted an application letter and a letter of recommendation from a principal or department leader

In the letter of application, the teacher should address the following questions: Why do you wish to attend the conference? How will this award help you? How did you hear about the STANYS organization? Please include your home and school address, phone numbers, e-mail address, grade level & courses taught.

The recommendation from the principal or department leader should include comments concerning how the applicant's attendance at the conference will benefit the district and how the applicant demonstrates evidence for a promising career in science teaching. Further, the principal or department leader should identify if receipt of the award will be the only way to facilitate the applicant's attending the conference. The application should have documentation verifying that the applicant is entering no more than his/her fifth year of teaching and will be able to attend the full conference.

Application letters must be postmarked by July 1st, 2015 and mailed to:

Melissa Torre
STANYS Fellowship Committee Chairperson
1030 9th St.
West Babylon, NY 11704

mtorre@levittownschools.com

Right: Melissa Torre, Fellowship Chairperson, presents Fellows New Teacher Award to Yelena Silverman. Yelena had the opportunity to attend the state STANYS Conference last November.

Outstanding Students and Teachers to be Recognized at the 40th Annual Awards Dinner in May

Brian Vorwald, Awards Co-Chair

Each year the STANYS Suffolk Section presents an Awards Dinner at which outstanding science students and science educators are honored. The dinner this year will be held on May 20, 2015 at Villa Lombardi's in Holbrook. Each high school science department from districts who are patrons of our *District Membership Services Program* nominate an outstanding graduating senior who is recognized at the Awards Dinner. At the dinner three teachers (elementary, middle level, and high school) receive our ***Science Teacher Recognition Awards*** for meritorious service as a science educator.

A letter will be sent in the third week of January to all building principals inviting them to nominate a member of their faculty for recognition as a Science Teacher of the Year. We invite you to assist us with our ***Science Teacher Recognition Awards Program*** by submitting a nomination form for an outstanding science educator. You may nominate a colleague or yourself to be a candidate for recognition as a Science Teacher of the Year: 2014 - 2015. The award recipient may be either a teacher of science or a science specialist who has made extraordinary contributions to the science teaching profession. Examples of such contributions are: (1) An outstanding teacher- One who helps students and other teachers both inside and outside the classroom with the delivery of science programs, organizes special student programs and has achieved success with special groups. (2) An innovative teacher - One who successfully introduces new programs, develops or revises curricula, teaching methods or materials. (3) A teacher serving other teachers - One who works through professional organizations such as STANYS, NSTA, NESTA, NABT, AAPT, AACT, BOCES, SCOPE, intra-school or inter-school programs, to provide ongoing help for student teachers, new teachers and veteran teachers.

To nominate a teacher for an award, use the form printed on the next page and feel free to duplicate it as necessary. The form will also be available on the Suffolk STANYS website at *http://www.suffolkstanys.org/* so that it can be downloaded. You can complete it and return it as an email attachment to the address noted on the form. Once we have received this form, an application will be sent to the candidate. Application materials will be completed by the nominee, and include more detailed information about the candidate, and instructions for including a professional resume, a personal response, and letters of recommendation. It will be the candidate's responsibility to complete all forms and obtain all required documentation. The scoring rubric that will be used to rate nominated candidates who submit documents for consideration is included in the pages following the nomination form.

Letters will be sent to all Suffolk County High Schools requesting student nominations. Please check if your district is a patron of the *District Membership Services Program* and is eligible to submit a student nomination. If not, there is still time for your district to enroll. Have an administrator contact me at ***BVorw@aol.com*** if they have questions about enrolling. If this isn't possible for this year, please consider supporting the program for next year.

"Nominate a deserving colleague for a Science Teacher Recognition Award."

Science Teacher Recognition Award

2015 Nomination Form

Science Teachers Association of New York State

Suffolk Section

Please use this form to submit a nominee for consideration for the *Science Teacher Recognition Award* and also feel free to duplicate as necessary.

PLEASE PRINT OR TYPE ALL INFORMATION

Nominee	**Name**	**Mr., Mrs., Ms., Dr.**	**First**	**Last**
	School District			
	School Name			
	School Address	**Street**		
		Town/Zip		
	School Phone			
	Email			
Person Submitting Nomination	**Name**	**Mr., Mrs., Ms., Dr.**	**First**	**Last**
	Position			
	School Phone			
	Email			

Please send the completed nomination form to:

Brian Vorwald

10 Media Lane

Stony Brook, NY 11790

Email: BVorw@aol.com

Best Teacher AWARDS

This form must be received by March 9, 2015

Suffolk STANYS Outstanding Teacher Award Scoring Rubric

Nominee _____

Award: ❒ Elementary Level (K - 5) ❒ Middle Level (6 - 8) ❒ High School (9 - 12)

Criteria	0 No evidence	1 Limited Evidence (Poor)	2 Limited Evidence (Fair)	3 Clear Evidence (Good)	4 Clear Evidence (Very Good)	5 Clear, Consistent, & Convincing Evidence (Excellent)	Weight	Score
Outstanding classroom teacher as verified by submitted documents	No letters submitted	1 letter with limited evidence	2 letters with some evidence	2 letters with evidence of effective classroom practices	2 or more letters with clear evidence effective classroom practices	2 or more letters with clear evidence of varied and effective classroom practices.	**X 4**	
Leader of Science Students. **Examples include but are not limited to Science Club advisor, Science Olympiad coach, Science Fair sponsor, other:**	No evidence	Less than 2 years; assisted in activities only	Less than 2 years in an activity	2-5 years as the leader in an activity; can include assisting in more than one activity for 2-5 years.	5 or more years as a leader of a science activity and/or leadership in more than one activity	More than 5 years as a leader of more than one activity	**X 4**	
Professional Development Activities	No evidence	Occasional participation in district PD only	Occasional participation in workshops and conferences	Evidence of on-going participation in PD	Specific detailed evidence of PD including attendance at conferences	Specific, detailed evidence of extensive, ongoing participation in PD including conferences.	**X 2**	
Participation as teacher-leader and/or trainer	No evidence	Has assisted in the delivery of a course or workshop and/or has assisted/mentored teachers in his/her school	Has been the primary presenter of a workshop or course and/or has trained and mentored teachers in his/her district	Has been a presenter/ trainer of least two workshops, or conference presentations; can include extensive mentoring in district	Specific and detailed evidence of significant participation in programs (courses, conference workshops, prof. develop	Specific and detailed evidence of extensive participation in programs (courses, conference workshops, prof. development)	**X 3**	
Professional association memberships and participation	No evidence	Past membership in a prof. association; Not currently a member.	Current membership in a prof assoc., No evidence of continual membership	Current and continual membership in at least one professional association	Specific, detailed evidence of active involvement in one prof. assoc.	Detailed evidence of involvement in multiple prof. groups and active involvement in at least one.	**X 2**	

Criteria	0 No evidence	1 Limited Evidence	2 Clear Evidence	3 Clear , Consistent, and Convincing evidence	Weight	Score
Noteworthy scholarly contributions to science education (examples include but are not limited to published articles in newsletters or journals, publications, curriculum development)	No evidence	One contribution	Several Contributions	Multiple and continuing contributions	**X 2**	
Received Awards and/or recognition (examples include but are not limited to school district award, PTA award, STANYS recognition, etc.)	No evidence	Evidence of one award	Evidence of two awards	Evidence of more than two awards	**X 2**	
Experiences in scientific work, advanced education or research. Examples include but are not limited to summer institutes, work in research labs, advanced education beyond the Master's level (i.e., PhD, EdD, SDA, additional certification)	No evidence	Some evidence of scientific work, advanced education (course work not culminating in a degree or certification)	Clear evidence of scientific work, advanced education (course work not culminating in a degree or certification)	Clear, consistent and convincing evidence of sustained scientific work , advanced education (culminating in a certificate or degree)	**X 1**	

Total Score:

Comments: _____

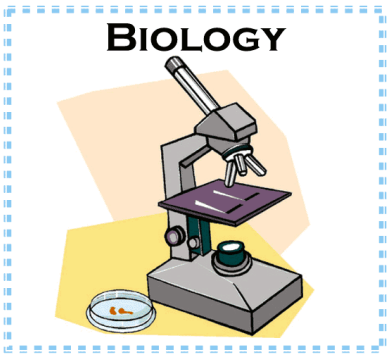
_____

_____

_____

Rated by: _____ Date _____

Subject Area Representative (SAR) Reports



Resolutions for the New Year

David Knuffke, Biology SAR

The beginning of the new year provides biology teachers with a great opportunity to pause, reflect, and implement any needed changes in their courses. If you have identified any aspects of your year that aren't going like you might have planned, why not take advantage of the upcoming hiatus to consider ways that you might address your areas of stress?

Of course, change can be difficult, and change for the sake of change is not going to have the kinds of meaningful results that a teacher might be interested in. Still, there are processes that teachers can use to make considered, meaningful changes to their practice to best ensure that the culture of the classroom is positively benefited by the change process. With that in mind, here are a few "guidelines" to keep in mind when considering how to go about making good, useful changes to a course midstream in the school year:

Be clear in your purpose. You are changing things that are important to you. It's important to make sure that all of the other stakeholders in your classes (your students, their parents, your administration) understand why you are making these changes, and what you think you will achieve by making them. One particularly useful approach is to have a brief discussion with your students about what they think is working well, and what isn't, and to use that as the basis for implementing change. If students know that you value their voice, they will be much more likely to buy-in to the changes you decide to make.

Think small. If you try to change too much, too fast, it's not going to work. This is particularly true of any mid-year changes that will affect a population of students who are already accustomed to the established practices of an ongoing classroom. With this in mind, it's important to choose wisely and sparingly when deciding what aspects of a course you might want to change here at the midpoint. Pick one or maybe two things that you think are most important to address, and stick to those few items. Resist the urge to "tear it all down and start over," as this will only upset your students (and quite possibly their parents).

Be consistent. Once you have decided what change(s) you are going to make, and you make them, make sure that you are consistent in your application of those changes. It is easy to fall back into old habits, and it's normal to be most comfortable with things that you have already been doing, solely because that is the way that you have always done them. But if you implement change(s) in an inconsistent way, this will only serve to confuse your students (and quite possibly the other stakeholders mentioned above).

Give yourself a break. Change will often have unforeseen effects, some of which may be somewhat negative. "Implementation dip" is a well-known phenomenon wherein performance is frequently negatively affected following the implementation of a particular change. This is normal, and is not, by itself, a reason for panic. By making consistent, small-scale changes, which are supported by clearly understood reasoning, you will be doing your best to make sure that any unforeseen complications are minimal, and that they can be easily dealt with when they arise.

The ability to consider and address what is and is not working in one's practice is a major part of being a "highly effective" educator. The midpoint of the school year provides all educators with a nice opportunity to make any mid-stream corrections that they feel are necessary. Making sure that those changes are clearly thought out, consistently implemented, and relatively small in scope, teachers can go a long way to making sure that the change process is beneficial for themselves, their classrooms, and their students.

Just Do the Science

Joe Malave, Elementary SAR

I've been teaching science for nearly 20 years at the High School, and Middle School level, and as a science coordinator in a K-8. I've seen so much chaff in the papers about global warming, that I've decided to add my two cents. These days two cents aren't worth much, but what the heck. What most people don't understand is that scientists are extremely skeptical people and scientific theories are created by analyzing experimental data and drawing logical conclusions.

Starting with the first item, before being accepted, all scientific research of the highest quality is submitted to experts in the field who will carefully review the work for meeting scientific standards and quality. The same can't be said for every book published on science. A research project and the paper that is written about it will only get published in a respected journal if it meets rigorous scientific standards. Otherwise, it gets rejected, or a request for modification and resubmission is sent to the author/authors. Once the research is published, the next step is to present the publication at scientific forums. After publication and the forums, scientists await contact from other colleagues in support of the research/experiment, or for outright opposition at various levels. This is a very important process. It vets out mistakes made in research, and raises questions that will further develop the knowledge of the topic.

The second point is that a scientific theory is not just an idea. Theories are developed after scientific inquiry and multiple observations of phenomena. A theory is established when multiple experiments support the concept. Most people think that theories are unproven ideas. However, in science, this is not the case. Think of it this way, a mathematical theorem is a proof of an equation or how the equation was derived. The same is true of a scientific theory, however, it is proven through experimentation or series of experiments.

Apply the above knowledge to the public debate on global warming. I say public because it is a much smaller debate in the scientific community as the majority of observations and data on the subject support the scientific theory of global warming. In fact, most of the experiments done to disprove global warming have, in fact, supported the theory. It is easy to get steered or swayed by an article on global warming because of your beliefs or feelings, but science is driven by the scientific process and is peer reviewed for accuracy.

Can I personally measure the total affects of carbon dioxide on global temperatures by doing a small experiment in a lab? Probably not, even the most complex computer program would have a large degree of uncertainty. In addition, it is easy to get trapped in a clever argument for or against an issue, but for such a complex problem, I prefer to simplify things. This way I can arrive at my own answer. As global warming is so complex, I prefer to measure the effects that I would expect as a result of global warming. Just as we can't see the atom directly, we can detect these invisible pieces of matter by how they react with other things or by indirect observations [ex: refer to Rutherford's gold foil experiment]. Think of radioactive matter; we can't see the atoms, but we can see the atom's effects on other matter.

So here are a few simple scaled down hypotheses. If global warming is causing a rise in global temperature, then Arctic sea ice will decrease in volume. Alternatively, if global warming is causing an increase in global temperature, then the continental ice sheets in Greenland and Antarctica will decrease in volume. Finally, if continental ice sheets are decreasing in volume due to global warming, then sea levels should be rising. I should have included a rationale for each hypothesis, but in general, as arctic temperatures rise above ice's melting point for more days than water freezes, ice caps and glaciers reduce in volume. Elementary, yes!, but that is the point.

So now all we need is data. This could be a long haul for an experimenter, but fortunately, there is plenty of high quality data to be found in Google Scholar. If you have an account to a scientific database (ie: GeoRef or Science AAAS) which would have higher quality data, go for it. Alternatively, you could visit a library with access to a scientific database. I actually started using 50 years of sea level data from a NOAA sea buoy off of Montauk. I then had my students plot the data. Then, I branched out into other scientific databases to prove or disprove my other hypotheses. This can lead to a great class inquiry and scientific debate. After you personally collect the data, I think you will arrive at the same conclusion that I did. Wait, what conclusion? Sorry, it wouldn't be good science for me to simply tell you. Arrive at the facts for yourself and you will be learning (and potentially teaching) the scientific approach of proving a theory.

iPad Apps for the Earth Science Classroom

Melissa Torre
Earth Science SAR

If your school is like mine, iPads are the way of the future. My school just recently got an iPad cart that can be used throughout the school. The iPads came with very limited apps but we are encouraged to request them, especially if they are **FREE**. The iPads have the potential to change the science classroom in dynamic and exciting ways. Below are some apps that I have found. Some of the apps I have used already and some I plan to use in the future.

EarthViewer: What did Earth's continents and oceans look like 250 million years ago, or 1 billion years ago for that matter? Can we say anything about Earth's climate as far back as our planet's origin? *https://itunes.apple.com/us/app/earthviewer/id590208430?mt=8*

iSeismometer: Start iSeismometer, leave it on your desk, then try tapping somewhere. You will realize how sensitive an iPhone is! *https://itunes.apple.com/us/app/iseismometer/id304190739*

SkyView: Brings stargazing to everyone, and it's totally free! Simply point your iPhone, iPad, or iPod at the sky to identify stars, constellations, satellites, and more!
https://itunes.apple.com/us/app/skyview-free-exploreuniverse/id413936865?mt=8

NASA: Come explore with NASA and discover the latest images, videos, mission information, news, feature stories, tweets, NASA TV and featured content with the NASA App for iOS.
https://itunes.apple.com/us/app/nasa-app/id334325516

NASA EarthNow: NASA's Earth Now is an application that visualizes recent global climate data from Earth Science satellites, including surface air temperature, carbon dioxide, carbon monoxide, ozone, and water vapor, as well as gravity and sea level variations. Data sets are visually described using "false color" maps. Color-coded legends are provided to indicate relative strength or weakness of an environmental condition.
https://itunes.apple.com/us/app/earth-now/id494633346?mt=8

The Weather Channel: The Weather Channel for iPad combines interactive and beautiful imagery with WEATHER(TM) expertise. With over 200 meteorologists and ultra-local TruPoint(sm) forecasting technology, The Weather Channel helps you plan the best day possible for any season.
https://itunes.apple.com/us/app/the-weather-channel-foripad/id364252504?mt=8

NOAA Now: Want to keep up with the latest severe weather? NOAA Now provides the latest information from the National Oceanic and Atmospheric Administration including: hurricanes and tropical storms in the Atlantic and Eastern Pacific cyclone basins; mainland storms, including the latest tornado and severe thunderstorm alerts; animated satellite views of the United States and the Atlantic, Pacific and Indian oceans; the latest marine conditions from the National Data Buoy Center. All data is courtesy of NOAA and NASA. *https://itunes.apple.com/us/app/noaa-now/id425914352?mt=8*

QR Reader for iPad: The most simple and easy QR Reader. Now scans QR codes, barcodes and even creates PDF files with the "Scan to PDF" feature. *https://itunes.apple.com/us/app/qr-reader-for-ipad/id426170776?mt=8*

Just Science: The Just Science app can help students explore the science behind climate change. Featured in the app are maps that highlight the temperature in different parts of the world and show how temperatures have changed over time. Also included in the app are news articles and links to relevant Wikipedia content. *https://itunes.apple.com/us/app/just-science/id480905653?mt=8&ign-mpt=uo%3D8*

Does Just Money Make a Difference?

Ed McDaniels – Retiree SAR

On a cruise to Bermuda, my wife and I shared a hot tub with another couple from Kentucky. The wife was on a local school board as is my wife. They commiserated about the state of education and the challenges that both teachers and Boards of Education faced implementing new standards. Since she knew I had taught physics she proudly commented on the millions of dollars they had spent recently to upgrade the computers and lab equipment for the science courses. I asked, "Did it make a difference?" She looked at me and said, "Of course." I followed with a data driven question, "How do you know? What are your teachers doing now that they couldn't have done before? What new and deeper understandings do the students have now, that they didn't have before?" Those questions made her think a bit. The prevailing wisdom is that more money automatically means better teaching, more thoughtful and meaningful understanding by students and better results on standardized tests. The last one is what most administrators really care about.

I have worked in districts that didn't have much money and in districts that had greater wealth. More money is better. However, just throwing money or computers or lab probes into a science class doesn't necessarily guarantee better understanding by students. I have seen fancy probes and measuring devices become magic "black boxes" that make the collection of data quicker, more accurate and unfortunately, more removed from the students. They get better numbers but have even less insight into the process that they just measured. Unless teachers understand the power and opportunity that these wondrous tools provide, they do the same old labs but now students do less work. Often an administrator has felt very proud to have provided the science department with these expensive and therefore good devices. But there was no plan, there was no analysis about how to add depth to the students' understandings. The question, "What do the students not understand about this lab and how can I improve their understanding with this new probe?" was never asked. Often teachers are not given the time to develop new lab activities with the new equipment. So, they do the same old lab but with these shiny new boxes. There is probably less student engagement because they just read the numbers on the computer screen without any more connection to the process going on in front of them. An opportunity is lost.

Years ago, with one of the first temperature probes and a brand new IBM XT, yes really that long ago, I set up a simple demonstration with my non-Regents physics students. I had a beaker filled with water and ice. I slowly moved the tip of the probe deeper and deeper into the beaker and we graphed the temperature versus the depth of the probe in the water. As the probe went down, so did the temperature. They knew that hot air rises so the idea that cold water would sink was understandable. Down the probe went, down went the temperature, all was right with the laws of physics. But wait a minute, an anomaly. We reached 0 degrees in the water but as the probe went even deeper the temperature started to rise. It went to 1 degree, 2 degrees, 3 degrees and finally at the bottom it reached 4 degrees. Was there something wrong with the probe? Was there something unusual about the water? Had I screwed up another demo? The last explanation was the almost unanimous choice by the class. Great discussions took place between the students as each one tried to defend their explanations of this mystery. Finally, I asked, "Why does ice float?" For many, that was a stumper. Then a student chimed in that the ice must be less dense than the water. I followed with, "Then the densest water must be at the bottom of the beaker and the lightest thing in the beaker, the ice, must be at the top." While that made sense to them they were unsure why the 0 degree water was not at the bottom since colder air was always under hot air. We began to discuss how ice crystals form and how the hexagonal ice crystal occupied more volume than an equal number water molecules. Ah, now their understanding matched their observation. All was right with the world again. I had used technology, the sensitive temperature probe, to do something I could not as easily do with a regular thermometer. In my estimation, the expense of the new equipment was justified. It had made an impact on my students' understanding and appreciation of the world around them. I'll take those results any day. Would it necessarily show up on a standardized test? Maybe, but that day every student learned something new and something they could see in the world around them for the rest of their lives. Perhaps the next time they have a drink with ice cubes floating in it, they will think of their physics class.

Science Movie Review & Potential Learning Strands: *Interstellar*

Leading Cast: Matthew McConaughey, Anne Hathaway, Jessica Chastain, Michael Cain

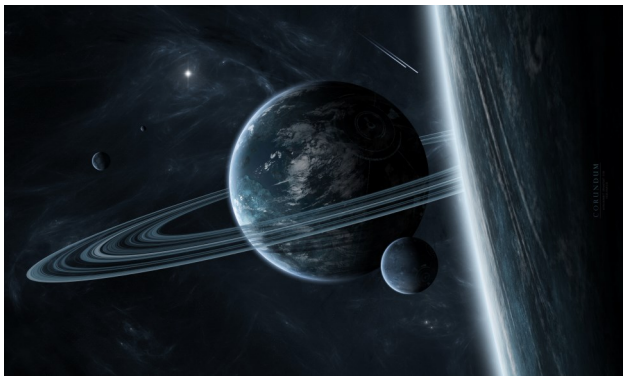
By Joe Malave

Once in a while, a movie will attempt to do the science accurately. *Interstellar* is one of those movies. While much of the subject matter focused on astrophysics, there were many other classroom topics covered. The movie was written so that it could be shown to young students without the use of inappropriate language, nudity, sexual innuendos, or gore. However, the movie's length limits its use to a Friday night movie night, or a distance field trip on a bus with a DVD player, or playing it in segments. **Spoiler Warning:** I like these kind of science fiction movies...and the following contains spoilers. So skip this article if you are concerned about spoilers!! I thought Interstellar was deep on many, many levels! *Interstellar* will inspire people to debate about the science of the movie and therefore think more about science in general, an educational and motivational win!!

I liked Interstellar a lot! What 3 hours? I didn't yawn once! My mind was transported through a worm hole and landed in a tesseract! After each stunning scene, my thoughts reverted to thinking about quantum mechanics, wave function collapse and subsequent multiverse theory. That in turn led to thoughts on Schrodinger's Black Cat experiment and the famous Double Slit experiment. So wow...I thought the movie was a mind trip! My fifteen year old son, the extreme movie critic, liked it too!

The movie delved into many areas of science; biology, genetics, earth and atmospheric sciences, extinctions (via a plague), space sciences, robotics, physics, and engineering. The concept of relativity was used extensively in the movie and that brought to mind the Twin Paradox and General Relativity. One possible Interstellar strand involved mass species loss and climate change. On a personal note, I'm concerned about the lack of discussion in the media about the current mass species loss within our biosphere (probable anthropogenic 6th extinction). So the idea of the movie passing various ecological tipping points, might get some people to actually think about the potential affects of mass species loss and climate change on man, civilization, and the economy. I've had students try to prove if a 6th extinction is ongoing, globally and locally.

I liked the fact that the movie didn't use sound in space when the retro rockets fired. I discuss that in class when I teach about sound waves. I thought the model of the worm hole with reflections of celestial objects from the other side was fascinating. I liked the model of the black hole as black sphere with an event horizon, as opposed to a two dimensional circle with an event horizon. A character mentioned that the spacecraft walls were “mm of aluminum”. Far thinner than sheet metal on cars, a reality on modern spacecraft. The LEM built at Grumman used extremely thin walls. Take a class to the Cradle of Aviation museum, and have the students compare the sheet metal used on the LEM to various modern aircraft. I liked the name associations to Gordo Cooper and Vance Brand. Gordo Cooper was an original Mercury 7 and Gemini astronaut.



The movie did have scientific glitches. The crew explored a planet orbiting a black hole that was experiencing relativistic time effects. Raising any concerns? Skipping over the fact that if the planet was close enough to the black

(Continued on page 23)

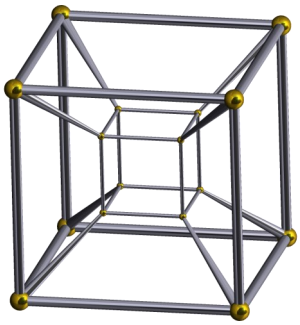
(Continued from page 22)

hole to be within the black hole's relativistic time effects, by modern theory, it would be in a fatal radiation zone. Ignoring the radiation problem, if time was proceeding extremely fast for the astronaut orbiting in the command ship over the first planet explored (Miller's planet), relative to the landing party, then as the craft descended to the planet he would have been able to monitor the time dilation first hand. He seemed surprised that it took 23 years for the crew to return, which to the crew had only been a few hours. I was also concerned about the supplies and fuel needed for an unplanned 23 year orbit, not to mention the repairs of an aging ship. I liked the fact that the crew discussed managing time as a resource. The other debatable science theory involved the descent of Cooper and his robot into a black hole. I was expecting them to spagettify, but the lack of tidal forces inside that black hole resulted in a harmless ride. The movie was right to point out that Gargantua (the black hole in the movie), was unusual for its size and general properties. That idea opened up 'fringe science' ideas to be introduced, so perhaps don't tell your students and see if they can figure it out!

Things that I'm perplexed about and left wondering about include the idea that 'love' can be a quantifiable force or another dimension of our existence capable of transcending into other dimensions. Did 'love' have a quantum effect to create a tesseract in the fifth dimension, assuming this black hole had extremely weak gravitational tidal forces, or was matter transformed and multiversed into the tesseract? Was God at work in the creation of the worm hole, the unique black hole and black hole adjacent habitable planets? Were advanced beings at work? Was it us on a quantum level? Lots of fun questions, and I think this movie will challenge 2001 for some visual and scientific firsts in a movie. Maybe the use of the name Cooper is a clue. Gordo Cooper claimed to see photos of a UFO taken by military photographers at a secure military landing site, which he maintained till his death. So perhaps the placement and formation of a navigable worm hole was the work of advanced beings. It reminded me of the use of black monoliths in the movie *2001: A Space Odyssey.*

All in all, *Interstellar* was a great movie for me and it s full of science that can be used to enhance classroom instruction. Next, I'm going to buy and read the book !

Graphic depiction of the black hole "Gargantua" from the movie *Interstellar.*



"*That tesseract is not inside the black hole — it's a four-dimensional cube, with four space dimensions and time — it lives in the Fifth Dimension "*

44 Teams Participate in 2nd Islip Science Olympiad Invitational Tournament

Matthew Christianson

On December 13, the Islip Science Olympiad program hosted its second annual C Division Invitational Tournament. Compared to the previous year, the invitational doubled in size, as 44 teams competed in the 23 national events, the two New York State trial events, and two fun trivia events. The tournament hosted schools from across Pennsylvania, New Jersey, New York City, upstate New York, and Long Island where over 600 students competed in events focused on areas in science and engineering.

Each year, high school teams throughout New York compete in regional competitions for a chance to reach the state competition held in March. The national events held each year consistently change in an effort to stay current with the ever-changing knowledge in the areas of biology, chemistry, physics, geology, mechanical engineering, and technology. In order to be successful, students must be able to work together in order to prepare for either the written examinations or the trials of their built devices. The invitational tournaments therefore help the attendees gauge areas where they might need further preparation before the decisive regional competitions. The Islip Invitational is currently the only tournament of its kind on Long Island, and the largest in New York State.

The competition was tight, as the top five teams were separated by a mere twenty points. The top five teams were as follows:

1st Place: Ward Melville HS (Setauket, Long Island) - 146 pts

2nd Place: Half Hollows Hills East HS (Dix Hills, Long Island) - 153 pts

3rd Place: Princeton HS (New Jersey) - 163 pts

4th Place: Townsend Harris HS (New York City) - 165 pts

5th Place: West Windsor-Plainsboro HS (New Jersey) - 166 pts

The Islip Science Olympiad team is looking forward to hosting its third annual invitational tournament next year. The preliminary date for the competition is December 12, 2015. The team would like to thank the student volunteers from Stony Brook University for their tireless work in assisting with running and grading of the events. The team would also like to thank the event sponsors (Long Island STEM Hub, Brookhaven National Laboratory, and Stony Brook University) for without their contributions, the invitational would not have been a success!

Above: Students testing the efficiency of their bridge. Right: The Ward Melville HS team celebrates their victory

Grant Opportunities

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

Left: Suffolk members at annual state STANYS conference enjoying evening activities. Above: scenic downtown Rochester.

Science Matters to all Teachers and Students!

Nancy Ridenour

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 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://www.nsta.org/sciencematters/*

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

GRANTS *(continued)*

Funder: **Motorola Solutions**

Program: Innovation Generation Grants

Summary: The Foundation will provide $4.9 million in funding to U.S. science, technology, engineering and math (STEM) education programs. This year's grants will be allocated by two categories. Local Impact Grants target innovative, hands-on STEM education programs for U.S. elementary through university students and teachers. Grant requests must be between $15,000 and $60,000 for projects that start after June 2015. National Partnership Grants support large-scale, multi-regional STEM education programs that impact at least 150 primary participants.

Deadline: 30 April 2015

Region: Long Island

URL: *http://responsibility.motorolasolutions.com/index.php/solutions-for-community/com02-foundation/*

Funder: **International Paper Foundation**

Program: Environmental Education. Literacy. Health and Human Services

Summary: The two primary areas of support are environmental education and literacy. ENVIRONMENTAL EDUCATION. We are looking for programs that help generations understand a sustainable approach to business that balances environmental, social and economic needs. Given the vast nature of this subject area, the Foundation has decided to focus on: programs that coincide with content from the pbs.org website ECOinvestigators; science-based programs targeting children; outdoor classrooms at schools or in communities; outdoor science programs tied to forestry, air or water quality; programs that educate and promote recycling and composting. LITERACY. program that enhance reading materials at school and community libraries; programs that enhance the reading skills of children; programs that teach English as a second language.

Deadline: Open. Grants are reviewed quarterly.

Contact: 800-236-1996

URL: *http://www.ipaper.com/US/EN/Company/IPGiving/IPFoundation.html*

SCIENCE on LONG ISLAND

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**
–
TWO for the price of one!

AND the Suffolk Section of STANYS is all about Service to You, the Long Island Science Teacher!

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 27) Membership

**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.

2014-15 Dates:

Thursday, October 2

Wednesday, November 13

Thursday, December 4

Wednesday, February 4

Thursday, March 5

Wednesday, April 1

Thursday, May 7

Wednesday, June 3

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

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	o $44.00	o $82.00
Intermediate/Jr. HS	o $44.00	o $82.00
High School	o $44.00	o $82.00
College	o $44.00	o $82.00
Associate	o $44.00	o $82.00
Retired	o $23.00	o $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.

PAYMENT OPTIONS

☐ CHECK - Payable to **STANYS**

☐ VISA ☐ MasterCard

_____
Print Cardholder's Name

_____
Card Number Exp. Date CW2 Code

Membership $_____

Contribution $ _____

Total $_____

**Enclosed is my tax-deductible

contribution of $_____

to: o STANYS Foundation

o Fellows Conference Award

*Membership dues are not refundable.

STANYS DOES NOT ACCEPT

PURCHASE ORDERS

STANYS:

PO Box 2121

Liverpool, NY 13089-2121