



The Science Explorer

Science Teachers Association of New York State
SUFFOLK SECTION Newsletter

Volume 40

Number 2

Winter 2012

The Chairperson's Corner



Glen Cochrane

Welcome to our first electronic newsletter. As you can imagine, the cost of printing and mailing paper copies has become prohibitive, but with electronic media, we are able to share our stories, events, and news with our members.

The newsletter has been emailed to all Suffolk members and posted on our website. One advantage is that we are not limited to number of pages, and we can use color. I hope you enjoy this edition.

Suffolk Science Teachers have been involved

in a number of events over the past few months and we are looking forward to a few more in 2012. Unfortunately, MATEX was postponed since it was scheduled at the same time as the National Science Teachers Associations (NSTA) conference in Hartford, Ct. I'm sure many teachers would have attended but many of our vendors couldn't make our event.

A wonderful day was had by all who attended Atlantis Marine World in Riverhead. Chris Brady and his team of educators took us for tours behind the scenes, informed us as to what they could offer our students, and showed us the workings of the Riverhead Foundation for Marine Research and Preservation.

The following weekend, Gary Vorwald

Special Dates of Interest:

- Eastern LI "C" Division Science Olympiad: February 4, 2012
- Museum of Natural History Trip: Sunday, February, 19, 2012
- Eastern LI "B" Division Science Olympiad: March 17, 2012
- Suffolk STANYS Annual Conference: Saturday, April 21, 2012
- Long Island Science Congress: March 28-29, 2012

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Atlantis Marine World Aquarium Trip

Glen Cochrane



On Sunday November 16, about 50 teachers and families enjoyed a beautiful fall day at Atlantis Marine World in

Riverhead. Chris Brady and Educational Department did a fantastic job showing us what is available at this world class facility. We started with a Behind the Scenes Tours where we learned about feeding the sea lions, saw baby penguins, and heard fascinating details about the exhibits. Chris shared with the teachers lots of information about the animals and ecosystems as we looked at their diversity of tanks. The children in our group were particularly thrilled to touch whelks, horseshoe crabs, and sea ray in specially de-

signed touch exhibits. The tour continued to outside exhibits of penguins, otters, snow monkeys, and a sea lion show in the theater. Several teachers ended the day with a tour of the Riverhead Foundation for Marine Research and Preservation facility.

Atlantis Marine World is extremely accommodating for school groups. The admissions fees are very reasonable and the programs are a bargain. The offerings of the Education Department span all ages and interests. I have been to several aquariums and I can say this is one of the best. I highly recommend a visit to this Long Island gem with your classes and families. Photos from the trip are on pages 6-7. ■

Website & Facebook

Melissa Montauk

Suffolk STANYS has an updated website at:

www.SuffolkSTANYS.org

The site is there as a tool for everyone to use. It will be continuously updated so please come back to the site frequently to see what our new poll is, find out about upcoming events, print forms, see photos of past trips, and find great websites to use in the classroom.

Science Teachers Association of New York State (STANYS) has made a page on Facebook, so all you facebookers come and join our over 160 fans. This is a great way to talk about possible trip ideas, talk with teachers around the state, find out about great videos, articles, and websites.

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

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)*(Continued from page 1)*

led a group of teachers and friends to the Sterling Hill Mine in New Jersey. They traveled on a coach bus and had a great day of collecting florescent rocks and exploring the mine. See photos from the trip on page 8.

The first weekend of November took us to the STANYS Annual Conference in Rochester. This was the first STANYS Conference I've attended since the old Nevele days. What an incredible upgrade! The field trip to Wards Scientific was fascinating with tours of their departments and lots of opportunities to put our hands on rocks, animals, forensics, and slides. The food was excellent and the company made for good fellowship. At the board meeting I learned of the upgrade to the STANYS website. This will be a major revision and should be a wonderful resource for the science teachers of New York. Each section will have web pages and a chance to keep local science teachers up to date with section events. The website should be launched any time now. I expect it will be available later this winter or early Spring.

At the Conference, two Suffolk teachers were honored by STANYS. Our own Gary Vorwald, former Chairperson of the Suffolk Section and current newsletter editor, was recognized with the STANYS Excellence in Teaching Award.



Jaclyn Stiegert, a 3rd year Earth Science teacher, received the Fellows New Teacher Award. See article on page 4.

Unfortunately, I had to return to Long Island for my classes on Monday so I only sampled a couple of the Sunday workshops. I wish I had the chance to stick around and take advantage of all that was available. If you haven't attended a large conference like STANYS, NSTA or NABT, I recommend you do.



Our next program is a family field trip to the American Museum of Natural History on the first Sunday of Winter Break. I hope some of you can join us at the museum. Information is on page 5.

This spring, SCSTA will once again host our Conference and our annual Awards Dinner. **Spring into Science Conference** will be at Brookhaven Lab on Saturday 4/21/12. Plans are for a keynote speaker, workshops, tabletop presentations, and a luncheon. Our last event of the year will be our annual Awards Dinner in May. At the dinner, Suffolk STANYS honors teachers as well as an outstanding senior science student from each member school.

I look forward to seeing you at some of our programs. Have a successful and enjoyable rest of the school year. ■



Save the Date!

SCSTA Spring Conference for Elementary and Secondary Teachers

Saturday, April 21, 2012

The Suffolk County Science Teachers (SCSTA) along with the Office of Educational Programs at Brookhaven National Lab (BNL) will hold a Spring Conference on Saturday, April 21, 2012 at BNL in Upton, NY. You will have an opportunity to attend morning and afternoon workshops, and network at a multidiscipline Share/Take-a-thon during breakfast and lunch. Our keynote address by staff from the Office of Educational Programs will be about the numerous opportunities for students and teachers available at Brookhaven National Laboratory. The program has been designed to appeal to upper elementary, intermediate, and high school teachers. Directions to BNL can be found at www.bnl.gov.

We are especially excited to have workshops geared just for **elementary teachers** this year along with two special sessions conducted by NASA for middle and high school teachers where subject-related demonstrations and an abundance of free educational resources will be available to take back to the classroom.

Register by April 14th for an early bird registration fee of \$40 per person for STANYS members, \$50 for non-members and \$25 for pre-service teachers (college students). Registration includes a light breakfast, lunch, all seminars/workshops and door prizes. We look forward to seeing you on April 21st.

Registration will be online using the Eventbrite website at: <http://scsta2012.eventbrite.com/>

If you have any questions, contact Glen Cochrane at gblink735@gmail.com

Two Suffolk STANYS Members Honored at State Conference

Glen Cochrane

Two Suffolk science teachers were recognized as outstanding science educators at the annual STANYS Conference, which was held at the Riverside Convention Center in Rochester last November. These awards, given annually by the state association, recognize excellence in teaching.

Jaclyn Steigert, a third-year teacher was the recipient of the **Fellows New Teacher Conference Award**. Jaclyn teaches earth science at Murphy Junior High School in Stony Brook. This award benefits the career of promising second- or third-year science teacher and supports his or her attendance at the Annual STANYS Conference. As a second year teacher, Ms. Stiegert brought considerable enthusiasm for science education into her classroom. She has implemented hands on field trips for her students, incorporated research activities in her classroom, and helped coach the Murphy Science Olympiad team, which placed 1st in the Eastern Long Island Tournament last year. She was honored by STANYS for her passion and dedication to students in the classroom. We hope that her first STANYS conference was successful and hope to see her in the future.

Gary Vorwald was honored with **The 2011 Excellence in Science Teaching Award** as one of two outstanding intermediate school teachers. Gary teaches Earth Science and Science Research at Paul J. Gelinis JHS in Setauket. He uses his classroom to offer his students hands-on activities to promote inquiry learning and he strives to enrich students experiences in science and technology. I know Gary has taken students into the field to collect minerals, fossils, and visit museums. His love of science teaching shows in his superior coaching of the Gelinis Science Olympiad team which has four New York State Championships and eight trips to the National Tournament since 2000. He has inspired numerous students to excel in the sciences in high school, university and on to a career. Gary serves as the Science Department Chair, Earth Science Mentor and is an integral component of Suffolk Science Teachers. Gary Vorwald is truly deserving of an award is given to teachers who exemplify the mission of STANYS, which is to promote excellence in science education and provide opportunities for all students to participate in and learn science.

We are proud to have these teachers as members of our section. ■



Gary Vorwald and Jaclyn Stiegert, both from the Three Village CSD, received the Excellence in Teaching and Fellows New Teacher Awards at the annual conference in November.

A Family Tour of the American Museum of Natural History

Sunday, February 19, 2012

10:00 AM to 2:30 PM



Join Suffolk science teachers and their families for a visit to one of the premier natural history museums in the country. Suffolk science teachers Brian and Gary Vorwald will give a guided tour of the Gottesman Hall of Planet Earth. Student guides and teaching materials will be provided for each teacher registrant. **We will meet at 10:00am by the Rose Center entrance** (West 81st Street), just west of Central Park.

After we tour some of the highlights of the museum, please join us for lunch in the museum cafeteria at 12. Or, if you prefer, venture out and enjoy one of the delicious options that are available nearby. However, stick around in the cafeteria – this is a great opportunity to meet and mingle with some of your fellow science teachers from around Suffolk county.

At 1:30, we plan to meet up again and continue our exploration of the museum. Those who have made a prior reservation will have the opportunity to tour a special exhibit: ***Beyond Planet Earth: The Future of Space Exploration***. This exhibition offers a glimpse into the future as humanity attempts to explore our solar system and beyond. Highlights within the exhibit include a full sized recreation of a lunar habitat, a model of a space elevator reaching into space, walk-through diorama of the Martian surface, and challenging computer interactive exhibits. Learn about robotic missions that are currently headed deeper into our own solar system, and explore some possible missions of the future: returning humans to the Moon, landing on and deflecting a potentially deadly asteroid, or traveling to Mars - and perhaps even establishing colonies there. More information about this exhibit can

be found here <http://www.amnh.org/exhibitions/beyond/>.

When we have concluded our visit of the special exhibit, stick around to collect your in-service certificate. We will be handing out the in-service certificates for 4 hours of professional development. After we have handed out the certificates, you are welcome to continue explore the museum with us, wander about on your own, or leave the museum to enjoy the rest of the city.

Please check the museum's website for more information about available exhibits, IMAX shows, and planetarium shows:

<http://www.amnh.org>

Mark Sunday, February 19 on your calendar and be sure to register for this event at the eventbrite website:

<http://scstatouramnh-esearch.eventbrite.com/?srnk=1>

Cost: Adults: **\$26.00 ***
Children (2-12): **\$15.00**
Senior/Student with ID: **\$20.00**

* *The cost listed here includes museum admission, admission to the special exhibit, and a processing charge for Eventbrite.*

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

The Museum is located at 79th Street and Central Park West and is easily reached by public transportation. The main entrance to the Rose Center for Earth and Space is located at 81st Street between Central Park West and Columbus Avenue. Parking is available in the museum parking garage for a fee (it is pretty expensive with NYC prices).

REGISTER NOW, DON'T DELAY!

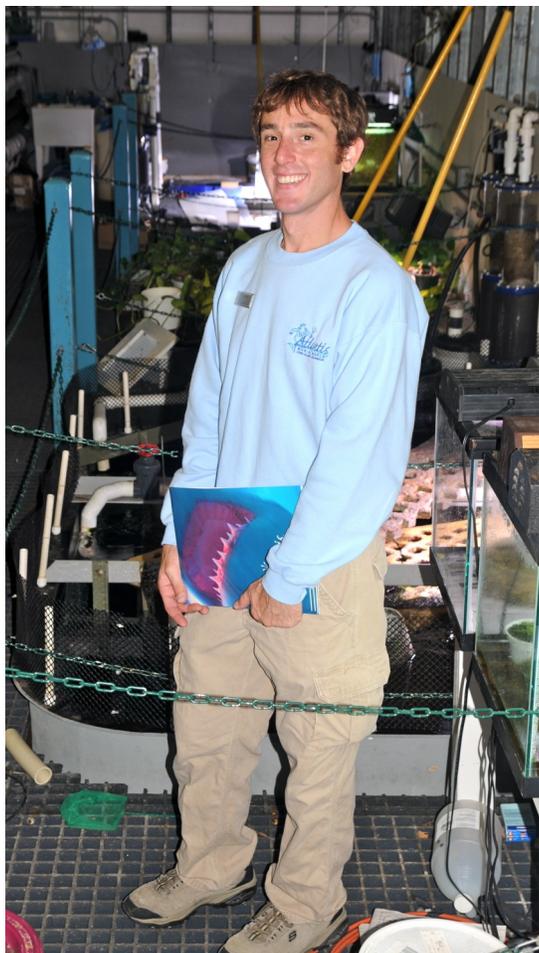
Sales end February 12



Suffolk STANYS teachers went behind the scenes at Atlantis Marine World Aquarium last October.



Atlantis Marine World Aquarium Trip



Top Left: Aquarium educator Chris Brady coordinated our trip and led tours behind the scenes.

Above: Glen Cochrane and a Suffolk STANYS member learned about opportunities for teachers and students at Atlantis Marine World.

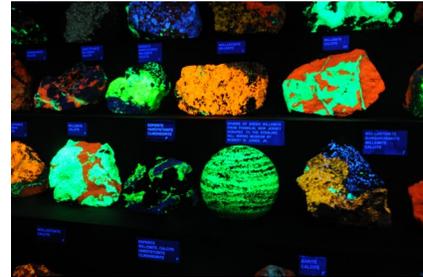
Left: teachers learn how marine world staff maintain and support the various tanks and exhibits.

Sterling Hill Mining Museum Trip

Right: the tour of the zinc mine was led by a retired miner.

Upper right: view inside the mine.

Far right: exhibit of fluorescent minerals.



Middle Left: Earth Science teachers never leave home without their trusty Earth Science Reference Tables! Pictured are , Stephanie Burns, Jessica Conrad, and Danielle D'Agostino from Connetquot High School. Middle Right: Ryan Vinberg and Greg Wagner from Island Trees Middle School collect fluorescent minerals for their classrooms.

In November, Gary Vorwald led a trip to the Sterling Hill Mining Museum in Ogdensburg, NJ. The group of 55 teachers, their families, and students, toured the underground zinc mines and museum. This site is world famous for its unique fluorescent minerals that are associated with the metamorphic marble deposits. Everyone had a chance to collect minerals after the tour. Teachers received a certificate for 6 hours of professional development.



Above: students from Paul J. Gelinas JHS with their teacher, Gary Vorwald

From the Lieberrian's Laptop

Kristina A. Holzweiss

I am a librarian with a special interest in science. I wanted to make you aware of a few resources that many teachers have found useful.

Your students will love the **Max Axiom, Super Scientist** series, written by various authors. There are currently 24 titles in this set that are written for elementary and middle school reading levels 4 – 6. Each book helps teachers to offer their students a fun, visually-appealing way to understand scientific concepts. They are useful for students to approach science in daily language using scientific terminology. Examples of titles include: ***Investigating the Scientific Method, A Crash Course in Forces and Motion, The Explosive World of Volcanoes, The Basics of Cell Life, and A Journey Through the Digestive System***. Each color-filled compact book is divided into sections, and includes a table of contents, other interesting facts, a short list of related books, a glossary, and an index. The comic book style follows our hero Max Axiom, as explores the topic as he “speaks” to the reader. Students and teachers also have exclusive access to a hotlist of related websites created by Capstone Press and located at <http://www.facthound.com>. Each title in the series has its own ID number associated with the hotlist. This series of books provides students with a simple introduction to the subject. The books can also serve as models for the students to create their own comic strips on other science topics.

Are you looking for a simple, multi-sensory resource for teaching your students about the scientific method? Save the **Scientific Method WebQuest** at <http://learnedtech.com/method/#> created by eMints* science teacher Dan Tripp in your favorites, or link it to your school website. Your students can work at their own pace to learn about the steps of the scientific method: observations, scientific question, variables, hypothesis, procedures, results, and conclusion. Each page focuses on a specific topic in a visually-appealing, yet uncluttered format. At the top there is an explanation of the step and a short description of it. Below it is a video of Dan explaining the step, as well as an audio clip. Each page ends with a short quiz. This is a great introduction or review of the scientific method that the students can use with or without their teachers.

*eMints (enhancing Missouri's Instructional Networked Teaching Strategies) is a national program to help teachers prepare their students to become 21st century learners.

Teachers and students can collaborate with one another through **DabbleBoard**, an online interactive whiteboard located at <http://www.dabbleboard.com>. You can use some whiteboard capabilities without SmartBoard or Promethean software. You can create mind maps, concept maps, organizational charts, mock ups, flow charts, diagrams, and illustrations. Especially useful for science teachers, you can upload your own images and documents. That means you can use that great science worksheet that you found by simply scanning it and uploading it to DabbleBoard. Voila! Then you can use the freehand drawing tool or type in text. There are even mathematical symbols that you can use. Each DabbleBoard has its unique link that you can customize and share with others, or you can download your project as an image.

The real power of DabbleBoard lies in its interactive features. An initial user can create a **DabbleBoard** account using an email address. Other users can collaborate on this same site without an account, as long as they have the link address. Small groups can collaborate to create their own presentations or to work on math concepts as classwork, homework, or test review. At your discretion, your students can chat with one another in the message center about their work, and even video chat if they have access to web cams. What a great way for your students to connect with other students in a secure environment! Teachers can also use DabbleBoard for professional development by creating their own virtual online classroom. For a demonstration of DabbleBoard visit <http://tinyurl.com/dabbleboardtutorial>.

Visit my site at <http://lieberry.weebly.com> and join my Edmodo group at The Lieberry #siutd6. ■

Outstanding Students and Teachers to be Recognized at the 37th Annual Awards Dinner in May

Brian Vorwald

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 in May 2012 at the Islandia Marriott Long Island Hotel. 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. Letters will be sent to all Suffolk County High Schools requesting nominations for the outstanding senior science student. Please see if your district is a patron of the **District Membership Services Program** and is eligible to submit a student nomination. If not please consider supporting the program for next year.

Also at the Annual Awards Dinner, three teachers (elementary, middle level, and high school) will receive our *Science Teacher Recognition Awards* for meritorious service as science educators. 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 recognitions 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 - 2012. A nomination form is provided on page 8 of this issue.

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 include but are not limited to:

(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 ma-

terials. (3) A teacher serving other teachers - One who works through professional organizations such as STANYS, SCSTA, NSTA, BOCES, 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 page 8 and feel free to duplicate it as necessary. Once we have received this form, a nomination packet will be sent to the candidate. 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 can be found on pages 12-13 of this issue. We look forward to receiving your nominations!



New Standards for Science Education Being Developed

A consortium of partners, led by the National Research Council Framework Committee, published a national "Framework for Science Education" last summer. New York State is a partner in this endeavor and is participating in the development of "Next Generation Science Standards" which will be adopted in August 2012. The draft of this document is scheduled to be released for review by February 2012. For updates and more information, visit the following websites:

Science Curriculum and Assessment Update:

<http://eservices.nysed.gov/vls/newsDetail.do?contentID=25612>

Conceptual Framework for New Science Education Standards

http://www7.nationalacademies.org/bose/Standards_Framework_Homepage.html

Next Generation Science Standards: <http://www.nextgenscience.org/>

Science Teacher Recognition Award 2012 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		Mr., Mrs., Ms, Dr.	First	Last	
	School District				
	School Name				
	School Address	Street			
		Town/Zip			
	School Phone				
Email					
Person Submitting Nomination		Mr., Mrs., Ms, Dr.	First	Last	
	Position				
	School Phone				
	Email				

Please mail the completed nomination form to:

Brian Vorwald
10 Media Lane
Stony Brook, NY 11790

This form must be received by **March 1, 2012**

Suffolk STANYS Outstanding Teacher Award Scoring Rubric

Nominee _____

Award: Elementary Level (K - 4) Middle Level (5 - 8) High School (9 - 12)

Criteria	0	1	2	3	4	5	Weight	Score
	No evidence	Limited Evidence (Poor)	Limited Evidence (Fair)	Clear Evidence (Good)	Clear Evidence (Very Good)	Clear, Consistent, & Convincing Evidence (Excellent)		
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.	More than 5 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	1	2	3	Weight	Score
	No evidence	Limited Evidence	Clear Evidence	Clear , Consistent, and Convincing evidence		
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

Biology (Living Environment)

Glen Cochrane, Biology SAR

The Howard Hughes Medical Institute (HHMI) ranks as one of the nation's largest philanthropies advancing biomedical research and science education in the United States. Started in 1953 by Howard Hughes it currently has an endowment of over 16 billion. The Institute spent \$825 million for research and distributed \$80 million in grant support for science education in fiscal year 2011.

I have been exploring the HHMI BioInteractive site and I'd encourage you to take a look:
(<http://www.hhmi.org/biointeractive/>)

I have been using the HHMI produced materials and the website for many years. Materials like DVD's posters will be sent to your school and now the materials are available directly from the HHMI website. You can actually go to a catalog of free materials and have them mailed to your school.

(<http://www.hhmi.org/catalog/main?action=getCategoryListing&catId=2>)

Many of the items in DVD are also available on demand. Take a look at the Classroom tab and you will find a short videos and activities that address some of the major concepts of Living Environment as well as AP/IB Biology.

I am looking forward to the next Holiday Lectures soon to be available. One of my favorite topics is human evolution and this series, "*Bones, Stones and Gene*" aims to give students and teachers an overview of the evidence for human evolution. The evidence includes a growing

fossil record from Africa, ancient artifacts like stone tools, and molecular genetics data from populations around the world.

The most recent additions to the Activities tab are a series of shorts, "Natural Selection and Adaptation." (<http://www.hhmi.org/biointeractive/shortfilms>) A number of classroom activities have been developed to complement the concepts of the films.

"This trilogy of short films has been crafted to engage students with memorable examples of the evolutionary process in action. Each film takes students on an adventure—to the deserts of the American Southwest, to the Antarctic, and to East Africa, where they encounter fascinating creatures and pioneering scientists who have revealed how the fittest are made. Produced by award-winning filmmakers Sarah Holt and Bill Anderson, each film illustrates the role of mutation and natural selection in adaptation."

Other resources include virtual labs on Immunology, Cardiology, Bacterial Identification, and Transgenic Flies. The Holiday Lecture Series serve as the focus of a number of videos and animations. I have collected most of the DVD's from the lecture series but they are now available "on demand" or you can order them free from the catalog.

I encourage you to take a few minutes to explore this rich web site. I'm sure you will find resources that will enrich your lessons. ■

"I have been exploring the HHMI BioInteractive site ... and I'm sure you will find [FREE] resources that will enrich your lessons."



Intermediate (Middle) Level

Ashley Bloch, Intermediate SAR

All too often, it is easy to feel overwhelmed when developing lessons that will really hook students and make them active participants in their learning. Whether one has been teaching for what feeling like forever or is just starting out, trying to make the next great lesson can be a daunting task, especially when you are possibly the first contact point in a child's exploration into science. Thanks to the collegiality of teaching, nobody needs to work in a vacuum; instead we can exchange ideas with colleagues, attend conferences, and even search the Internet for the next big thing. Below are a few tricks and techniques that I have picked up that will perhaps breathe new life into your lessons!

- **Foldables and Interactive Notebooks** When dealing with my middle school students, they often have energy to burn and having them take notes will often lull them into a comatose state. However, you can tap into their energy have students make interactive notes and review guides called foldables. Formally developed by Dinah Zike, these folded notes allow students to not only tap into 3 modalities of learning that are normally touched upon with traditional notes (reading, writing, and listening), they allow students to kinetically learn the material. It might take a little longer than you're used to for the students to complete, but this will allow the students to take a full ownership of the material. You can even take it a step further and have your students create an entire notebook designed around them. More information can be found at Ms. Zike's website (www.dinah.com).

- **Great Websites** Often, a great idea for a lesson will come to me and I wonder what could be the best way to implement it. More times than not, I will visit these sites and see that not only have they thought of it, they already have the reproducible and follow-up activities developed. I will just need to tweak their lessons to suit my students' needs. These sites include:

www.middleschoolscience.com Great ideas, with a heavy emphasis on the life sciences. Demonstrates how the interactive notebook can be used in the science classroom

www.sciencespot.net Has some fantastic activities with heavy emphasis on the metric system and the scientific method

www.brainpop.com Great short clips for various concepts in science. For full access into this site, you need to pay.

www.science-class.net Has some great activities for a wide variety of middle school subjects.

Current Events Get your students motivated by linking what they are learning with various current events in science. Watching clips from 60 Minutes, NOVA, and ABC News are a great way to show your students in action! Additionally, to incorporate more of the Common Core ideals, use newspaper and journal articles to expose your students to more non-fiction text. Use a readability calculator (such as <http://www.standards-schmandards.com/exhibits/rix/>) to estimate the reading level of the article and possibly obtain different articles of the same concept to differentiate amongst learners of different levels.

As we move towards the middle of the school year, we teachers start to feel a crunch. Home and family commitments due to the holidays, the state test looming ever so closer, and changes in education at the state and local level - the list goes on and on! I hope these suggestions will help you make a difference in your classroom and invigorate you for the new year!

If you have suggestions as to what you would like to read about and/or learn more about, please drop me an email at abloch@islipufsd.org. ■

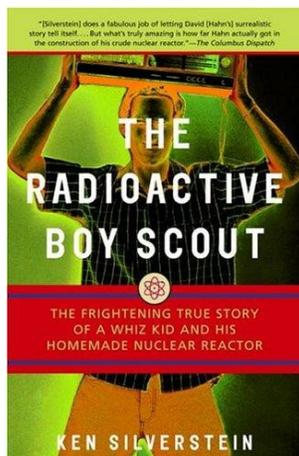


Read Chemistry!

James Ripka, Ph.D., Chemistry SAR

I have encountered a number of interesting Chemistry related books that I think you will enjoy. The easiest place to borrow these books from is your own High School Library. Most if not all Public High School Libraries are part of the inter-Library Loan System. Your Librarian can request the book for you and will tell you when it is in. In fact, your Librarian would probably enjoy talking to you. You should consider talking to him or her. They are valuable sources of resources. They also tend to be logical focused individuals who appreciate science. I encourage you to borrow at least one book from your High School Library this year.

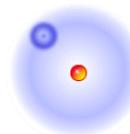
The Radioactive Boy Scout. by Ken Silverstein (2004). David Hahn, an Eagle Scout from Michigan attempted to create his own nuclear breeder reactor in a shed in his backyard. Hahn collected radioactive isotopes from household materials. Americium came from smoke detectors, Radium from clocks, Thorium from camping lantern mantels, etc. While not successful in creating an operating nuclear reactor, his apparatus was emitting more than 1,000 times normal background radiation. The shed has been considered the worst civilian nuclear site in the U.S., a Superfund cleanup site, which required significant resources to dispose of.



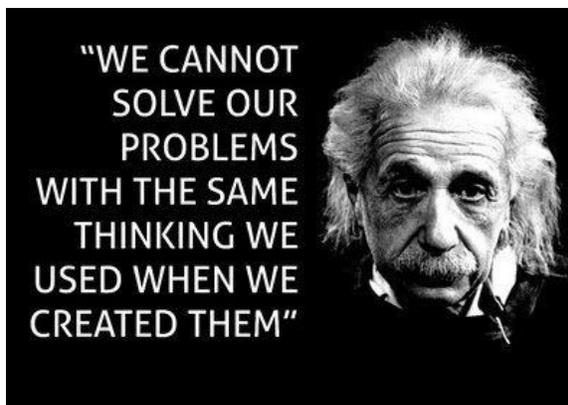
"Einstein 1905: The Standard of Greatness" by John Ridgen (2005). Did you know that Einstein conducted Chemistry Experiments? Einstein 1905 covers the five papers Einstein published in his Annus Mirabilis, his extraordinary year. The book is an account of the papers, their relevance to the time and how Einstein arrived at the work compiling them. From quantum mechanics, to statistical physics (Chemistry) to relativity, this book is an easy to understand compendium of Einstein's work viewed through his publications of 1905.

"Hydrogen: The Essential Element" by John Ridgen (2002). American Physicist John S. Ridgen has a second fascinating Chemistry related book. As a molecular physicist and History of Science scholar, Ridgen's book on Hydrogen is essentially a biography of Hydrogen. Ridgen brings the most abundant atom in our Universe into focus on its critical nature to understanding our world. From electron orbitals to the Big Bang and everything in between, Hydrogen truly becomes valued as our building block of matter. Of particular interest is how new technology and investigations into the nature of Hydrogen have produced new insights and valued tools for our society. Magnetic resonance imaging, GPS systems and highly accurate clocks are all derived from the nature of Hydrogen.

Hydrogen Atom



"The Disappearing Spoon: And Other True Tales of Madness, Love, and the History of the World from the Periodic Table of the Elements" by Sam Kean (2010). The elements come to life. Why did the Lewis and Clark expedition swallow mercury capsules, which are still detectable, 200 years later? Why did Gandhi hate iodine? Why did the Japanese choose to kill Godzilla with Cadmium missiles? And how did Tellurium lead to a gold rush? These are only a few of the intriguing stories and anecdotes about the elements that you will learn. Every element has a use and here you can learn about it. Kean "humanizes" the elements. ■



7 Billion and Counting

Sonja Anderson, Environmental Science SAR

In case you missed it the world has now an estimated 7 billion people living on it. October 31, 2011 was the day the UN Projected the 7th billion person to be born, now most of us realize that is probably very far from the truth because the 7th billion person could have already been on the planet for a year or maybe will not arrive until the following year. Human population is such that exact numbers are difficult to come by on a global scale. But there are a few things we do know for sure,

It was not until 1800 that we reached our first billion people, then it took another 130 years to reach the second billion, 30 years for the next, 14, 13, 12 and it has been 12 years since there were 6 billion people on the planet. Most

of the growth is occurring in developing countries with very little impacting us in Long Island. If anything we are experiencing negative growth on the island which comes with a host of different issues. Population experts have projected that we will have 8 billion people by 2024, which in a way is good news because it seems that the rate of population growth is slowing down.

There are a variety of reasons we are seeing populations start to decline, China's one child policy has allowed that country to decrease its fertility rate to 1.5% (2.1% is the current replacement fertility level). This policy has not come without problems, demographers expect that there are 119 boys for every 100 girls in China creating a "brideless population" and when this

generation is ready to marry the inequality will be most pronounced.

Family Planning in Thailand is a

"Population experts have projected that we will have 8 billion people by 2024, "

successful case study that can act as a model for much of the developing world. Once faced with growth rates as high as 3.2% in 1974 promoting the use contraceptives among married couples decreased the growth rate to an astounding 0.7% which it stands today. It is estimated that the population is 20 million less than it would have been if it followed its former trajectory. ■

Suffolk STANYS Members at the Annual Conference



Top Left: Alice Veyvoda, Ron Henrickson, and Angela Lukaszewski worked at the Exhibit Hall. Above: STANYS President-Elect Brian Vorwald, Earth Science SAR Melissa Torre, and Chairperson Glen Cochrane at the Hall of Sections. Left: Fellows New Teacher Award winner Jaclyn Stiegert collects minerals during the "Live from Wards: It's Saturday Night" event .



Vocabulary in the Earth Science Classroom

Melissa Torre, Earth Science SAR

As we begin to implement new literacy standards (Common Core), I thought an article that goes back to the basics was appropriate. In order to have the kids become more literate they have to understand the vocabulary. The old way of copying definitions from the textbook is not going to cut it. I have put together a few methods that I have used in my classroom to help students learn science vocabulary.

I just recently gave out a vocabulary graphic organizer (example on right). The graphic organizer consists of four boxes, including the following: Definition, Example, Diagram, and Word Association. Having the kids draw pictures, see examples and write down the terms that are associated with that word was very helpful. Examples help the students answer the age old question “how does this relate to me.” Word association is a great box for the students to write down the key terms that go with each vocabulary word. This activity makes the students think instead of the mindless task of copying notes or definitions from a textbook.

I have also used an activity called “I have....Who has?” It is important when you implement this activity that you have enough cards so that every student gets a vocabulary word. Each index card (I use the large ones) has a definition on one side and a word on the other side. For example the first card will say the word “Permeability”. Another student will have a card that reads “Permeability is the ability of a material to allow fluid to pass through it.” Then they flip over their card & it has the next word on it. I have my students switch cards and do it over and over I tell them it is a race between classes and I time them. To make the activity more difficult you can have the definition but not put the word on it so the students have to figure out what definition they have.

Another vocabulary activity I learned about at the STANYS Conference was “Don’t-Cut-D-Pillar!” You make up a picture of a caterpillar’s “head” and have a word written on it. The rest of the pieces look like ovals with a line drawn down the middle. The pieces are made out of cardstock that you can laminate so they keep longer. Each oval has a definition on one side and another word on the other side. Students must form the longest caterpillar possible. To be able to do so, they must correctly connect science vocabulary words to their definition, description, application or examples. If the students fail to identify the words correctly, the connection will be broken and they will be unable to complete the puzzle. The kids work in groups to race to put the caterpillar together correctly matching each word with the correct definition. Check out Rodelio Abuan’s website to see pictures (<http://www.scienterrificgames.com>).

I hope that these vocabulary ideas will help you help your students. Please feel free to e-mail me if you have any questions, my contact information is in the front under Who’s Who. Please adapt these ideas to whatever subject you are teaching. If you have any more ideas you would like to share post them on STANYS’ facebook page. ■

<p><i>Definition:</i></p> <p>The upper layer of earth in which plants grow; a black or dark brown material consisting of clay and rock particles</p>	<p><i>Example:</i></p> <p>DIRT</p>
<p><i>Drawing:</i></p>	<p><i>Word Association:</i></p> <ul style="list-style-type: none"> • Weathering & biologic activity • transported

When Retirement is a Twosome

Ed McDaniels, Retiree SAR

I have been retired for three years. My wife has been retired for about 3 weeks. Now that she has retired from education we can spend more time together. Lots more one-on-one time, lots of it. In those three years of my retirement, my wife got up to go to work every morning and I would stay in bed, out of her way until she left for school. Then I would get up, shower and shave, turn on TV and have my breakfast while I read the paper. As my retired friends describe it, I eased into my day. By 10 am I was ready to do, or not do, what needed to be done.

Now my schedule is not the same nor is it necessarily "my" schedule. In the first couple of weeks of our dual retirement there is not a closet in our house that has not been cleaned, straightened and pared down. The Salvation Army has been the recipient of shirts, pants, shoes, dresses and other redundant clothing and furnishings that clut-

tered up our closets. My wife's retirement has brought order and purpose to my previously lackadaisical, relaxed life. Thanks a lot! As I asked other retirees if what I was experiencing was a common turn of events, the responses I got were almost unanimously affirmative. In those three years of retirement I had created my daily routine and now a new element had been introduced that changed the dynamics. The closet cleaning I experienced was akin to my friend's wife repainting almost every room in their home upon her retirement. These new retirees had not yet developed their routine and didn't have that chance to do it by themselves. Rather, they were restricted by the schedule that had already been put in place by the first retiree and they were trying to fit what was important to them into an existing structure. That can be tough on everyone. Often as a

retiree is given all this extra time they are not sure what to do with it but they want use it to be productive and "doing something." That can be a rough transition. So my advice is to be gentle, understanding and don't pressure these fledgling retirees. They have to find their own way, just be supportive and flexible. Have a suggestion or two about what you know they like to do. For example; there is that Indian restaurant in Hicksville you have always wanted to try for lunch. Doesn't a winery tour in the middle of the week sound nice? The possibilities are there, use them.

As the days go on, and since we have run out of closets to clean, we are finding things that we want to do as a couple and give each other the space to do things individually as well. As we all remember from Darwin, it is the adaptable species that survive the best. Enjoy retirement. ■

News from College SAR

Linda Padwa, College SAR

There are several interesting opportunities available for candidates in science teacher preparation programs.

- Free membership in STANYS – see enrollment form elsewhere in this publication and submit it with a letter from your faculty advisor.
- Apply for a reduced rate membership in the National Science Teachers Association (NSTA). The membership rate for teacher candidates is only \$34/year. Application information can be found on the NSTA web site (www.nsta.org). Along with your application for student rates you will need to submit a letter from your faculty advisor.
- Reduced rate for students to attend the Suffolk STANYS Conference in April, 2012 (see conference registration material for details).

Another option that is made available through NSTA is the formation of a student chapter of NSTA on your campus. More details can be found at: <http://www.nsta.org/about/collaboration/chapters/student.aspx>

Stony Brook University's NSTA student chapter has sponsored several programs this year and would welcome the opportunity to interact with students from other science education programs in the area. For information about programs and starting your own student chapter of NSTA, contact the faculty advisor, Linda Padwa (Linda.Padwa@stonybrook.edu).

What Happens in Vegas ...

Ed McDaniels, Retiree SAR



Fig. 1: Las Vegas sign

Las Vegas is one of those towns that has something for everyone. The new hotels are opulent and awe inspiring. They can also be exhausting because they are so large and it can be tiring walking from one end of the hotel to the other. I'm not a gambler; driving on the LI Expressway at rush hour is as much gambling as I'm comfortable with. The hotels however offer more than just casinos. They draw you in with great restaurants, gardens, fountains, exhibits and more. However, the path to get to these wonderful attractions always passes through the casino, just in case you wanted a pull on the slot machine or a turn at the roulette wheel.

The iconic Las Vegas sign (Fig. 1) welcomes visitors to this fabulous city in the desert as it has since 1959. The newer construction at the south end of the Vegas Strip is in stark contrast to the mob era hotels, casinos, wedding chapels, pawn shops and bail bonds in old Las Vegas, at the north end of the Strip. The south end's Shark Reef exhibit at Mandalay Bay, the Fountains at the Bellagio, the view from the Stratosphere are all great things to experience and complement and reinforce the glitzy image we have of Las Vegas.



Fig. 2: Hoover Dam with bypass bridge

Being the science geek I have always been, there are other man-made and natural wonders to see outside of town. The Hoover Dam is about half an hour SE of Las Vegas. To accommodate larger trucks and to secure the dam from terrorist attacks they have constructed a separate bypass bridge for traffic. (Fig. 2) You can still walk across the dam's roadway and travel from Nevada to Arizona, from Mountain Time Zone to Pacific Time Zone, and back again in just minutes. They offer a tour of just the power plant where you can see hear and feel the water as it rushes through the huge penstocks on its way to the turbines. They also offer a tour of the inside of the dam itself which I recommend. So much concrete was used in its construction that the concrete is still curing and will continue to

harden for the next 300 years. You can walk through the tunnels built inside the dam for ventilation and peek through the grates on the dam face itself, (Fig. 3) more than 400 ft above the river's surface and look through the grate to see the river below. (Fig. 4) The dam also creates Lake Mead and fulfills its actual purpose of regulating water flow to the areas downstream. They are coming out of a long drought period in which the water behind the dam had dropped 110



Fig. 3: Ventilation Grates with dam below

ft below the top of the dam. Today that level is down "only" 45 ft. In the picture (Fig. 5) you can see the sharp contrast in the rocks' coloration due to mineral deposits made when they were under water.

About an hour north east of Las Vegas, a Nevada state park called, "The Valley of Fire" shows some of nature's handiwork. Earth Science teachers would spend the whole day there, if not more. The Valley of Fire is an area that has brilliant coloring due to the iron and other mineral content of the rocks. The "Rainbow Vista" combines not only the red of the iron but other colors as well to produce an awe inspiring view. (Fig. 6) The large number of different types of rock formation is intriguing enough to even make the non-science person take interest and marvel at nature. "The Beehive" formation (Fig. 7), for example, allows you to see all the layers and cross-bedding in a sandstone remnant. My geologist friends informed me that this represents an ancient sand dune.

Because this area was so remote and inhospitable, some Indian tribes found it to be a safer haven from invaders, both other Indian tribes and later from Western settlers. Whether it is today's Facebook or a wall in the Bronx covered by graffiti, man has always wanted to leave his mark and to communicate with others.



Fig. 8: Petroglyphs

That was true more than 4,000 years ago when Native American Indians left petroglyphs (Fig 8) on the walls of these cliffs. You can see from their inconvenient location at the top of the scaffolding (not Indian created) they were important to them (Fig 9). These pictures relayed a story for others to see. It allowed its authors to literally leave their mark for future generations and to be remembered. Maybe that, in part, is what the Hoover Dam and the Las Vegas sign are for us. ■



Fig. 4: View of River 400 ft below Hoover Dam



Fig. 5: Shore of Lake Mead. Light rocks indicate how much water level has dropped.



Fig. 7: Beehive " formation consists of cross-bedded sandstone which were ancient dunes.

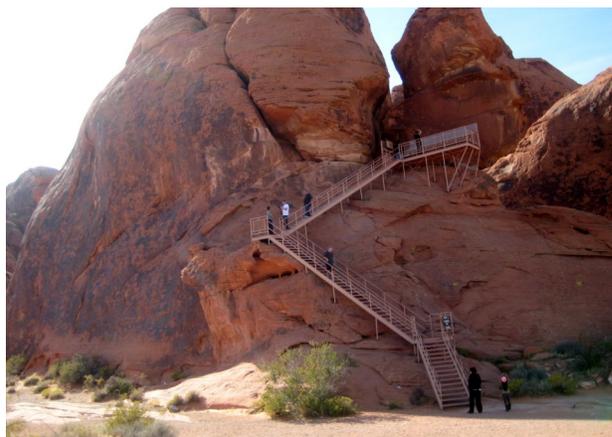


Fig. 9: Petroglyphs created by native Americans are located at the top of this scaffolding.



Fig. 6: Rainbow Vista combines the red of iron oxide and other minerals, producing an awe inspiring view.



What Does a Science Teaching Degree from Hofstra University mean?

Learning to become a teacher at Hofstra means you'll have the critical and creative skills necessary to lead a vibrant science classroom. Our faculty use the power of research-based instruction to prepare mindful educators for today's changing schools. At the completion of these programs, our graduates bring the best teaching practices to classrooms and students.

In addition to a clinically rich program that prepares new teachers (a 37 credit M.S.Ed. in Science Education), Hofstra offers a Master of Arts degree for already certified teachers. The unique feature of this degree program is that you can select from 6 concentrations .

This 33-semester hour MA program is for students who possess initial teacher certification in biology, chemistry, earth science or physics in grades 7-12. The program provides advanced study in the curriculum, pedagogy, and content of the sciences, and leads to professional certification for teachers. Plus, you select a cognate concentration in

one of the below listed areas and may also add a middle-level certification extension (grades 5 and 6) into any concentration.

Concentration Options:

- Multicultural Education
- The Arts and Humanities
- Educational Technology
- Interdisciplinary Studies
- Gifted Education*

Bilingual Education*

**New York state-recognized certification areas*

We offer internationally renowned faculty with small class sizes and emphasize constructivist teaching and field experiences. Our program is problem-based and our courses are interactive . We personalize the

program to the needs of each student. Our courses take place in state-of-the-art classrooms, including a teaching laboratory. Partial scholarships are available. Students have opportunities to network with successful science alumni and faculty.

To learn more, contact Jacqueline Grennon Brooks, Ed.D., Program Director, Secondary Science Education.

516-463-5777

Jacqueline.Grennon.Brooks@hofstra.edu

Hofstra is in its fourth year of an innovative doctoral program in teaching and learning. There are wonderful research opportunities for science teachers wanting to better understand science learning and the science of learning. For details, contact Dr. Bruce Torff at 516 463-5803.

For details on admission and program requirements for any of these programs, visit

hofstra.edu/academics/grad. ■

College SAR Report (continued from page 19)

Scholarship Opportunities for Science Teacher Preparation

There are several scholarship opportunities for those seeking initial certification as science teachers.

National Science Foundation Robert Noyce Scholarships – offered at Stony Brook University and Dowling College – for those interested in teaching science or mathematics in high-needs school districts (\$10,000; two year teaching commitment)

Petrie Foundation Scholarship Loan Program – offered at Stony Brook University for those interested in teaching science, mathematics, or TESOL in New York City (\$15,000; three year teaching commitment)

For more information about these opportunities visit the program web sites:

Stony Brook: <http://www.stonybrook.edu/cesame/students/prospective-teachers.shtml>

Dowling: <http://www.dowling.edu/noyce/>

**Geoscience Enrichment Opportunities at
Stony Brook University**

Center for Earth and Space Science Education



Winter and Spring 2012

Professional Development Programs for Teachers

Workshops

The Center for the Advancement of Earth and Space Science Education is offering workshops this winter on Saturdays from 9 AM to 12 Noon which each provide 3 hours towards in-service credit. The workshops meet in room 137 of the Earth and Space Science Building at Stony Brook. You may choose to stay after the workshops for a free lunch and an opportunity to network with your fellow teachers.

Enrolment is limited. If you wish to participate, please contact Gil Hanson gilbert.hanson@stonybrook.edu to let him know which workshops you would like to attend. More information is available at www.geo.sunysb.edu/ess-workshops/

Saturday February 25: *“Interpreting the Geologic Setting of Your School Campus Using Digital Elevation Models (DEMs)”* Prof. Gil Hanson, Stony Brook University

Saturday March 24, 2012: **“Forensic Geology”** Prof. Scott Samson, Syracuse University

Field Trips

There will be a series of field trips in April on the geology of Long Island led by Prof. Gil Hanson. More information is available at www.geo.sunysb.edu/ess-workshops/. Teachers and professional geologists can receive in-service credit for attending the field trips. If you wish to participate, please contact Gil Hanson gib-ert.hanson@stonybrook.edu and let him know which field trips you plan to attend.

Thursday April 5	9AM to 12 Noon,	Geology of Avalon Park and Port Jefferson
Thursday April 5	1 PM to 5 PM	Geology of Stony Brook Campus
Friday April 6	9 AM to 12 Noon	Geology of Wildwood State Park
Friday April 6	1:30 PM to 4:30 PM	Geology and Hydrology of the Carmans River
Saturday April 28	10 AM to 12 Noon	Geology of Weld Sanctuary
Saturday April 28	1:30 PM to 4:30 PM	Geology of Caumsett Sate Park

For more details on registration for these and other classes, see the School of Professional Development web site: www.stonybrook.edu/spd

Geoscience Enrichment Opportunities (continued from page

Geology Open Nights

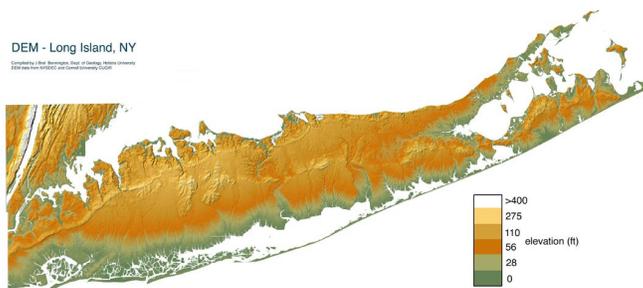
Geology Open Night is one of the Science Nights at Stony Brook University held on Friday nights during the academic year from 7:30 to 8:30 pm in room 001 the Earth and Space Sciences lecture hall. Geology Open night lectures are usually on topics in the geosciences related to the current research of the faculty, staff and students at Stony Brook University. After the lecture there is an opportunity for discussions with the speaker and other attendees over juice and cookies. Middle and high school teachers, as well as students, are encouraged to attend. One hour towards in-service credit for teachers is available for atte

Friday March 2 "A Year after the Big Japan Earthquake: Implications for Earthquake Risk in Japan and the United States, presented by Prof. Daniel Davis

More information regarding the Geology Open Night lectures can be found at www.geo.sunysb.edu/openight/

Conference on the Geology of Long Island and Metropolitan New York

Saturday April 14, 2012



The nineteenth conference on the "Geology of Long Island and Metropolitan New York" will be held on Saturday, April 14, 2012. Topics for presentation include general geology, earth science education, glacial geology, stratigraphy, sedimentology, coastal geology, applied geology, environmental geology, engineering geology, hydrology, and bedrock studies emphasizing the geology of Long Island and Metropolitan New York. Major goals are to inform participants of ongoing research, to promote further research and collaboration among researchers, to define important areas where research is needed, and to encourage further research on Long Island and in Metropolitan New York.

The abstracts of past presentations at the conferences are on the Long Island Geology web site at www.geo.sunysb.edu/lig/. Teachers and professional geologists can receive in-service credit for attending the conference.

Earth Science Courses for Science Teachers at Stony Brook University

As part of our new MS in Geosciences with a concentration in Earth and Space Science program intended for science teachers we have created a set of graduate courses specifically designed to cover in detail and depth the material taught in the New York State earth science curriculum. The courses will be taught in the evenings to accommodate the working teacher. We will be teaching the following courses in the evening that are appropriate for science teachers:

ESS 536 Principles of Weather Analysis (3 cr) instructor Jeffrey Tongue

(Prerequisite: Introductory course in meteorology)

GEO 520 Glacial Geology (3 cr) instructor Gilbert Hanson

More information regarding the MS program and descriptions of the ESS courses is available at www.geo.sunysb.edu/ms-ess/ or contact Gil Hanson gilbert.hanson@stonybrook.edu

Geoscience Teaching Laboratories

Through the *Center for Science and Mathematics Education (CESAME)* at Stony Brook University we are providing Geoscience Teaching Laboratories for middle and high school students. 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, modeling real world processes on a stream table and as well a field trip to Caumsett State Park. Some of these programs can be performed at your school. Through the NSF sponsored Geo-PREP 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

Geoscience Programs for Elementary Students

We are now offering Geoscience Programs for elementary students which can be performed at your school. In these programs students can experience a variety of adventures from finding and identifying fossils in rocks (students get to keep the fossils) to measuring weather properties around their school to identify microclimates. They can make casts of real dinosaur footprints and determine the size of the ancient animals. There is also an option to come to Stony Brook University where the students can do their own experiments in a large stream table to learn how land and water interact. Through these hands-on activities, geared to the elementary science core curriculum, students will explore and better understand the world around them. For further information contact Gil Hanson at gilbert.hanson@stonybrook.edu. ■

Summer Teacher Workshop at Stony Brook University

Real World Science and Math

July 9—July 13, 2012

CESAME will offer a one-week workshop at Stony Brook University for teachers of Chemistry, Physics, and Mathematics this summer. Three separate workshops will provide high school physics and chemistry teachers and middle school and early high school mathematics teachers with professional development in applications of science and mathematics concepts. The Real World is part of every discipline and participants in these workshops will have the opportunity to learn about and explore some of the connections that exist between their classroom instruction and the world beyond the classroom.

The program will enhance pedagogical content knowledge for Physics, Chemistry and Mathematics teachers. Participating teachers will work with members of the Stony Brook faculty and other professionals to explore Real World applications that compliment content in the NY State Core Documents for Physics, Chemistry and Mathematics through a series of activities and field trips. Discussion will address approaches that can be used to incorporate the field experiences and activities into topics taught throughout the year.

Teachers will receive a \$500 stipend, plus travel expenses (up to \$275), room and board. Living on campus is optional. Participants will receive a certificate for 30 professional development hours upon completion of the program. Attendees will be expected to share the materials used in the workshop program with other science and mathematics teachers at their schools, in their school district, and beyond, through activities such as conducting workshops and presenting at conferences. Attendees are required to remain in contact with CESAME to report these activities.

Deadline for applications is March 30, 2012. Applications available at:

<http://www.stonybrook.edu/cesame/teachers/RealWorldScience.shtml> ■

**TEACHER
WORKSHOP**



Winter/Spring 2012 Science Evenings With IDEAS

This year, Hofstra IDEAS Institute is offering evening programs which provide an opportunity for teachers **and their high school students** to hear about science topics from people who are directly involved in science research and teaching. Questions are encouraged, the goal is to make the evening a dialogue. Teachers receive a certificate of attendance, which can be used for one hour toward professional development credit.

Thursday, February 9, 2012

Space: The Asteroid Frontier

Dr. Lucy McFadden, Scientist and Chief for Higher Education, NASA Goddard Space Flight Center

Dr. McFadden has studied the asteroid frontier from Hawaii, Antarctica, and the desert near Khartoum, and through data from the Hubble Space Telescope and Dawn, the new robotic spacecraft. She will share her adventures, place the thrill of NASA's solar system exploration in context, and provide opportunities for students and teachers to engage in NASA's exciting missions that expand understandings of our Earth and Universe.

Location: The Helene Fortunoff Theater (Monroe Lecture Center, California Avenue, South Campus)
Time: 7:30 to 9 p.m.

Climate Change Now and in the Next Decade

Hofstra faculty from Biology, Physics, Geology, Sustainability Studies, and Philosophy

A panel discussion and question and answer session on the impacts of climate change being experienced now and expected over the next ten years. What effects of climate change are we already seeing, what trends do we expect in the near future, what can we do to slow down climate change, and what will we need to do to adapt to it? This is a special Earth Day Celebration event.

Location: The Helene Fortunoff Theater (Monroe Lecture Center, California Avenue, South Campus)
Time: 7:30 to 9 p.m.

Thursday, March 8, 2012

Ancient Fossils, Regulatory Genes, and the Neurology of Language: New Frontiers in Evolution Science

Dr. J Bret Bennington, Department of Geology, Dr. Russell Burke, Department of Biology, and Dr. Patrick J. Gannon, Department of Science Education, Hofstra North Shore-LIJ School of Medicine

In celebration of Darwin Day 2012, Hofstra faculty will provide updates from the cutting edge of evolution research in geology, biology, and medicine, followed by a panel discussion and audience question and answer period.

Location: The Helene Fortunoff Theater (Monroe Lecture Center, California Avenue, South Campus)
Time: 7:30 to 9 p.m.

Wednesday, April 25, 2012

Thursday, May 9, 2012

Nanomaterials for a Healthier and Cleaner World

Dr. Perena Gouma, Associate Professor, Department of Materials Science and Engineering, and Director, Center for Nanomaterials and Sensor Development, Stony Brook University

Location: The Helene Fortunoff Theater (Monroe Lecture Center, California Avenue, South Campus)
Time: 7:30 to 9 p.m.

For more details on these and other IDEAS events, visit:
hofstra.edu/IDEAS ■

Summer 2012 Programs at Stony Brook University

Center for Science and Mathematics Education (CESAME)

Below is a listing of summer programs that are being planned at the CESAME facilities on Stony Brook University's campus. Full details about dates, cost, and so on can be found on the CESAME website:

www.stonybrook.edu/cesame. If the information that you are seeking is not posed on the site, please check back toward the middle of January, or call the CESAME office, 631 632 9750.

The CESAME programs are for students in grades 7 – 12, and this year we are hosting a program for high school teachers of chemistry, physics, and mathematics. Please share this information with your students and colleagues who may be interested in participating.

For Teachers:

Real World Science and Math: A one-week workshop for teachers of Chemistry, Physics, and Mathematics will be held during the week of July 9 – 13, 2012. This program is sponsored by the Toyota Foundation and is open to teachers in New York State. See the web site for full details.

For Students:

The dates for the following programs are still being finalized; full details will be on the web site by mid-January. Unless otherwise noted, the application deadline for student programs is April 1, 2012.

Biotechnology Summer Camp

Eligibility: Students must have completed ninth grade and biology to apply. The goal of this program is to introduce motivated high school students to the techniques used in modern biotechnology research.

Explorations in Forensics

Registration Deadline: June 1, 2012

Eligibility: Students entering 10th and 11th grades in September 2012 who have not yet taken a formal Forensics course

Forensic Science is the application of science to matters of or pertaining to the law. This program includes a variety of scientific disciplines including Biology, Chemistry, Physics, Biochemistry, Earth Science, and other applied sciences.

Math Summer Camp

Eligibility: Students must be juniors or seniors in the Fall of 2012

The program is designed for students who will be entering their junior or senior year in high school and have an interest in enriching their mathematics education. During the two-week program students will explore several branches of mathematics, including: Geometry, Number Theory, Game Theory, Cryptography, and Finance.

Engineering Summer Camp

Eligibility: Students who will be juniors or seniors in the Fall of 2012. Students with a strong background in math and science are recommended.

The goal is to introduce motivated high school students to the various fields in engineering. ■

Join us for our monthly meetings. They alternate between the first Wednesday or Thursday of each month.

Dates for 2012 are:

Wednesday, Feb 1,

Thursday, March 1,

Wednesday, April 4,

Thursday, May 3 ,

Wednesday, June 6

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

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