



New Hampshire Science Teachers' Association

Summer Newsletter, 2009

NHSTA Newsletter Editor: Paul Williams

Volume 5, Issue 4

June, 2009

Message from Lisa Lavalley, Pinkerton Academy, NHSTA President

Happy Spring/Summer Science Colleagues!

As I was running this afternoon trying to organize my thoughts for this newsletter I was thinking how happy I am that spring is here, the swine flu scare is waning, and I'm finally feeling well after catching every bug my students had this year!

I appreciate you voting me as president once again for the upcoming school year. I plan on serving you with the same dedication and enthusiasm as last year. When I look over the list of accomplishments described in the last newsletter, from rewriting the constitution, to securing NHSTA's position as a non-profit organization, to using more technology, I'm proud to say I was a part of it. We have just as many ambitious goals for the upcoming year. We are interested in updating our webpage

and are looking to the membership for input as to what you would like to see in the new design. Please contact me or any board member with ideas, suggestions, or cool web pages that you've discovered that might serve as models (lavalley.lisa@yahoo.com). Let us know if you are interested in serving on the web design committee. We want this new web page to be a site you use frequently, that you can contribute to, and that contains information you find valuable. The NHSTA board is also continuing the policy committee to actually write policy standards for the organization so anyone who joins the board knows the expectations up front. The board is considering "going green" and eliminating paper. The new web page will be conducive to this change and

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Announcing the 2009 NHSTA Fall Conference! By Amy Rockwell, Conference Chair

Mark your calendar for October 25-26, 2009 for the 2009 NHSTA Fall Conference in Bartlett, NH. The NHSTA fall conference will be held at Attitash Grand Summit Hotel in Bartlett, NH on October 25-26, 2009. The NHSTA Conference is the premier professional development event for science teachers and educators in New Hampshire. Conference events address all aspects of science education; including all strands of science, literacy, technology, state testing and assessment.

The Fall Conference will be held over a series of two days. The first day will be devoted mainly to field trips that will vary in length from half a day to a whole day. Day two will be devoted to one-hour workshops.

NHSTA is now accepting proposals for field trips and workshops. We invite you to share your teaching strategies and science expertise with your colleagues by presenting a workshop or conducting a field trip at the NHSTA Conference. NHSTA seeks classroom teachers, informal educators, education professionals, and other members of the education community who can conduct interesting, informative, and useful one-hour long workshops or field trips for conference attendees. Not only is it a great opportunity for you to share your knowledge and expertise with others, you also get free registration! Please go to our website, www.nhsta.net, to submit your proposal. If you have any questions please contact Amy Rockwell at rockwella@sau25.net.



NHSTA Board of Directors, 2009/2010



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Annual Fall Conference—Sunday, October 25 and Monday, October 26, 2009 (format similar to the last Attitash Fall Conference - Sunday: Field Trip Day and Featured Speaker; Monday: workshop day), Attitash Resort, Bartlett, NH

Annual Spring Conference—March 2010, TBA

The New Hampshire Science Teachers' Association is the professional science teaching organization for our state. Its purpose, as stated in its constitution, is to promote and improve science education in New Hampshire. NHSTA membership consists of all people interested in science education who have paid their regular membership dues. Dues are presently \$20.00 per year. NHSTA is a volunteer organization run by an elected Executive Board consisting of a president, vice-president, secretary, and treasurer. The Board of Directors is appointed by the Executive Board and represents New Hampshire's geographic regions and its various educational levels and disciplines. The Board meets monthly. For more info visit www.nhsta.net

Summer Chemistry in Durham (UNH)

On line registration: www.learn2.unh.edu/summer

For the college bound:

NEW COURSE!

Chem 401, Chemistry Essentials

June 29 - July 31 MWF 9:10-11

Didn't have high school chemistry? Want a refresher prior to taking General Chemistry at UNH or elsewhere? This is the warm-up for you: periodic table, basic math pertinent to chemistry, chemical equations and stoichiometry, gases and more.

2 credits. Dr. Kathy Winans, k.winans@unh.edu

For those seeking a physical science elective: ***NEW COURSES!***

Chem 409, Chemistry and Society

June 29 - July 31 Tu-Th 8-noon

For the curious non-scientist. Also appropriate for pre-service elementary teachers. We will explore the chemistry underlying everyday life, and in doing so reveal basic principles about how matter behaves. Hands-on activities.

4 credits. Dr. Kathy Winans, k.winans@unh.edu

Chem 444B, Symmetry in Nature **May 25 - June 26 MTWR 9-11am**

This course will explore the fundamentals of symmetry, including chirality, and clarify relationships that we tend to overlook or ignore. Course lectures and assignments will be augmented with field studies.

4 credits. Prof. Art Greenberg, specialist in history of chemistry

For those needing standard core courses:

General Chem 403 and 403 Lab

4 credits May 25 - June 26 MTRF

General Chem 404 and 404 Lab

4 credits June 29 - July 31 MTRF

(Split credit for lecture/lab possible with permission; 403 prereq.)

Organic Chem 545 and 546 Lab

3&2 credits May 25 - July 3 MTWRF

A one-semester introductory course in organic chemistry. Not suitable for pre-medical, dental or veterinary students. Gen Chem prereq.

For engineering students needing one-semester general chem:

Chem 405 and Lab may be offered

4 credits

June 29 - July 31

Depending on sufficient demand

NSTA's New Science Teacher Academy, by Joe Sciulli, National Science Teachers Association

I'm Joe Sciulli, director of professional development programs for the National Science Teachers Association (NSTA), and the information I'd like to share is about NSTA's New Science Teacher Academy, www.nsta.org/academy.

In April, NSTA announced that it is accepting applications for the 2009 NSTA New Science Teacher Academy. The NSTA New Science Teacher Academy, co-founded by the Amgen Foundation, is a year-long professional development program established to help reduce the high attrition rate among science teachers new to the teaching profession. Intended for science educators entering their second or third year of teaching, the Academy is designed to help promote quality science teaching, enhance teacher confidence and classroom excellence and improve teacher content knowledge.

For this academic year, NSTA will select 185 teachers to participate as fellows in the 2009 Academy. NSTA Fellows chosen for the program receive a comprehensive membership package, online mentoring with trained mentors who teach in the same discipline, and the opportunity to participate in a variety of web-based professional development

activities, including web seminars. In addition, each NSTA Fellow receives financial support to attend and participate in NSTA's National Conference on Science Education, taking place in Philadelphia, March 17-21, 2010. Science teachers located throughout the country, who will be entering their second or third year of teaching and whose schedule is a minimum of 51 percent middle or high school science, are encouraged to apply for the program. Applications must be submitted no later than **June 30, 2009** to be considered.

Although we reach a large number of individuals involved in the science education community, there are still many science educators out there that don't know about this program. I'm hoping that you'll help spread the word and include the news about this exciting opportunity on your Web site and/or in your member newsletters and communications. The most comprehensive information to date can be found on the Academy Web site, link listed above.

If you have any questions please let me know. Thank you for your efforts to get this important information out. jsciulli@nsta.org ☀

Mount Washington Observatory Outreach Programs!



The Mount Washington Observatory is offering another great year of unique, exciting, and interactive programming for 2009! Our programs have been designed to fit the New Hampshire Frameworks and National Science Education Standards. Here are just a few ways you and your students can get involved:

In-classroom Outreach Programs. Observatory educators will visit your school or organization and provide an interactive program that will help your students better understand concepts of weather and climate. Choose from our existing programs (including Fundamentals of Climate, Lightning Science and Safety, and Observing Our Weather), or work with the outreach staff to develop a special program tailored to your needs and interest.

Weather Discovery Center Fieldtrip. Visit our Weather Discovery Center, located in North Conway, NH! There, your students will get the chance to explore our exhibits, participate in fun demonstrations and activities, and a *Live from the Rockpile*, our live virtual fieldtrip to the weather room atop Mount Washington. We also offer "Camp-In" programs.

Distance Learning. Brand new! Through videoconferencing technology, your students can take a live virtual fieldtrip to the highest peak in the Northeast and meet summit weather observers right from your classroom! For Distance Learning information and scheduling, contact Michelle Cruz at mcruz@mountwashington.org or 1-800-706-0432 (ext. 225). For more information, check out our website at <http://www.mountwashington.org/education/outreach/>.

Want to schedule a program at your school? Have questions? Contact Casey Taylor at ctaylor@mountwashington.org or call 1-800-706-0432 (ext. 211). Or schedule a program online on our website: <http://www.mountwashington.org/education/outreach/request.php>. We look forward to hearing from you soon!

The Mount Washington Observatory is a private, non-profit organization that staffs a year-round weather observatory on the summit of Mount Washington, the highest peak in the Northeast. In 1934 Observatory staff clocked the world record wind speed of 231 mph. In addition to engaging in weather observations and related research, part of our mission is to enhance awareness, understanding, and appreciation of the atmosphere, its complexity, its impact on the human experience and the many ways in which atmospheric phenomena are observed and interpreted. ☀

Mars Had 'Recent' Running Water, from *BBC News Online*, submitted by Lee Wilder

Mars appears to have had running water on its surface about one million years ago, according to new evidence. Images from a NASA spacecraft orbiting the Red Planet show fan-shaped gullies on the surface which seem to be about 1.25 million years old, the study says. They believe the channels were sculpted by surface water from melting ice. It may represent the most recent period when water flowed on the planet, a team from Brown University in Rhode Island, US, report in the journal *Geology*. <http://snipr.com/d099k> ☀

AGI ANNOUNCES EARTH SCIENCE WEEK 2009 THEME. Submitted by Lee Wilder.

The American Geological Institute is announcing that "Understanding Climate" is the theme for the 2009 Earth Science Week. Climate is perhaps the most visible earth science topic in the news. Climate affects humans today just as it has for millions of years. It is also pivotal in understanding how the dynamics of our planet function across different scales of time and space. Earth Science Week 2009 will engage students, educators, and the general public in understanding all the factors driving climate and the role climate plays in the history of Earth and humankind. "Students and the general public need to understand Earth's climate system, above and beyond the sound bites of public debate," says Ann E. Benbow, AGI's Director of Education and Outreach. "Earth Science Week 2009 will provide educators, students and interested citizens with the information, resources, and activities they need for scientifically sound climate education." AGI coordinates Earth Science Week annually in cooperation with its sponsors and the geoscience community as a service to the public. Each year, community groups, educators, and interested citizens organize celebratory events. Earth Science Week offers the public opportunities to discover the earth sciences and engage in responsible stewardship of the Earth. Earth Science Week is supported by the U.S. Geological Survey, the AAPG Foundation, and the broader geoscience community through grassroots activities. To learn more about this week and ways to become involved; including newsletters, local events, and classroom activities, please go to the Earth Science Week website at <http://www.earthsciweek.org>. ☀

Inquiry-Driven Science: A Critical Skills Institute for Science Teachers, submitted by Laura Thomas, Director, The Antioch Center for School Renewal

The 2008 science NECAP results have awakened science educators from across the region to a real issue that needs our attention. The results strongly indicate that students do not have very well developed critical thinking and problem solving skills as part of their science learning. This institute will focus on the utilization of the Critical Skills Classroom model specifically in the science classroom. The Critical Skills Classroom is a proven and highly successful model that builds critical thinking, creative thinking, problem solving, and collaboration skills along side the acquisition of science content knowledge.

Participants in the institute will study and develop science curricula based on student centered, experiential, problem based learning. This curricula will utilize the most rigorous science domain frameworks across the disciplines (earth, life, and physical sciences).

Over the five days of the institute, educators will explore methodologies and the integration of experiential, problem-based, collaborative, and standards-driven learning, focusing on the role of teacher in designing curriculum, guiding student understanding, and assessing performance. Teachers will also develop the capacities to build and advance their classrooms as dynamic, collaborative, science learning communities.

To learn more about the Critical Skills Model, visit our webpage at www.antiochne.edu/acsr

07/20/09 - 07/24/09 8:30 am - 4:30 pm Antioch University New England, Keene, NH

\$665 per person, \$2400 per team of 4 (significant financial aid may become available for this event)

Laura Thomas, Director, The Antioch Center for School Renewal, Antioch University New England, 40 Avon Street, Keene, NH 03431 ☀

A Re-Cap Of The Scobie Pond Electric Transmission Compound: Field Trip. By Robert Schroeder, Swasey Central School

“I’m not going to mince words, you could get killed here, you can die.” I am more used to being told where the donuts, coffee, and bathrooms are, as a three-hour workshop starts. Funny thing was; every one of us knew it was true. Even the Derry police will not enter the place we are going until these guys say it is safe.

My intent was to write this article from a ‘technical recap of the field trip’ point of view. The amount I really know about the content rendered that thought obsolete very early after the start of the workshop. So I’m going to dance around with pom-poms and make this an, ‘aren’t you glad you’re a member of the NHSTA?’ writing. I mean, we insiders get to hear about opportunities like this first. No special skills required, just keep an eye on the mailings and the web site. This opportunity filled up less than five hours after it was posted (...and, we will try and repeat this! Ed.).

First, our hosts guide us through a slide show of the electrical grid. The network of wires takes electricity from where it is produced to where it is distributed, and then used by consumers. The pictures offered the opportunity to understand, be amazed, and see electric power gone wild. The projector is operated by Mr. Charles Christensen, an engineer who designs functional aspects of the system and, step by step, overhauls, maintenance and upgrade procedures. The sturdy gentleman beside him, Jack Cadieux Jr., came up from the old school, having used a wrench for teething. He now works to construct and maintain the substations and lines. There is also a young fellow

who volunteered to help with the tour. He works to make sure the safety of land, creatures, and folks are an on going priority. His name is Courtney Russell. They all share a bright faced excitement for their work.

Next a tour of the warehouse. The place where all the ‘good stuff’, the components that make the grid work, are stored and retrieved for use when needed. From a ‘dog bone’ used to keep wires separated (and yes, it’s shaped like a dog bone), to a current transformer that was on a shelf somewhere. Items were pulled down, discussed, and put in context for the job they perform. Components and parts are ordered from all over the world. Interesting side bar, the price of fuel has made some American made parts more marketable. An unexpected upside to higher fuel prices.

Now it is out to the substation and the place they receive their power. This is a fenced in, locked, secure space. I’m still wondering if the facility we were at was also a transfer station for power to other places, or, if what I was seeing was the power receiving and distribution devices for just their needs. I’ll be the first to tell you that there were some aspects of the big picture that I was missing. I mean, I kept thinking, it’s all so seemingly complicated, but when you open the door to the panel of one of these very large devices, you get a big ‘on / off’ switch. My truck dash has more buttons. There definitely IS something I’m missing. (Yes the substation we viewed are hubs for the Transmission of power (energy) from the various generation stations in Maine, Vermont and New Hampshire to the more local distribution substations and then ultimately to the line along your street then into your home and work.)

I persevere as we leave the compound with our fire retardant overhauls. Mine is blue, blue-berry blue. When we get to Scobie Pond I don them and notice our hosts aren’t wearing the same suit. I wonder if there aren’t going to be a lot of back-slapping jokes on Monday morning, “Look, we actually got them to put them on.” I remember



A Re-Cap Of The Scobie Pond Electric Transmission Compound: Field Trip continued

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sending new sailors for a bucket of steam in the military; is this the payback? But the leaders of our group are all wearing fire retardant clothing too. Just more fashionable than the disposable blueberry blue overhauls we are now bagged up in. But now, under surveillance, and with calls to everywhere, we announce our pre planned arrival and unlock the gate and enter. This is the place the power production companies send their induced flow of electrons to, and then from here, our guide points, ‘that line goes to Derry’, he says. A line, two and half inches in diameter, and that’s Derry’s, twenty-four seven, electric power for every person in that town. What other power could do so much through so small a conduit? Raise your arms here; the electric field raises the hair on your arms. The place could be self sufficient for a few days too, as the only building in the compound has a bank of batteries charged and ready for use. And, invisible to us, is the network of wires below ground that make the entire place a Faraday Cage, grounding any electric discharge. Finally I spot something I understand, a box of toilet paper by a bathroom. Then there it is the huge transformer that came up Route 125 last fall and tied traffic up forever. I was so impressed when it lumbered through our town, and now, there it is, beside four other ones. Okay, I have worked on the flight deck of aircraft carriers, I can just handle this... not. This place and its technologies tax the credible.

The people who do this work are wonderful. Their rap would floor an English major. A conversation so fluid,

so filled with technical terms, correctly used, that it would stand on its own as literature, even if it wasn’t real. The dedication and pride they take in keeping the grid open is obvious. “This is the electric center of New Hampshire” sparks out of all three of them. Thank you.

My editor won’t let me hog up any more space and all I needed was fifteen more pages. Don’t miss the chance to do this. Stay a member, stay in touch. With the new Homeland Security laws, we may be involved in the last tours of this type.

I’m looking at the blueberry blue fire retardant suit I wore and the one my friend gave me. They hang like questions in the room, quite the conversation starters. Here are some others: www.PSNH.com; www.NEUtilities.com; www.NU.com ☼

By Robert Schroeder, Swasey Central School



**Check your mailing Label!
It contains your renewal date! If nothing in your “bio” has changed, you can renew your membership really easy. Simply send a check to NHSTA, PO Box 57, Lower Waterford, VT 05848 (its where the database person lives...).**

May is “Outdoor Science Learning Month”

The best way to prepare students for future success and interest in science is to get them outside collecting data, making observations, planning investigation, or solving problems in their community. We have developed a wiki-based website for teachers and school to use. The website <http://mayscience.wetpaint.com> has activities for schools and families to use plus links to other resources. Classes can add their own pages and share the observations they have made with others from our state.

This has been done with help from the NH Children in Nature Coalition, the NH Fish and Game Department, the NH Environmental Educators, the NH Department of Environmental Services, the NH Department of Education, and informal and formal science educators throughout the state.

NH Science NECAP Assessment

NH Science NECAP will be given to all students in NH during the Testing Window of May 11 to May 28th with pickup of materials to occur on May 29th. As in the past, the test will have 3 sessions, 2 which are Multiple Choice (MC) and Constructed Response (CR) and a third session that will be an Inquiry Task. At grade 4 the Task will involve working collaboratively in pairs to gather data from an investigation. Students will then use that data to individually answer questions. At grades 8 and 11, this year, the task will be a “Data Analysis Task” and involve not collaborative work. The third session for grade 4 will take 120 minutes and for grades 8 & 11 approximately 60 minutes will be needed. There will be a session here at the NH DOE on May 29th to talk about the NECAP Assessment in general and to collect information about problems concerns and what worked. This will help me as I will begin looking at new test items the first week of May. To register for the session on May 29th, please go to

http://www.surveymonkey.com/s.aspx?sm=TmrwLSA7Wmp58QjaBat0Aw_3d_3d to register for the May 29th session.

Mathematics & Science Summer Learning Experience (MSSLE)

Join us this summer for the Mathematics & Science Summer Learning Experience from July 27 to July 29th. We will have speakers and presenters on a variety of topics: This event will highlight the following topics relating to the teaching and learning of mathematics and science at grades K through 12:

- 21st Century Skills in Mathematics and Science Classrooms

- Applications of Mathematical and Scientific Models as Instructional Tools
 - Cognitive Research about how students learn mathematics and science
 - Connections to Post-Secondary Experiences in Mathematics and Science
 - Curriculum Topic Studies
 - Development and Evaluation of Course Competencies
 - Diagnostic Probes
 - Formative Assessment Techniques
 - Inquiry and Habits of Mind Development
 - Integration of Mathematics, Science and Literacy K-6
 - Leadership in Mathematics and Science Education
 - Mathematics and Science Learning Problems including Dyscalculia
 - Misconceptions/Misunderstandings in Mathematics and Science
 - Professional Development models to enhance educator content knowledge
 - Professional Learning Communities
 - Standards Based Instruction in High Schools
 - Technological Resources for Teaching/Learning Mathematics and Science
- Funding for this event can be obtained through Title II, Part A Redistribution Grant 2009 using the following link:

<http://www.ed.state.nh.us/education/doe/organization/instruction/boip/TitleII-A.htm>

This link also provides access to the MSSLE application form. In addition to teams funded by supplemental Title IIA funds, individuals may register as well.

Hope to See you at this event to be held at the Radisson in Nashua NH (formerly the Sheraton Tara).

Spending ARRA Local School Funds on Science Safety Equipment and Materials

Many school districts are about to get a windfall of money from the America Recovery and Reinvestment Act. There are funds allocated for each district for facilities maintenance and construction. If you lack the proper safety equipment in your science labs (including proper locking storage cabinets for chemicals, proper safety equipment (eye wash stations, chemical showers, demonstration barriers, Fume Hoods for chemical and biological experiments), proper eye protection (goggles) for all students, and aprons and

News From the NH Department of Education continued from previous page

gloves for all students.

If you lack adequate facilities for keeping student numbers in science labs at or under the maximum allowed by state law (RSA 306.17 (c)) of 24 students or less depending on the size (square footage) and number of work stations, you should see your administration or school board ASAP to get on the list for how the local funds can be spent.

Also, there are IDEA funds for students with disabilities. You can add workstations for wheelchair bound students or equipment for students with low vision to be able to better participate in science classrooms and lab activities. Districts will also have access to a whole new pot of educational Technology money that will need to be spent and used in content areas. Start making the list of the hand holds, projectors, and probes that you need to teach science better. Make sure this gets in your district application for funds. Or that you apply if classrooms and schools have that opportunity. The RFP will be posted soon. Cathy Higgins chiggins@ed.state.nh.us will be the contact person for the educational technology funds. ***Don't let your science program be left out of the ARRA Local Funding and spending!***

The on-demand webinar, "Stimulating Ed-Tech Investments: How to Maximize Stimulus Dollars," sponsored by **Excelsior Software**, is now available. This webinar focuses on the availability of federal stimulus funding sources that could help K-12 schools use new digital tools to improve teaching and learning.

This free, on-demand event will help school leaders answer such vital questions as: What money is immediately available for schools to funnel directly into ed-tech projects? What types of ed-tech programs should schools spend stimulus money on? What parts of the stimulus bill, though not earmarked for ed tech, could help schools achieve their technology goals? How can the money be used to improve schools' use of data management systems? How should schools target the money available for professional development?

Please use this URL to access the on-demand event: **www.edweek.org/go/MaximizeStimulusDollars**. For daily news, resources, and information on the latest developments on how the economic-stimulus package is affecting school and education funding go to **www.edweek.org/schools** and the stimulus. ☀

Resources available from Science Education and Outreach, National Institute of General Medical Sciences. Submitted by Alisa Zapp Machalek,

We have a growing collection of free science education materials available to you and your colleagues. These printed and online resources focus on medically relevant life sciences and are described at **<http://www.nigms.nih.gov/Publications/NAT0409>**. All of our materials are free of charge and are downloadable from the Web site above. Printed materials are available individually or in classroom sets.

Here is a sampling of our products:

>>Findings magazine, which profiles vibrant scientists and includes puzzles and games. Each semi-annual issue introduces students not only to cutting-edge research, but also to the varied personalities, hobbies and backgrounds of the researchers, who could serve as role models for future scientists. Our new 'Ask a Scientist' online feature allows students to submit relevant scientific questions to researchers profiled in the magazine. Free subscription

>>Award-winning booklets on topics like cell biol-

ogy, genetics, chemistry, pharmacology, structural biology and computational biology. Several of the booklets are enhanced with additional online content.

>>Interactive games and crossword puzzles that teach science

>>Scientific image galleries containing downloadable photos, illustrations and videos

>>Video and audio interviews with scientists

>>A monthly electronic newsletter that highlights recent scientific advances

These materials are produced by the National Institute of General Medical Sciences (part of the National Institutes of Health). They are not copyrighted and you are free to excerpt content from them to use in the classroom or on a class Web site. If you have any questions about NIGMS science education materials, please contact me at **MachaleA@nigms.nih.gov** or 301-496-7301. ☀

Useful Information from Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510, 1-800-452-1261, E-mail: flinn@flinnsci.com, Web site: www.flinnsci.com

Flinn's eLearning Video Series—Only \$9.95! Online “Teacher Training” Videos for Middle School Science Teachers. Flinn Scientific has just released a new, low-cost online eLearning Video Series to help science teachers build their content knowledge and teaching strategies—making it easier for their students to learn specific topics. Middle school teachers will find videos targeting the following three topics particularly valuable in building physical science teaching skills:

- The Scientific Method (5 different video packages available)
- Introduction to Chemistry (4 different video packages available)
- Density (4 different video packages available)

The Flinn eLearning Video Series features 20 award-winning high school chemistry teachers demonstrating their best activities and sharing enormous amounts of content knowledge, teaching tips and instructional techniques. Each video is approximately 40 minutes in length containing multiple episodes and support materials printable as PDFs and can be viewed multiple times. Teachers can watch and learn, from home or school, as master teachers model their styles and discuss strategies that have proven to be successful.

The new Flinn eLearning Video Series provides:

- First-Rate Instruction — Learn from some of the best high school chemistry teachers in the nation as they share their favorite, proven activities and techniques.
- High Quality, Innovative Training — You decide what and when you want to learn. The eLearning Video Series is available to you 24/7—all you need is a high-speed Internet connection!
- Proven Sustained Learning — Middle school science teachers will learn, retain and build content knowledge. Each video can be viewed multiple times at no additional cost, increasing mastery, knowledge and confidence.
- Guaranteed Results — These motivational presentations are loaded with instruction and teaching tips. Every video comes with detailed and clearly written ChemFax™ instructions printable in a PDF format. You will gain the valuable skills and knowledge you need to be more successful teaching science!

Flinn eLearning Video Series . To view free samples go to: www.flinnsci.com

Flinn eLearning Video Series Covering Electrochemistry . Three separate video packages offering training for chemistry teachers regarding creative ways to teach electrochemistry are now available through the Flinn eLearning Web site. These videos help teachers explain how principles of electricity and chemistry overlap. One video package, *Voltaic Cells*, discusses the flow of electrons in oxidation and reduction reactions. A second, *Electrolysis of Water*, addresses the use of an external source to “force” electric current through water. The third, *Electrolysis Reactions*, investigates what happens if the electrolyte contains ions that are more easily oxidized or more easily reduced than water molecules.

All are part of the new low-cost, online Flinn Teaching Chemistry™ eLearning Video Series developed to help chemistry teachers build their content knowledge and teaching strategies— making it easier for their students to learn and understand chemistry. Each video package is only \$9.95 and can be viewed for 14 days anywhere you have a computer with a high speed Internet connection. The Flinn eLearning Video Series features 20 award-winning high school chemistry teachers demonstrating their best demos, experiments and activities and sharing enormous amounts of content knowledge, teaching tips and instructional techniques. Each video is approximately 40 minutes in length—containing multiple episodes and support materials printable as PDFs.

Flinn eLearning Video Series Covering Nuclear Chemistry. A new video package offering training for chemistry teachers regarding educational ways to teach nuclear chemistry is now available through the Flinn eLearning Web site. This video will help teachers explain how nuclear chemistry can be used to benefit mankind—to generate energy, diagnose disease, and decode the human genome. The video package, *Nuclear Chemistry*, offers creative simulations and activities using consumer radiation sources providing safe alternatives for learning about the principles of nuclear chemistry—including a beautiful video of the use of cloud chambers!

This video is part of the new low-cost, online Flinn Teaching Chemistry™ eLearning Video Series developed to help chemistry teachers build their content knowledge and teaching strategies—making it easier for their students to learn and understand chemistry. Each video package is only \$9.95 and can be viewed for 14 days anywhere you have a computer with a high speed Internet connection. The Flinn eLearning Video Series features 20 award-winning high school chemistry teachers demonstrating their best demos, experiments and activities and sharing enormous amounts of content knowledge, teaching tips and instructional techniques. Each video is approximately 40 minutes in length—containing multiple episodes and support materials printable as PDFs.

Flinn eLearning Video Series for Chemistry Teachers. To view free samples go to: www.flinnsci.com

Introducing . . . **Professional Development for Chemistry Teachers—New Online Teacher Training Videos from Flinn Scientific Offer Professional Development Credits.** Flinn Scientific has just released a new, low-cost *Teaching Chemistry—eLearning Video Series* to help chemistry teachers build their content knowledge and teaching strategies—and you can even earn professional development credits. The Flinn eLearning Video Series features 20 award-winning high school chemistry teachers presenting their best demos, experiments and activities, and sharing enormous amounts of content knowledge, teaching tips and instructional techniques. Each video is approximately 40 minutes in length—containing multiple episodes with support materials printable as PDFs—and can be viewed multiple times at your convenience.

Watch and learn, from home or at school, as these master teachers model their styles and discuss strategies that have proven to be successful in their classrooms and laboratories. Nearly 500 learning episodes are now available as streaming video as part of more than 125 different content areas covering all major topics of the high school curriculum.

The new Flinn eLearning Video Series is an amazing resource providing:

First-Rate Chemistry Instruction—Our presenters are some of the best high school chemistry teachers in the United States, with more than 550 years of combined chemistry teaching experience.

High Quality, Innovative Training—You control what you want to learn and when you want to learn it. The “Teaching Chemistry” eLearning series is available 24/7—all you need is a high-speed Internet connection!

Proven Sustained Learning—With more than 125 different videos covering every aspect of the chemistry curriculum, you will learn, retain and build content knowledge. Each video can be viewed multiple times at no additional cost—increasing your mastery, knowledge and confidence.

Guaranteed Results—These highly motivational presentations are loaded with instruction and teaching tips. Every video comes with a set of detailed and clearly written ChemFax™ instructions that are printable in a PDF format. You will gain the valuable skills and knowledge you need to build confidence and be more successful teaching chemistry!

Earn Professional Development Credits—Beginning May 15, 2009 you will be able to access all the documentation you need to submit your request to obtain Professional Development Credits through your state/district.

To view free samples go to: www.flinnsci.com

FREE Laboratory Design Advice. Flinn Scientific, the leader in school science safety, offers two free ways to help teachers design a new lab or improve an existing lab. Flinn offers a Laboratory Design Packet and the opportunity to discuss your lab design project with Flinn’s Lab Design Specialist. The Flinn Laboratory Design Packet contains problem-solving ideas and helpful suggestions including: Science Lab Design Priority Lists; Sample Lab Designs; Safety and Equipment Checklists; Plus more great tips and advice gained from helping hundreds of teachers improve their laboratories.

Flinn’s Laboratory Design Specialist can offer advice specific to your school, your budget, and your needs. You can rely on Flinn’s safety expertise, practical knowledge, and years of experience to help you design an efficient laboratory that will provide a safe and successful learning environment.

Teachers are invited to request a free Laboratory Design Packet and to contact Flinn’s Lab Design Specialist for free advice guaranteed to improve your laboratory.

NHSEE EXPO 2009 Results, submitted by Janice Kaliski, NHSEE

CONCORD - A mother paced outside the Sweeney Gymnasium waiting for the 6th annual New Hampshire Science and Engineering Exposition to begin. “She has a really neat idea for removing milfoil from bodies of water in a way that will not cause harm to the environment.” Nervous as she was, this mother had no reason to worry as her daughter, Rose Flock-erzi from Spaulding High School, won second place in the Environ-mental Science Category for her project, “Milfoil Thermal Insulation”.

This experiment involves the making of Milfoil Thermal Insulation (a green product), and comparing its heat retention capabilities with the more common house insulation made of Fiberglass by providing a heat source and measuring their effectiveness. Also from Spaulding High School was the First place winner in the Environmental Science Cate-gory, Liz Moors.

Liz’s project, “Seashells versus Variable-leaf Milfoil” was designed to control the invasive species, variable-leaf milfoil, in local areas by using seashells or limestone to raise the pH just enough to kill the milfoil, but not to harm the surrounding community in any way. Are both of these projects possible “green” solutions for a major problem effecting the rivers and streams in our state?

A student at The Derryfield School, Katherine Grisanzio studied the relationship between strength of friend-ship and empathy by designing a survey to collect data from her peers to determine if those who had more friends also had more empathy. After doing an impressive statistical analysis of this data, she concluded that friendlier students had more empathy. Her investigation won first place in the Behavioral Science category.

Anastasia Bealo from Timberlane High School chose to build a musical instrument that has a tone produced by vibrating strings. Her instrument was built in advance and then used to perform on site in front of a panel of judges. Anastasia’s instrument earned her first place in the Musical Instrument Challenge Competition.

Rose, Liz, Katherine, and Anastasia were among the 115 students from 12 area high schools who competed in the annual expo that was held in the Sweeney Gymnasium on the campus of NHTI. During this academic year while enrolled in various science course students have also been involved in independent research. This event allows students a chance show how they have behaved as real world scientists do when faced with a problem that has to be solved. During the Expo, students showcased the results of their efforts while competing with other students in the Open Competition. Examples of the projects exhibited ranged from the Moors’ study on milfoil to the analysis of an ELISA of serum from mice immunized with *Crotalus atrox* rattlesnake venom to a study on the photodegradation of computer ink to a project to determine if the human body is electrical enough to be a battery.

Other students competed in the Challenge Competition that involves student teams competing against each other in designed challenges. Teams solve a structured problem such as building a musical instrument and per-forming it as Anastasia did, constructing a free standing paper tower that is capable of supporting a maximum load, or using a simple living thing and its natural food processing pathways to produce the maximum amount of carbon dioxide in a fixed period of time.

Projects were evaluated based on creativity, experimental design, data collection, results and analysis, and the presentation of results. “I am amazed over the potential displayed at this year’s Expo. Students this year inves-tigated a wide variety of topics that allowed them to think differently about the world in which they live” said Janice G. Kaliski, President of the New Hampshire Science and Engineering Exposition Association that sponsors the Expo.

Renowned physicist and Raytheon Fellow, Dr. Michael Hynes was the keynote speaker at the Awards Cere-mony. His presentation “Denying Armageddon: Preventing Terrorist Use of Nuclear Weapons” focused on the strategy and tactics the US Government is taking in preventing nuclear terrorism.



An expert on nuclear weapons, Dr. Hynes has worked many years on nuclear counter proliferation using questions such as “What to look for”, “How to see it”, and “What to do about it” Participants in the Expo used similar process skills to solve real world science and engineering problems. They have chosen a topic, researched it, designed a solution, and then tested their hypothesis. Dr. Hynes humbly admits that his interest in the kind of scientific research that he uses or applies today began when he was in the fifth grade. Dr. Timothy Antaya, NHSEEA Director, recently had this to say about his friend and colleague: “From grade school on, Dr. Hynes participation in science fairs formed the basis for his future career. He is an extraordinary person; we encounter few people like him in our lifetime. He is that special.”

Sponsors for this year’s Expo are New Hampshire Technical Institute in Concord, Great State Beverages in Hooksett, and Carolina Biological Supply Company in Burlington, North Carolina.

2009 EXPO WINNERS: OPEN COMPETITION



Category: Behavioral Science. First Place: Katherine Grisanzio, Derryfield School; Second Place: James Holmes, Seacoast School of Technology; Juliet Kassas and Jillian LaBranche, St. Thomas Aquinas; Kristen Pitkanenen, Seacoast School of Technology

Category: Biochemistry/Molecular Biology. First Place: Michael Craumer, Milford High School; Second Place: Victoria Seetaram, Seacoast School of Technology

Category: Botany. First Place: Ellen Comeaur and Katherine Manchester, Goffstown High School

Category: Chemistry. First Place: James Mc Williams, Salem High School; Second Place: Robert Keith, Seacoast School of

Technology; Lea Pervere, Portsmouth Christian Academy

Category: Earth Science. First Place: Jessica Eisfeller. Seacoast School of Technology; Second Place: Michelle Jarosz, Seacoast School of Technology

Category: Environmental Science. First Place: Liz Moors, Spaulding High School; Second Place: Rose Flockerzi, Spaulding High School

Category: Mammalian Biology. First Place: Brittany Bridgham. Seacoast School of Technology; Second Place: Jillian Porter, Milford High School

Category: Microbiology. First Place: Ken Plourde and Natalie Sroda, Goffstown High School; Second Place: William Eaton, Seacoast School of Technology; Zhihao Lu, Milford High School

Category: Pharmacology. First Place: KarryAnn Belanger, Seacoast School of Technology; Second Place: Jillian Stackhouse, Prospect Mountain High School

Category: Physics and Astronomy. First Place: Kyle Giguere, Seacoast School of Technology; Second Place: Dave Pratt, Seacoast School of Technology

CHALLENGE COMPETITION

Category: Musical Instrument. First Place: Anastasia Bealo, Timberlane High School

Category: Paper Tower . First Place: Blue Devils: Peter Alfano, Chris Borcoche, Corey Campbell, Kristina Terrio, Salem High School

Category: Yeast Growth. First Place: “Young Experimenters Attacking Science Together”: Casey Beranger, Mariah Bousquet, Amanda Macione, Joshua Soucie, Prospect Mountain High School

For more information, please contact Richard Feren, Executive Director of the Association at: rbferen@comcast.net or visit the website: www.nhsee.org





These articles were provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Where did all these gadgets come from?!

Ion propulsion. Artificial intelligence. Hyper-spectral imagers. It sounds like science fiction, but all these technologies are now flying around the solar system on real-life NASA missions.

How did they get there? Answer: the New Millennium Program (NMP). NMP is a special NASA program that flight tests wild and far-out technologies. And if they pass the test, they can be used on real space missions.

The list of probes that have benefited from technologies incubated by NMP reads like the Who's Who of cutting-edge space exploration: Spirit and Opportunity (the phenomenally successful rovers exploring Mars), the Spitzer Space Telescope, the New Horizons mission to Pluto, the Dawn asteroid-exploration mission, the comet-smashing probe Deep Impact, and others. Some missions were merely enhanced by NMP technologies; others would have been impossible without them.

²In order to assess the impact of NMP technologies, NASA has developed a scorecard to keep track of all the places our technologies are being used,² says New Millennium Program manager Christopher Stevens of the Jet Propulsion Laboratory. For example, ion propulsion technology flight-tested on the NMP mission Deep Space 1, launched in October 1998, is now flying aboard the Dawn mission. Dawn will be the first probe to orbit an asteroid (Vesta) and then travel to and orbit a dwarf planet (Ceres). The highly efficient ion engine is vital to the success of the 3 billion mile, 8 year journey. The mission could not have been flown using conventional chemical propulsion; launching the enormous amount of fuel required would have broken the project's budget.

³Ion propulsion was the only practical way,² says Stevens. In total, 10 technologies tested by Deep Space 1 have been adopted by more than 20 robotic probes. One, the Small Deep Space Transponder, has become the standard system for Earth communications for all deep-space missions.

And Deep Space 1 is just one of NMP's missions. About a half-dozen others have flown or will fly, and their advanced technologies are only beginning to be adopted. That's because it takes years to design probes that use these technologies, but Stevens says experience shows that ³if you validate experimental technologies in space, and reduce the risk of using them, missions will pick them up.²

Stevens knew many of these technologies when they were just a glimmer in an engineer's eye. Now they're ³all grown up² and flying around the solar system. It's enough to make a program manager proud!

The results of all NMP's technology validations are online and the list is

impressive: <http://nmp.nasa.gov/TECHNOLOGY/scorecard/scorecard_results.cfm>. For kids, the rhyming storybook, "Professor Starr's Dream Trip: Or, How a Little Technology Goes a Long Way" at spaceplace.nasa.gov/en/kids/nmp/starr gives a scientist's perspective on the technology that makes possible the Dawn mission. ☀

The Cool Chemistry of Alien Life

Alien life on distant worlds. What would it be like? For millennia people could only wonder, but now NASA's Spitzer Space Telescope is producing some hard data. It turns out that life around certain kinds of stars would likely be very different from life as we know it.

Using Spitzer, astronomers have discovered the organic chemical acetylene in the planet-forming discs surrounding 17 M-dwarf stars. It's the first time any chemical has been detected around one of these small, cool stars.

However, scientists are more intrigued by what was not there: a chemical called hydrogen cyanide (HCN), an important building block for life as we know it.

³The fact that we do not detect hydrogen cyanide around cool stars suggests that that prebiotic chemistry may unfold differently on planets orbiting cool stars,² says Ilaria Pascucci, lead scientist for the Spitzer observations and an astrophysicist at Johns Hopkins University in Baltimore, Maryland.

That's because HCN is the basic component for making adenine, one of the four information-carrying chemicals in DNA. All known life on Earth is based on DNA, but without adenine available, life in a dwarf-star solar system would have to make do without it. ³You cannot make adenine in another way,² Pascucci explains. ³You need hydrogen cyanide.²

M-dwarf and brown dwarf stars emit far less ultraviolet light than larger, hotter stars such as our sun. Pascucci thinks this difference could explain the lack of HCN around dwarf stars. For HCN to form, molecules of nitrogen must first be split into individual nitrogen atoms. But the triple bond holding molecular nitrogen together is very strong. High-energy ultraviolet photons can break this bond, but the lower-energy photons from M-dwarf stars cannot.

³Other nitrogen-bearing molecules are going to be affected by this same chemistry,² Pascucci says, possibly including the precursors to amino acids and thus proteins.

To search for HCN, Pascucci's team looked at data from Spitzer, which observes the universe at infrared wavelengths. Planet-forming discs around M-dwarf stars have very faint infrared emissions, but Spitzer is sensitive enough to detect them.

HCN's distinctive 14-micron emission band was absent in the infrared spectra of the M-dwarf stars, but Spitzer did detect HCN in the spectra of 44 hotter, sun-like stars.

Infrared astronomy will be a powerful tool for studying other prebiotic chemicals in planet-forming discs, says Pascucci, and the Spitzer Space Telescope is at the forefront of the field. Spitzer can't yet draw us a picture of alien life forms, but it's beginning to tell us what they could **and could not** be made of. ³That's pretty wonderful, too,² says Pascucci.

For news of other discoveries based on Spitzer data, visit www.spitzer.caltech.edu <<http://www.spitzer.caltech.edu/>> . Kids can learn Spitzer astronomy words and concepts by playing the Spitzer ³Sign Here!² game at spaceplace.nasa.gov/en/kids/spitzer/signs.

This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration. ☀

The Space Place (<http://spaceplace.nasa.gov>), NASA's award-winning web site for kids, presents the Space Place cartoon kids hosting their own talk show ³live² from the Space Place Clubhouse. Their guests are NASA scientists and engineers. The goal of ³Space Place Live!² is to introduce kids to the human, down-to-Earth side of real scientists and engineers working in the space program. Each guest is presented as a passionate and accomplished role model for every child interested in science or engineering. In the latest episode, the kids interview a cartoon version of the GOES satellite Deputy Project Scientist, Andre Dress. Andre works at NASA's Goddard Space Flight Center in Greenbelt, Maryland. He talked with Kate and Kyo about preparing the new GOES-O weather satellite and the team for the most exciting day of the mission—the launch! ☀

These articles were provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.

Elementary Science Education in the K–12 System, 4/22/2009 - Page Keeley, Senior Program Director, President-National Science Teachers Association (NSTA) 2008-09, Maine Mathematics and Science Alliance

“Any collection of things that have some influence on one another can be thought of as a system. Thinking of a collection of things as a system draws our attention to what needs to be included among the parts to make sense of it, to how its parts interact with one another, and to how the system as a whole relates to other systems.”—American Association for the Advancement of Science (AAAS) 1989, p. 166.

An essential component of higher-level thinking is the ability to think about systems—how parts relate to one another and to the whole. Systems thinking can help us see and understand science education in new ways. This is why one of the goals of my presidency, a goal also shared by President-Elect Pat Shane, is to take a K–12 system approach to supporting the need for high quality elementary science education in every school district.

Elementary science is a critical part of the K–12 science education system. Tragically, the enactment of No Child Left Behind (NCLB) has greatly diminished the time spent on teaching science in many elementary schools. In some schools that have not attained adequate yearly progress (AYP) status, science is not taught at all, and teachers are told point blank not to teach science so they can spend more time on reading and mathematics. The good intentions of NCLB eroded the fundamental foundation for science in our K–12 education system. One of the crucial parts for a fully functioning system is missing or damaged.

Learning in science begins in early childhood. This is a time when young minds are curious about science and ready to engage in the practices and language of science that form a foundation to be built upon and strengthened throughout a student’s K–12 education. Young children bring to science views of the natural world and ways of thinking that have a major impact on their learning as they progress from one grade level to the next. Ignoring these ideas and delaying the development of science language and practices until students formally encounter science in middle school certainly violates what we know

about systems: If one part is missing, it affects the other parts of the system.

“Something may not work as well (or at all) if a part of it is missing, broken, worn out, mismatched, or misconnected.”—(AAAS 1994, p. 264).

We know science education is not working well for many students in the United States. We also know our system of education is strongly connected to our ability to compete in an increasingly global economy dependent on highly skilled workers in the science, technology, engineering, and mathematics (STEM) fields. One solution in the past few years has been to funnel more funds into Advanced Placement and International Baccalaureate courses in high schools, undergraduate and graduate education, recruiting qualified secondary science teachers, and increasing the rigor of middle level classes. These strategies might work if they match well with the other parts of the system. However, we can’t expect students who have missed six years of science to suddenly be prepared to take on more demanding opportunities to learn science in middle and high school. All the parts of the system that should include the K–6 years of knowledge and skill building are not there to support the cumulative steps that contribute to high levels of learning.

When we look at the progression of learning over time, starting with fundamental ideas and skills developed in preK–2 and built throughout the elementary years, teachers are often surprised to find middle school and high school students have major misconceptions about fundamental ideas developed early on that went unchallenged through school. They are also dismayed to find there are often large gaps in students’ conceptual understanding of even basic ideas in science. Is it reasonable for a school district to eliminate science for six years and then expect students to fill in the blanks in middle and high school? Science learning is a cumulative process. It is time to give science a foothold equal to that of reading and mathe-

mathematics in the K–6 curriculum.

We all have a responsibility to advocate for high quality elementary science programs, increased time spent on teaching elementary science, and opportunities for elementary teachers to get the professional development they need to teach science well. The burden for elementary science advocacy can't be placed solely on the elementary teachers who like to teach science. Middle school and high school teachers, I implore you to speak out to your administrators and help them understand the ripple effect the demise of elementary science has had on student learning in your grades. Your teaching is affected significantly by the loss of elementary science!

You can also push for more elementary science professional development. Bring a team including elementary, middle, and high school teachers from your district to an NSTA conference. Stay tuned for more information about an upcoming NSTA Research Dissemination Conference (RDC) on linking research to practice in elementary science, to be held at the 2010 NSTA National Conference in Philadelphia. Encourage the formation of elementary science professional learning communities to learn how to best restore science to the curriculum and advance K–6 science learning. Encourage a K–6 team to attend NSTA's August 2009 summer institute on Professional Learning Communities in Science.

Public support for early science education is important as well. Parental involvement is key to increasing the public's understanding of why science education must begin in the early grades. The new NSTA Science Matters website is a great source of material for helping parents understand the importance of elementary science.

Even though not all of us teach elementary science, we have a collective responsibility to ensure every student in every grade has the best possible science education. That is why we as individuals must act as a system. A simple K–2 systems learning goal says, "When parts are put

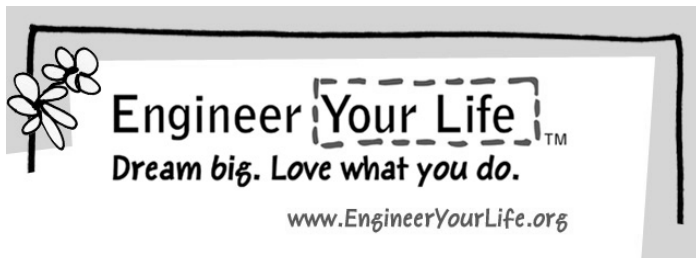
together, they can do things that they couldn't do by themselves" (AAAS 1994, p. 264). Imagine what the output could be at the end of grade 12 if we all band together to strengthen our K–12 science education system to include six years of rigorous, high quality elementary science. After all, each part of the system, including elementary science, contributes to the whole. We can't continue assuming we will increase our schools' output of students who will become our next generation of scientists and engineers without ensuring an input of elementary science learning into the K–12 system.

References

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AAAS. 1994. *Benchmarks for science literacy*. New York, NY: Oxford University Press. ☀

Free resource to help high school girls discover engineering! Ellen Robinson, Outreach Coordinator, Engineer Your Life



Engineer Your Life (EYL) is a web site and national campaign that breaks down stereotypes about engineering and encourages girls to consider it as a career option. EYL has streaming video of inspiring women engineers, descriptions of dream engineering jobs, and resources for educators on how to talk to young women about this field.

Use EYL to show high school girls how exciting and rewarding an engineering career can be:

Check out the EYL Web site <<http://www.engineeryourlife.org/>> and resources you can use to advise students.

Encourage your students to visit the site.

- Incorporate EYL into your career exploration programs and curricula.

Questions? Contact **feedback@engineeryourlife.org**

Thank you, Ellen Robinson, Outreach Coordinator. Engineer Your Life

EYL was developed by WGBH Boston and a coalition of 90+ engineering organizations and is funded by The National Science Foundation and Northrop Grumman Foundation. ☀

Message from Lisa Lavalley, NHSTA President, continued from page 1

will include in the menu tabs for newsletters, upcoming workshops, conference details, etc. A new logo was voted on by the board and will make its appearance on the web page and other documentation (see page 1!).

NHSTA is also considering consolidating its database, survey monkey, and mail chimp programs into one easy to use online management group. More details to follow. And lastly, the conferences for the 2009-2010 school year are already in the works. Save the date for the second Attitash Con-

ference to be held October 25 and 26, 2009, with Sunday allocated to day long field trips and Monday to the typical hour long presentations (also see page 1). The spring conference will be held in March and talks are in the works with Phillips Exeter Academy once again to host it at their beautiful facility.

I hope you all have a wonderful, relaxing summer and that your wishes for whatever you want to do are fulfilled.

Sincerely, Lisa Lavalley, President NHSTA ☀

Joining NHSTA—2009-2010, by Lisa Lavalley, NHSTA President

Here is a reminder about membership dues for the New Hampshire Science Teachers Association, (NHSTA). This is truly the best membership deal out there! Dues are presently \$20.00 per year for an individual membership. Retired, pre-service, and first year New Hampshire teachers receive a complimentary one year membership. School membership prices are as follows: (1-10 teachers \$200; 11-20 teachers \$250; 21 or more teachers \$300). Membership dues pay for a one year membership effective from the joining date until one year later (this is new). **Please check your mailing label for your renewal date** (and note that there is a delay between when the labels are printed and when they are mailed). You will be receiving a reminder letter like this early in the month prior to your renewal date.

NHSTA is the professional science teachers' organization for the state of New Hampshire. The benefits of membership in NHSTA include:

**your own copy of the quarterly NHSTA newsletter, full of science news, events, resources, activities, and classroom ideas delivered to your home; *the opportunity to become involved in a leadership role by serving on an NHSTA committee or on the NHSTA Board of Directors; *access to high quality, content-rich, professional development opportunities; *a chance to be recognized through receipt of an NHSTA award such as the Bill Ewert Award or the Howard H. Wagner Award; *affiliation with the state's only professional organization specifically for science educators; *satisfaction of knowing that you are connected with over 700 other science educators throughout New Hampshire; *the opportunity to apply for mini-grants offered by NHSTA; *registration forms delivered to your home for all NHSTA sponsored events; *reduced registration fees to all NHSTA sponsored activities; *early electronic notification of science opportunities in the state.*

Your dues purchase a one year membership. **To join NHSTA please fill in the following form and send it with a check for the appropriate amount. A free membership is extended to retired, pre-service and first year K-16 New Hampshire teachers.** Mail the form and check to: NHSTA, PO Box 57, Lower Waterford, VT 05848. The form below is also available on line at: <http://www.nhsta.net/NHSTA/membership.htm>

Name: _____

Please check one of the following:

_____ New NHSTA Member (\$20) _____ Renewing NHSTA Member (\$20)
_____ Retired teacher (complimentary) _____ Pre-service teacher (complimentary)
_____ First Year Teacher (complimentary - one who has not taught before...)
_____ School Membership* (1-10 teachers \$200; 11-20 teachers \$250; 21 or more teachers \$300)

School Name: _____

NHSTA member address Preference: _____ Home _____ School

School Address: Street _____ Town _____ Zip code _____

School Phone _____ school e-mail _____ **

Home Address: Street _____ Town _____ Zip code _____

Home phone _____, home e-mail _____ **

Grade(s) taught _____ Subject taught _____

*If this is a school membership, attach all members' information in one envelope with check and make note of school on all applications. **If you provide an e-mail address, we will confirm receipt of your application. Send form to: NHSTA, PO Box 57, Lower Waterford, VT 05848

NHSTA Newsletter

Summer, 2009

New Hampshire Science
Teachers' Association
PO Box 57
Lower Waterford, VT
05848

Email: nhsta@together.net

[<www.nhsta.net](http://www.nhsta.net)



The New Hampshire Science Teachers' Association is the professional science teaching organization for our state. Its purpose, as stated in its constitution, is to promote and improve science education in New Hampshire. NHSTA membership consists of all people interested in science education who have paid their regular membership dues. Dues are presently \$20.00 per year. NHSTA is a volunteer organization run by an elected Executive Board consisting of a president, vice-president, secretary, and treasurer. The Board of Directors is appointed by the Executive Board and represents New Hampshire's geographic regions and its various educational levels and disciplines. The Board meets monthly. For more info visit www.nhsta.net

Have a teaching idea that you'd like to share? An event? An opinion? Type it in a word processing program and e-mail it as an attachment (or—just paste it in the e-mail) to: nhsta@together.net with “newsletter” in the subject area.

Note: Please check your mailing label for your NHSTA membership renewal date! Thanks!!

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