

New Hampshire Science Teachers' Association

February Newsletter, 2009

Volume 5, Issue 3

February, 2009

NHSTA Newsletter Editor: Paul Williams (The correct edition title this time...)

Message from Lisa Lavalley, Pinkerton Academy, NHSTA President

Hello Science Educators of New Hampshire,

The arrival of this newsletter means that it is almost spring and that another year is quickly winding down. The Board of Directors for NHSTA has had an extremely busy year. Not only did we sponsor a very successful fall conference at Pinkerton Academy, but also will be hosting the spring conference at Exeter Phillips Academy in a few short weeks- March 24, 2009 from 7:30 am-2:15 pm to be exact (see below and pages 3, 10-14)

Below is a summary of all we have accomplished this year:

- 1) Quick Books is up and running. This program allows us to more easily record and review our finances. This will be useful come tax season.
- 2) NHSTA has consulted with a lawyer as well as an accountant to assure that we reside within the legal boundaries of a non-profit organization and

adhere to the statutes that govern said organizations.

3) Survey Monkey has been utilized as a way for members to register for conferences, as well as to sign up presenters and exhibitors for conferences. It will also be used for voting purposes, workshop registration and workshop evaluation.

4) "Paypal" is now being used to pay for conferences and workshops right on line. This credit card service is linked directly to the bank, Laconia Savings Bank, eliminating a middle man. Check out www.nhsta.net to download a copy of the conference booklet and to register and pay for the conference!

5) Mail Chimp is still in its infancy. This new technology will allow NHSTA to send a very large group email to the membership in an easy and safe manner. It is a mail server that ensures security and privacy to everyone on its mail list.

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NHSTA's Annual Spring Conference for K-12 Educators, by Amy Rockwell, 2009 Spring Conference Chair

Don't miss out on New Hampshire's largest science conference for K-12 educators on Tuesday, March 24, 2009 at Phillips Exeter Academy, Exeter NH. The NHSTA K-12 Spring Conference will highlight workshops in all strands of science, technology, assessment, literacy and much more. Gain new teaching ideas and strategies with a diverse offering of workshops - over twenty to choose from each session. Enjoy the exhibit hall with over forty exhibitors to boost and enhance your classroom. Take the opportunity to network with peers and professionals who nurture your passion for science!

One highlight of the conference is the keynote speaker, Tom Wessels, ecologist and renowned author of numerous books, including *Reading the Forested Landscape*. Tom will also be conducting an interpretive walk through Exeter for a limited number of people who register early. Come join us in Exeter to get information on relevant issues, network with educators throughout the state, and to simply enjoy a day dedicated to science education in the state of New Hampshire! Go to www.nhsta.net or e-mail at rockwella@sau25.net for more information. Can't wait to see you there! **See pages 3, and 10- 19 for a synopsis of the entire conference!**





NHSTA Board of Directors

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President – Lisa Lavalley, Pinkerton Academy
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Newsletter Editor, Database Engineer, Conference Organizer – Paul Williams

Annual Spring Conference—Tuesday, March 24, 2009, Phillips Exeter Academy (See page 3 and 10-17).

Annual Fall Conference—Late October (Sunday - October 25 and Monday, October 26, 2009), Attitash Resort, Bartlett, NH

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

Phillips Exeter Academy Exeter NH

Keynote Speaker: Tom Wessels: "Reading the Forested Landscape"



This program includes workshops in the life, physical, environmental, and Earth sciences for all science disciplines and levels for grades K-12. Various textbook companies, science supply houses, and educational organizations will also display their wares. Join with colleagues and carpool from your town or school. Professional development clock hours available.

Keynote Speaker: Tom Wessels

Tom Wessels is an ecologist and founding director of the master's degree program in Conservation Biology at Antioch University New England. He is former chair of the Robert and Patricia Switzer Foundation that fosters environmental leadership through graduate fellowships and organizational grants. He serves as an ecological consultant to the Rain Forest Alliance's SmartWood Green Certification Program. In that capacity Tom helped draft green certification assessment guidelines for forest operations in the northeastern United States and adjacent Canada. Tom has conducted landscape level workshops throughout the United States for over 30 years. His books include: *Reading the Forested Landscape*, *The Granite Landscape*, *Untamed Vermont*, and *The Myth of Progress: Toward a Sustainable Future*.

NHSTA Spring 2009 Conference Committee

Chair: Amy Rockwell, Lurgio Middle School; Brewster Bartlett, Pinkerton Academy; Heather Brunelle, Lurgio Middle School; Janet Chamberlin, Newmarket Junior-Senior High School; Lisa Lavalley, Pinkerton Academy; Leslie McRobie, Somersworth Middle School; Steve Roberts, Interlakes Middle Tier; Patty Smith, Hollis-Brookline Middle School; Paul Williams, NHSTA

KEY TO ABBREVIATIONS

Code = SCIENCE CONTENT

ES =Earth/Space; EV= Environmental; L = Life; P = Physical; T = Technology

A = Assessment; LIT= Literacy

Code = GRADE SPAN

E = Elementary; M =Middle School; H = High School; A = K-12

Code = FORMAT

DE = Demonstration; DI = Discussion; L = Lecture; H = Hands-on

NHSTA CONFERENCE SCHEDULE

Registration, exhibit hall, and workshop sessions are all located in the Phelps Science Center on Tan Lane. Keynote speaker and lunch will be in different buildings. Maps will be provided at registration.

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David S. Chase, Passionate about his environmental work and a Friend to the New Hampshire Science Teachers Association passed away recently (reprinted from the Concord Monitor, 11/28/08).

November 28, 2008 - 7:06 am

David S. Chase, Ph.D., 60, of Concord, died suddenly Monday, Nov. 24, 2008, at home. He was born in Concord, the son of Stanley A. and Georgette C. (Provencher) Chase.



He was a graduate of Concord High School. He received his undergraduate degrees at UNH, attended programs at Utah State and the University of North Dakota and received his Ph.D. from the University of Wales (U.K.).

He was passionate about his work and more than generous with his time and knowledge. At the time of his death, he was the manager of the Radon Program for the state of New Hampshire Department of Environmental Services. He participated in education, inspection and policy making nationally and internationally on environmental issues related to radon.

Past activities include advisory committee member for EPA policy and World Health Organization working group on global standards for radon measurement. Under his guidance, New Hampshire's radon program received national recognition.

He spent his free time building his home in Loudon. He enjoyed photography and cabinet making. He will forever be remembered for his spontaneous visits to his friends and family and his meticulous attention to detail.

David is survived by his mother, Georgette C. Chase of Concord; father, Stanley A. Chase and his wife, Jean M., of Concord; sisters, Kathleen Sherwell and her husband, Craig, of Franklin and their children, Christopher, Anna and Catherine, and Christine E. Minery of Corinth, Vt.; stepsiblings, Diana Merrill and her spouse, Terry Welch, of Concord, Susan Murray and her spouse, Gene Berry, of Linneus, Maine, Kenneth Merrill of Concord, and David Merrill of Center Barnstead; nephews and many aunts and uncles; and numerous friends here and abroad.

He was predeceased by a brother-in-law, Fredrick Minery; and a stepbrother, Lorin Merrill Sr. Visiting hours and Funeral services were held at Waters Funeral Home, 50 S. Main St., Concord. Burial will be held at a later date.

Donations may be made in David's memory to the American Heart Association's New Hampshire affiliate, 2 Wall St., Manchester 03101. ☀

Advanced Placement Environmental Science course available through the Encyclopedia of Earth website, Cynthia Barakatt, Director of Content Development, Encyclopedia of Earth

The Earth Portal is pleased to announce that the Advanced Placement Environmental Science course developed by the University of California College Prep initiative is now available through the Encyclopedia of Earth website.

See: http://www.eoearth.org/article/AP_Environmental_Science_Online_Course

Based on curriculum developed for California schools, the online course covers all material outlined by the College Board. It includes 25 chapters on topics ranging from energy flows to environmental laws and regulations, and the chapters may be used independently or sequentially as a full course. In addition, the chapters can serve as resources for teachers and students in other science courses at the high school or undergraduate level. The Encyclopedia of Earth (EoE) is a free resource written by experts as a means of providing accurate and understandable scientific information on environmental issues to the public. The EoE is one component of the Earth Portal, which also include the Earth Forum, presenting blogs by scientists, and Earth News, featuring the latest environmental news from around the globe. The National Council for Science and the Environment in Washington, DC serves as secretariat for the Earth Portal, and the editorial staff of the Encyclopedia of Earth is based at Boston University. For more information visit www.eoearth.org and www.earthportal.org. ☀

Don't forget to Register for the 5th Annual K-12 Nanotechnology Teacher Conference

**Wednesday, April 8, 2009 at Holloway Commons on the Campus of
The University of New Hampshire Durham, NH**

FREE and Open to all K-12 teachers with a knowledge of or interest in science and technology.

Nanotechnology is the latest “revolutionary” technology that will bring sweeping changes to the 21st Century. In fact some of the applications are already here. Find out what they are, and how they will affect the lives and professions of your students in the near future. Come to the Nanotechnology Conference and get answers to all of the following questions:

- What is Nanotechnology?
- Where is it being investigated?
- Why is it so important?
- What applications of nanotechnology already exist?
- What applications are thought possible in the next 5 to 15 years?

What are the societal and ethical impacts of nanotechnology?

Also learn how **you** can get involved in developing ways to inform the next generation of workers (your students) who may very well earn their living as well as benefit from this new technology.

We anticipate several new presenters—so if you attended last year, there will be something new for you!

Tentative Program Schedule:

8:30 am—check-in

9:00 am—Continental Breakfast

9:15 am—Welcome

9:30-10:30 am—First session of workshops

10:30-10:45 am—Break

10:45-11:45 am—Second session of workshops

12:00 pm — Buffet Lunch

1 pm—Keynote speaker

2:15 pm—Announcements and concluding remarks

REGISTRATION BEFORE THE CONFERENCE IS **REQUIRED**. Registration information available from the Nanoscale Science and Engineering Center (NSEC)—Center for High-rate Nanomanufacturing at the University of New Hampshire and funded through a grant from the National Science Foundation. Please contact: Susan Greenberg, K-12 Outreach Coordinator, at UNH, Parsons Hall, 23 College Rd., Durham, NH 03824, 603-862-3325, 862-4278 fax, susan.greenberg@unh.edu. Go to <http://www.nano.unh.edu/images/conference4.4-9-08.pdf> to see pictures from last spring!

The Exeter Astronomy Conference, submitted by John A. Blackwell, Director of Grainger Observatory, Phillips Exeter Academy

Dates for the Second Exeter Astronomy Conference: 21-26 June 2009 The Exeter Astronomy Conference is a weeklong meeting of secondary school astronomy educators of all levels. The goal is to gather 14 teachers from around the United States to:

Share their experiences as astronomy educators, Generate long-term collaborations between astronomy programs at various schools, Learn about changes to the science of astronomy and to astronomy education, Revitalize and refresh astronomy educators.

This program is to be held three times over the next six years.

Applicants will be chosen such that individuals from a diverse astronomy education background are involved. This will allow us to share our knowledge and spread our experiences. Topics for this year's conference include:

Tips and tricks for successful astronomy education.

Goals of astronomy courses: Syllabus construction to accommodate the rapid developments in the science.

Meeting the needs of the students and the course: Prerequisites.

Textbooks and software: available resources for the educator.

Observing Components:

Computer use in the field.

Merging observational astronomy into classroom discussion.

Equipment Selection: Cost versus performance analysis.

Equipment use: From binoculars to CCD imagers.

External Resources: User groups, associations, planetariums, other schools, etc.

Course-long projects in observational astronomy.

Food and lodging are provided by the Academy. Limited travel funds available.

Download an Application: http://www.exeter.edu/Astronomy/4380_4634.aspx

Please contact us for more information:

John A. Blackwell, Director of Grainger Observatory jblackwell@exeter.edu (603) 777-3545 ☀

The NH Science & Engineering Expo which will be held on March 12. Link to their web site - www.nhsee.org

Volunteers Needed for the 54th Season at The Little Nature Museum

Do you enjoy helping people, especially children? The Little Nature Museum, located at Gould Hill Orchards, Contoocook, is looking for individuals who can help people enjoy and learn from the activities and exhibits in the nature center. Smiles are guaranteed! Training and insurance are provided. Show visitors what there is to see and do in the Museum; sell items from the small nature shop; and do some minimal record keeping. Even though no experience is needed, you should enjoy nature and helping people. A minimum age of 18 and a commitment of only three afternoons during our season of June 27th—November 1st are required. A parent and a child age 6 and up may volunteer together. If you are interested in learning more about volunteering, check the Museum's website, www.littlenaturemuseum.org. E-mail at info@littlenaturemuseum.org or call **603-746-6121**.

The Little Nature Museum Inc. 216 Tucker Drive, Hopkinton, NH 03229-2426
603-746-6121. www.littlenaturemuseum.org nature-museum@conknet.com

Sharing nature with people for 54 years ~ 1955—2009



Online Earth System Science Courses



Earn graduate science credits from Plymouth State University in the comfort of your own home!

The courses are standards and research based and designed to model best practice for online education. These courses were developed and are sponsored by the Earth System Science Education Alliance (ESSEA) . The courses may be previewed at: <http://oz.plymouth.edu/~essea/>, the course will be modified slightly from what you see on the preview page. This is the last discounted tuition course in a series of courses that will be offered as part of the three year project *Preparing the Earth System Scientists of Tomorrow* at Plymouth State University.

Spring 2009

NS5090.03 - Special Topics in EARTH SYSTEM SCIENCE - 3 Credits
Plymouth – Boyd Hall 229

The course material is organized around the national standards for K-12 Earth Systems Science (ESS) education. Students will meet multiple times to share ideas in a face-to-face environment with the majority of class conducted online. The course is appropriate for any educator wishing to become familiar with or increase their knowledge of ESS. Familiarity with online classes is a plus but not a requirement.

This semesters topics are: **Analyzing Earth System Science Data Sets, What Hazards Do Solar System Objects Present to Earth's Biosphere, and Application of Earth System Science concepts to local contexts.**

Registration information and class meeting times can be found at the PSU Graduate School's homepage.

<http://www.plymouth.edu/graduate/courses.html>

Please note - course number may not match exactly.

Contact - Mark Turski markt@plymouth.edu

Tuition: This class will be offered at a reduced tuition rate of \$430 for 3 credits.

Class size: the class sizes will be limited to 16 teachers.

HabitatNet Field Program: TROPICAL ECOLOGY "RAPID BIOLOGICAL ASSESSMENT PROGRAM."

DATE: August 10 - 17, 2009 Leader: Dan Bisaccio – HabitatNet

Field Site: The El Eden Biological Preserve is located 27 kilometers west of Cancun in the north/ central region of the Yucatan Peninsula. The enormous biological diversity is recognized by both the Center for Ecological Studies (Mexico) and the World Wildlife Fund as a global natural resource and as such they have begun a rapid biological assessment of the preserve.

We will be staying at the El Eden field research station located within the Core Zone of the preserve. This area is only open to field researchers and is home to over 400 species of birds (equal to the number of bird species found in all of North America), stable populations of jaguar, ocelot, spider, and howler monkeys. Additionally, in a one acre plot, there are more tree species found than in all of North America.

During the first two days of this course, students will study tropical botany at the Quintana Roo Botanical Gardens and marine ecology (snorkel on the world's second largest barrier coral reef). We will then travel to the El Eden Ecological Reserve where I will be teaching students tropical ecology as they conduct the SI/MAB biological diversity research. Evenings will include mist-netting bats, night hikes, and Socratic seminars discussing issues in conservation biology. Additionally, students will have an opportunity to visit an unpublished Mayan village site at the reserve. The purpose is to establish baseline data on the diversity and continue work on defining the ecological function of the species present at the El Eden Ecological Reserve. Overall, this is an unusual and unique program in that it allows students an opportunity to conduct authentic field research. Student field research is published as a field report with the SIMAB Program in Washington, DC.

Dan Bisaccio has been leading these trips for twenty plus years and is an adjunct researcher for the Smithsonian Institution's Monitoring & Assessment of Biodiversity (SIMAB) Program as well as on the Advisory Council for the El Eden Ecological Reserve. Dan is currently the Director of Science Education at Brown University.

COST: \$1,150. (includes all lodging and all meals at El Eden Reserve, three nights at a hotel in Puerto Morelos, ground transportation, instruction/ instructional & field materials, snorkel trip and pre-trip orientation materials).

Please return the following registration form with a \$300 first payment to: Dan Bisaccio by March 15, 2009. Checks should be made out to - Natural Science Seminars AND mailed to:

Dan Bisaccio, PO Box 98, Troy, New Hampshire 03465

Registration Form

El Eden Ecological Reserve – SHS Rapid Biodiversity Assessment Program

Name: _____ Phone: _____

Address: _____ State & Zip: _____

EMAIL: _____

Additional Information:

1. Questions? Contact Dan at: Dan Bisaccio: Email: habitatnet@sprise.com or Daniel_Bisaccio@Brown.edu Education Department – Box 1938, Brown University Providence, Rhode Island 02912. Phone: 401 863-3428

2. Upon deposit, all registered participants will receive a detailed trip information (detailed itinerary, what to pack, and readings).



Summer Institute in Physics and Physical Science for Inservice Teachers, by Nina Tosti, University of Washington

June 23-July 31, 2009 (tentative)

Department of Physics, University of Washington, Seattle

The Center for Physics Education in the University of Washington Physics Department offers a six-week, 10-credit summer institute in physics and physical science for full-time inservice teachers. The 2009 institute is tentatively scheduled for June 23-July 31 at the UW in Seattle. Classes meet from 9 a.m. to 3:30 p.m. Monday-Thursday. Directed by Professor Lillian C. McDermott and supported by the National Science Foundation, the institute is tuition-free and a \$1500 stipend is offered on successful completion of the course work. Additional money is available if needed to help defray the cost of lodging for persons from outside the Seattle area.

The *Physics by Inquiry* curriculum used in the course has been especially designed to strengthen the subject matter background of teachers in topics typically covered in precollege physics and physical science using a hands-on, inquiry-oriented method of instruction. The materials emphasize the development of fundamental concepts and reasoning skills through laboratory experience. The class is divided into two sections: one for elementary-middle school teachers with little or no background in physics; the other for high school teachers of physics, physical science, and mathematics.

The application deadline is February 28, 2009.

Additional information is available on our website <<http://www.phys.washington.edu/groups/peg/si2009.html>>.

For further information contact:

Nina Tosti, University of Washington, Department of Physics, Box 351560, Seattle, WA 98195-1560
phone: 206.685.2046

tosti@phys.washington.edu



You can save the rainforest by shaping the new climate change agreement. By Bruce Calhoun, President, Save The Rainforest, Inc.

The last, best chance to save the world's rapidly dwindling tropical forests is upon us. The nations of the world are negotiating a new climate change agreement this year that could include compensating developing countries for protecting their forests---which sequester up to 400 tons of carbon per hectare. If this happens, developing countries could receive between \$600- \$8000 from the international carbon trading market for every hectare of standing forest they preserve. Such an incentive would trigger strict protection of forests throughout the tropics. To find out how teachers and students can help shape the outcome of the climate change negotiations visit Save The Rainforest's website at www.saverfn.org. ☀

Check the label on this newsletter! It not only contains your preferred mailing address, but it also includes your membership renew date! Your dues purchase a one-year membership effective from your joining date. If you need to change anything, e-mail nhsta@together.net with the changes!

Spring conference—continued from page 3

7:30 - 12:00 **Exhibits** Grainger Auditorium

7:30-8:30 **Registration** Lobby, Phelps Science Center

Coffee, pastry, and juice will be available in exhibit hall.

8:45 - 10:00 **Keynote Speaker** Academy Building

Tom Wessels: “Reading the Forested Landscape”

“It is wonderful to know nature through one-on-one encounters with other organisms, but it is perhaps more empowering to gain a fuller understanding of the patterns that have shaped its landscapes. Through some knowledge of history and the broader view of seeing a forest and not just its trees, we begin to see the forces that shape a place. This new way of seeing creates reverence, respect, a sense of inclusion and accountability. Reading the landscape is not just about identifying landscape patterns; more importantly, it is an interactive narrative that involves humans and nature. For those interested in enhancing their sense of place, I know of no better way than by becoming intimately acquainted with their local forests and the fascinating stories they tell.” Tom Wessels 1997

Tom will have various books for sale in the exhibit hall.

10:00 - 10:30 **Exhibits/Coffee Break** Grainger Auditorium

10:30-12:30 **Interpretive walk with Tom Wessels** Pre-registration was required through www.nhsta.net

10:30 - 11:30 **Session I** Phelps Science Center

11:30-12:00 **Exhibits/Coffee Break** Grainger Auditorium

12:00 - 1:00 **Session II** Phelps Science Center

BEFORE GOING TO LUNCH PLEASE CHECK THE LOBBY AREA FOR ANY DOOR PRIZES YOU MAY HAVE WON. All prizes will be placed on tables in the lobby area and need to be checked by an NHSTA representative before taking. Name tag must be shown to receive prize.

1:15-2:15 **Luncheon** Elm Street Dining Halls

Workshops (Full Descriptions are available on-line at www.nhsta.net)

SESSION I, 10:30-11:30

- 1. Exploring the Heavens with Computer Simulations, Room: 127, Content: ES/P/T; Format: H; Grade: H; Presenter:** Andrew DiGiovanni, Bedford High School.
- 2. The World Record Wind: A NH Event that Made Weather History, Room: 202; Content: ES/EV Format: L; Grade: M; Presenter:** Peter Crane, American Meteorological Society.
- 3. Reading about Wildlife: Improving Reading Skills in the Content Area, Room: 203; Grade: E/M; Content: LIT/ES/L; Format: H. Presenter:** Judy Silverberg, NH Fish and Game Dept., **Co-Presenter:** Susan Cox.
- 4. What Color does Red Light and Green Light Make, and do Plants Care? Room: 206. Grade: M/H; Content: T/P/EV; Format: DE, Presenter:** Rita Freuder, Measuring Vegetation Health - UNH.
- 5. Authentic Science Tools in the K-8 Setting, Room: 207. Content: LIT/ES/L/EV/P Format: H/DE Grade: E/M; Presenter:** Betsy Stefany, The SABENS Group.
- 6. The Chemical Formula, Room: 214. Content: L/P/EV/T; Format: H/DI; Grade: H. Presenter:** Deborah Carlisle; Lab Aids.
- 7. Magnetism & Electricity, Room: 215. Content: P; Format: H; Grade: E. Presenter:** Kathy Brown, Delta Education Consultant.
- 8. Past AP Chemistry Exams Help the Future, Room: 216. Content: P; Format: L/DI; Grade: H; Presenter:** Harvey Gendreau, Laboratory Safety Institute.
- 9. Comprehensive Shoreland Protection Act, Room: 218. Content: L/ES/EV/T; Format: L/H; Grade: M/H; Presenter:** Jay Aube, NH Dept of Envl Services, Wetlands Bureau.
- 10. “Simply” the Best Demos, Room: 219. Content: P; Format: DE; Grade: M/H. Presenter:** Bette Bridges, Bridgewater-Raynham Regional HS (ret.).
- 11. Place-Based Education: Connecting Classrooms and Communities , Room: 302. Content: L/P/ES/EV/A; Format: DI/L; Grade: A. Presenter:** David Sobel, Antioch University New England.
- 12. Educating for Sustainability across the Science Curriculum, Room: 303. Content: L/P/ES/EV/T; Format: DI/L; Grade: A. Presenter:** Susan Gentile, Antioch University New England.
- 13. Invisible Energies and You, Room: 305. Content: L/ES/P/EV; Format: DE/H/L; Grade: A. Presenter:** Jeffrey Bergeron,

Embers of Wellness/Nikken.

14. **Student-Designed Inquiry in a Life Science Classroom, Room: 306. Content: L; Format: DI/H; Grade: M; Presenter:** Sue Sherman, Timberlane Regional Middle School, **Co-Presenters:** Terri Costa & Erica DiRenzo.
15. **Transforming Recipe-Based Labs into Real Engaging Problem Solving Lessons, Room: 307. Grade: M/H; Content: L/P/ EV; Format: DE/H/L. Presenter:** Jimmy Karlan, Antioch University New England.
16. **Understanding Lightning & Lightning Safety** (offered both sessions), **Room: 314. Content: ES/P; Format: DE/L; Grade: A. Presenter:** John Jensenius National Weather Service,, NOAA.
17. **Blending eLearning, Classroom Instruction, and Open Courseware for Student-Centric, Standards-Aligned, Collaborative Learning, Room: 318. Grade: A; Content: L/ES/P/EV/A/T; Format: DE/L. Presenter:** Mark Luetzelschwab, PhD., Agilix.
18. **What are they Thinking? Uncovering Students' Ideas with Formative Assessment Classroom Techniques, Room: 319. Grade: A; Content: L/ES/P/EV/A/LIT; Format: DI/H. Presenter:** Joyce TugelMaine Mathematics and Science Alliance. .
19. **NH Envirothon: Preparing NH's Future Environmental Decision Makers, Room: 304. Grade: H; Content: ES/P/EV/L; Format: DE/DI/L. Presenter:** Jan Hooper, NH Envirothon, Steering Com Chair.
20. **NASA in the Classroom, Room: 315. Content: ES/P/EV/L/T; Format: L; Grade: A. Presenter:** Thomas Estill, NASA.
21. **NECAP Science Assessment - data, details, and dilemmas, Room: TBD. Content: A; Format: DI; Grade: E/M. Presenter:** Jan McLaughlin NH Dept of Education.

Session II, 12:00-1:00

22. **Weather on the Web: Resources for Teachers and Students, Room: 202. Content: ES/P/T; Format: DI/DE ; Grade: M/H. Presenter:** Marsha Rich, American Meteorological Society.
23. **Exploring Complex Environmental Issues with Students, Room: 203. Content: L/ES/EV/T/A/LIT; Format: DI/H/DE; Grade: M/H. Presenter:** Erin Hollingsworth, NH Project Learning Tree, **Co-Presenter:** Susan Cox.
24. **Earth Exploration Toolkit: Sample Chapter Seafloor Topography using freeware GeoMapApp and High Quality Bathymetry Datasets, Room: 206. Grade: M/H; Content: ES/P/EV/T; Format: DI/DE/H. Presenter:** Rita Freuder, Earth Exploration Toolkit.
25. **How to Use NOAA's Interactive GIS Web Mapping Portal to Real-Time Weather, Ocean, & River Observations and Forecasts, Room: 127. Grade: M/H; Content: ES; Format: H. Presenter:** John G.W. Kelley, NOAA/National Ocean Service, **Co-Presenter:** Micah Wengren.
26. **Teach about Trees, Please, Room: 207. Content: EV; Format: L; Grade: E/M. Presenter:** Jonathan Nute, Educator in Forest Resources.
27. **Electrochemical Cells and the Battery, Room: 214. Content: L/P/EV/T; Format: DI/H; Grade: H. Presenter:** Deborah Carlisle, Lab Aids.
28. **Chemical Interactions for Middle School Learners, Room: 215. Content: P; Format: H; Grade: M/H. Presenter:** Kathy Brown, Delta Education Consultant.
29. **Stoichiometry the D2UM2 Way, Room: 216. Content: P; Format: DI/L; Grade: H. Presenter:** Harvey Gendreau, Laboratory Safety Institute.
30. **Aquarium Projects in the Classroom, Room: 218. Content: L/EV; Format: DE/L; Grade: M/H. Presenter:** John Croteau, Winnacunnet High School, **Co-Presenters:** Mike Handwork & Shani Scarponi.
31. **Water Guardians, Room: 302. Content: L/EV/ES/P; Format: DE/L; Grade: A. Presenter:** Bruce Montville LifeWise Community Projects, Inc., **Co-Presenter:** Skip Webb.
32. **WGBH, Room: 303. Content: L/ES/P/EV/T; Format: DE; Grade: A. Presenter:** Daniella Quiones, WGBH Teachers' Domain.
33. **High Performance "Green" Schools – Supplementing your Curriculum, Improving Learning and Productivity, Saving Money, Preparing for the Future, Room: 305. Grade: A; Content: P/EV/T; Format: DI/L. Presenter:** Kirk Stone, The Jordan Institute.
34. **What's It Gonna Take to Get 'Em to Read? Room: 306. Content: LIT; Format: DI; Grade: M. Presenter:** Donna Ciocca, NHREADS, PSU, SNHU.
35. **Making Connections: Surface Area and It's Influence on the Structure of Life, Room: 307. Grade: M/H; Content: L; Format: DI/L. Presenter:** Paul Marshall.

Continued on next page

36. **Understanding Lightning & Lightning Safety** (both sessions), **Room:** 314. **Content:** ES/P; **Format:** DE/L; **Grade:** A. **Presenter:** John Jensenius, National Weather Service, NOAA.
37. **Integrated Landscaping: Following Nature's Lead**, **Room:** 315. **Content:** L/P; **Format:** DI/L; **Grade:** A. **Presenter:** Marilyn Wyzga, NH Fish & Game.
38. **Get "SPARKed" by 21st Century Education Technology**, **Room:** 318. **Content:** L/P/ES/EV/T; **Format:** DE; **Grade:** A. **Presenter:** Lara Sharp, PASCO Scientific.
39. **Science4All, A NH MSP Project – Universal Design for Learning in the Science Classroom**, **Room:** 319. **Grade:** A; **Content:** L/P/ES/EV/T/A/LIT; **Format:** DE/L. **Presenter:** Kathleen McClaskey, Pres EdTech Associates & Project Dir of Science4All Project.
40. **Preparing Tomorrow's Ecologists Today: "Reading the Landscape" using the ABCs of Ecology**, **Room:** 219. **Grade:** A; **Content:** L/ES/EV; **Format:** H. **Presenter:** Meg Edstrom, Ferry Beach Ecology School. "
41. **The Five Senses - What is it like when one or more of your senses are impaired?** **Room:** 304. **Grade:** E/M; **Content:** L; **Format:** H. **Presenter:** Susan Perry, Keene Middle School, **Co-Presenter:** Dan Heath.
42. **NECAP Science Assessment - data, details, and dilemmas**, **Room:** TBD. **Content:** A; **Format:** DI; **Grade:** M/H. **Presenter:** Jan McLaughlin NH Dept of Education.

EXHIBITORS (at time of publishing)

Mount Washington Observatory: The Mount Washington Observatory is a private, non-profit organization which has maintained a weather station and scientific research facility atop Mount Washington since 1932. The mountain is known for its remarkably harsh weather, but also serves as a unique natural classroom. The Observatory is active in educational activities relating to weather and the mountain environment, including classroom programs, summit immersion experiences, two museums, and Distance Learning opportunities. For more information, visit www.mountwashington.org, or e mail mcruz@mountwashington.org

Lab-Aids, Inc: Over 150 Single-concept hands-on kits for class groups or individual student use. Exclusive provider of SEPUP modules and full-year courses: Issues and Earth Science, Issues and Life Science and Issues and Physical Science and Science and Sustainability. www.lab-aids.com

Heinemann Publishers Dedicated to Teachers www.heinemann.com dustine.leigh@heinemann.com

Carolina Curriculum: At Carolina Biological Supply Company, we are committed to finding and developing superior resources for science and math classrooms. As your partner in education, we want to provide innovative, results-driven curriculum resources that meet assessment standards and more importantly, help you and your students succeed. For this reason, Carolina works with leading providers of inquiry-based curriculums and its own product development staff to bring you the best educational programs available. Please visit us on the web at www.carolinacurriculum.com. For more information, please contact our Curriculum Sales Specialist, Katie Arace at 860-685-5242 or email; katie.arace@carolina.com

EMC Publishing: See EMC Publishing for comprehensive textbook programs for Biotechnology (teaches concepts and hands-on lab procedures required for entry-level careers) and Applied Anatomy and Physiology (emphasizes real-world applications with a case study approach).

PASCO Scientific: PASCO scientific--Enabling 21st Century Science Education Prepare your students for the future: 21st Century science education requires 21st Century science methods and tools. PASCO scientific empowers teachers to deliver authentic 21st Century science experiences by combining standards-based content and relevant teacher professional development with innovations in modern, electronic measurement. www.pasco.com

Key Curriculum Press: Living By Chemistry is a standards-based, comprehensive chemistry curriculum for all students. Engineering the Future is a one-year course that provides an excellent introduction to engineering. Key Curriculum Press 1150 65th Street Emeryville, CA 94608 Tel: 1-800-995-MATH Fax: 1-800-595-7040 www.keypress.com

Delta Education: Delta Education is the publisher & producer of K-8 science curriculum, including FOSS (Full Option Science System) & DSM (Delta Science Modules) as well as Seeds of Science/Roots of Reading.

Ferry Beach Ecology School: Since 1998, Ferry Beach Ecology School (FBES) has brought innovative ecology education programs to thousands of children and adults throughout New England. In everything we do — week-long programs on our coastal campus, outreach and day programs at schools, publishing curriculums and field guides, summer camps and programs — we accentuate the magic, mystery and wonder of nature so that students can better understand and care for the environment.

K8Resources: K8resources carries ten transparency sets with rich, full-color photographs for each science discipline. K8resources also offers \$2.00 learning kits--each with an information sheet, an application unit, and 40 flashcards. For samples, go to www.k8resources.com Mike@k8resources.com

NH Project Learning Tree: New Hampshire Project Learning Tree offers professional development opportunities for educators

and others interested in teaching our youth about the environment using our forests as a window into the natural world. New Hampshire Project Learning Tree's mission is to enhance youth understanding, appreciation, and love for the natural world and to encourage our students to become tomorrow's stewards of our forests and other natural resources. NHPLT offers one-day workshops and a variety of sustained professional development programs to train teachers in the award winning Project Learning Tree curriculum and model the integration of environmental education across the curriculum. Project Learning Tree activities have been rigorously evaluated and are correlated to state standards. Information on PLT workshops and other programs will be available. info@nhplt.org www.nhplt.org

New Hampshire Public Television: The NHPTV Knowledge Network provides no to low cost professional development and classroom resources for the science teacher. www.nhptv.org/kn; sadams@nhptv.org

Glencoe Macmillan/McGraw-Hill: Curriculum, Software and Textbooks

NH Project Wet: Project WET (Water Education for Teachers) is a series of water-based environmental education curricula that are available to educators through workshops. Project WET is interdisciplinary and incorporates a variety of teaching and assessment methods. The curricula promote critical thinking and problem-solving skills.

CPO Science: CPO Science provides Teaching and Learning systems, Hands-on equipment and Supplemental Curriculum for grades 8-12. CPO Science has the only inquiry-based hands on science programs that include a student textbook, teachers guide, student investigation manual and FREE high quality equipment.

Usborne Books at Home: Usborne Books are award-winning, educational books for children of all ages and all learning abilities. Their unique features make learning fun. The Usborne website holds volumes of information for children and adults alike to delve into a given subject. The sites are updated and new information is posted constantly. There are over 1400 titles available, which you may view online at: www.ubah.com/D1435 Usborne Books at Home offers various programs: Read-a-thons, Book Fairs and a Matching Grant/Donation program to help schools and to promote literacy. Please contact Bernadette Randle - Educational Consultant with Usborne Books at Home for further information: brandl_ubah@hotmail.com

Antioch University New England: Antioch University New England (formerly Antioch New England Graduate School) is a dynamic, innovative institution offering scholarly, practice-oriented, values-based graduate study with education programs including MEds in Educating for Sustainability, Professional Development and a post-Masters Principals Certification program. Antioch New England serves 1,200 students and remains, by design, a small graduate school closely linked to the region, with national and global connections through its students, alumni, and institutional concerns. Our alumni, over 8,000 in number, constitute a strong network in leadership positions throughout New England, the United States, and the world. At Antioch New England, the Antioch legacy of high academic standards, integration of work and study, commitment to bypassed populations, and learner responsibility are intertwined with the New England traditions of self-reliance, small-community values, private action for the public good, respect for learning, and the development of the intellect.

UNH Marine Docent Program: The UNH Marine Docent Programs utilizes well-trained volunteers to deliver marine education programs to preK - 12 and adult audiences.

ANNOUNCEMENTS

Registration, exhibits, and workshops will be held in the Phelps Science Center Building, located on Tan Lane.

DIRECTIONS: From the west: take Rte. 101E to Exit 9 (Rte. 27 Exeter). Turn right at the end of the ramp (following signs for the Independence Museum). Travel 1.9 miles to a double yellow blinking light and take a right onto Tan Lane. The Science Building is the first building on the right. See parking instructions below. **From the east:** take Rte. 101W to Exit 11 (Rte. 108). Turn left at the end of the ramp onto Rte. 108S (Portsmouth Ave.). Travel 1.2 miles to the 4th light and take a right onto Rte. 108S/Rte. 111W (Water St.). Continue another 0.5 miles on Water Street straight through downtown Exeter to the second double yellow blinking light. Take a left onto Tan Lane. The Science building is on the right. See parking instructions below.

Parking Instructions: Participants are encouraged to park in the lot behind the boiler plant. If you choose to park on town streets, be sure to observe town-parking regulations. To reach the parking lot at the boiler plant, continue on Tan Lane to the end. Turn right onto Front Street, and then take an immediate left onto Elliot Street. Go to the end of Elliot Street and turn left onto Court Street. Turn right onto Gilman Street (tennis courts will be on your left and the athletic facility/boiler plant will be on your right). There is parking along the building or you can drive all the way around to the back of the building (to the right) to the large parking area. Follow the NHSTA Workshop signs across campus to the Science Building. An area in front of the Science Building is reserved for drop-off and pick-up of materials ONLY.

Our special thanks go to this year's exhibitors. Their fees help keep our registration costs down. We urge you to take the time to see what's new in science texts, programs, and equipment. Stop by and chat with the various representatives. In addition, the Officers and Directors of NHSTA wish to thank the Head Master, Science Staff, Food Service Administration and Workers, and Custodians of the Phillips Exeter Academy for their generous hospitality and contributions to this conference.

NHSTA is not responsible for cancellations by speakers.

Certificates of attendance will be distributed. If you need verification of hours earned in specific areas, ask the presenters to endorse your certificate.

Check this web site for updates on the conference: www.NHSTA.net

The snow date is Wednesday, March 25, 2009. Notice of postponement will be broadcast over radio stations: WKXL, Concord; WZID, Manchester; WLNH, Laconia; WHEB, Portsmouth; WMOU, Berlin; WKBK, Keene; WTSL, Lebanon; WZPK, Mt. Washington; WEVO, Concord, as well as on www.nhsta.net

**You can now register on-line and pay with a credit card through paypal!
Go to www.nhsta.net for details. Click on Spring Conference.**

**NHSTA Spring Conference Registration Form
Phillips Exeter Academy, Exeter NH
March 24, 2009**

Name(s): _____
 E-mail: _____
 Telephone: _____
Home Address: Street: _____ City: _____ State: _____ Zip: _____
 School: _____
Work Address: Street: _____ City: _____ State: _____ Zip: _____

	Registration Type	Price	# of Per-	Subtotal
Early Bird Registration (postmarked before 2/27/09)	MEMBER	\$75		
	NON-MEMBER	\$100		
Regular Registration (postmarked 2/28/09-	MEMBER	\$100		
	NON-MEMBER	\$125		
NOTE: onsite registration will be \$150.00		TOTAL ENCLOSED:		

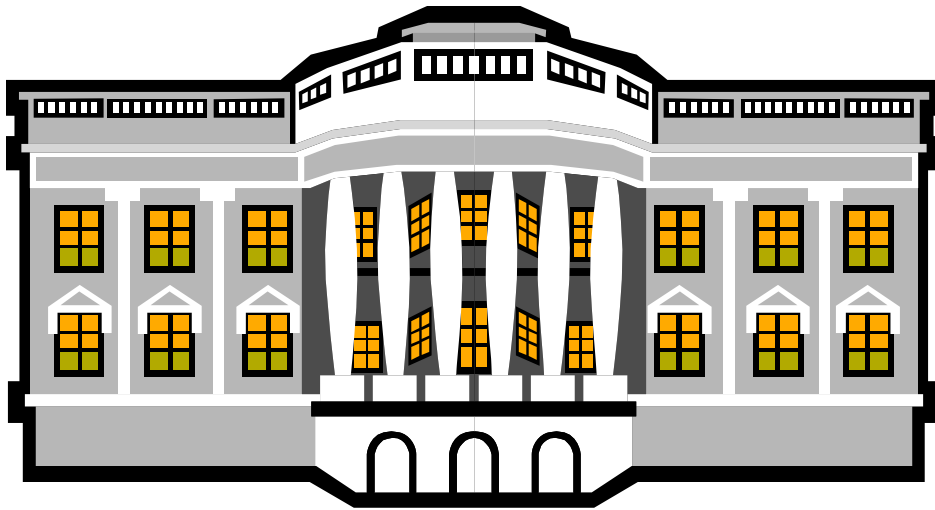
Make checks and PO's payable to NHSTA (If your school pays with a purchase order, it would be helpful to bring a copy of it)

<p><u>Mail registration form and money to:</u> Amy Rockwell 129 Constant St Manchester, NH 03103</p>	<p>E-mail: nhsta@together.net Phone: Paul Williams at 659-2622 Check out www.nhsta.net for latest conference updates.</p>
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Jan McLaughlin, 271-3856, jmclaughlin@ed.state.nh.us

or

Gail Taylor, 271-8266, Gail.J.Taylor@ed.state.nh.us

Science *Fiction* That Stimulates Interest in Science *Fact*. By Douglas E. Richards

I have a Master's degree in molecular biology and write science pieces for *National Geographic KIDS* magazine. As a kid, I read nothing but science fiction, much of it by actual scientists striving to get the science correct, and I know firsthand the power of this genre to stoke interest in science. So I decided to write a children's science fiction series of my own to do just that. The books would be thrillers so kids would stay glued to the page, and they would contain scrupulously accurate science. They would be set in a vast, abandoned alien city, buried deep underground, where multidisciplinary teams of Earth's greatest scientists would study the amazing technology found within, allowing me to explore endless scientific topics.

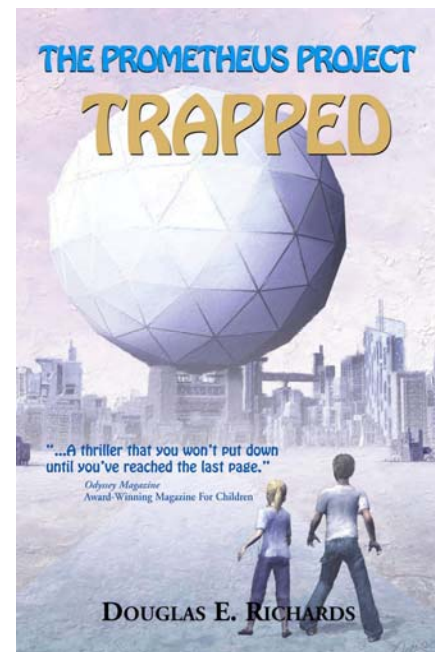
In the first book in the series, *The Prometheus Project* — *Trapped*, the protagonists (a brother/sister pair named after my own two children) stumble upon the alien city and then get cut off from the scientist team, leaving them trapped inside and facing unimaginable dangers. The kids soon realize that they need to use the scientific method to understand the dangers they face and to find a way to save their mother's life. I introduced "cool science" into the book wherever I could as long as it served the story. I also raised broad topics I hoped would stimulate children's imaginations. For example, I had the characters discuss the following question: what would people from hundreds of years ago make of today's world? Of our televisions, airplanes, and cell phones? They would almost certainly think our technology was magic. So wouldn't science and technology well in advance of ours seem like magic to *us*? And along with great benefits, couldn't the study of this science lead to unexpected dangers? (like a caveman sticking his finger into an innocent light socket).

The reaction to *Trapped* has surpassed my wildest expectations. The book can now be found on a number of classroom reading lists. Numerous teachers have also used *Trapped* as a read aloud and report it serves as an excellent discussion starter in their classrooms. "My class loved it," said a fifth-grade teacher who was quoted by the *San Diego Union-Tribune*. "They were totally engaged. It's a hard book to put down." *Trapped* has been called, "Perfect for middle grades," by *Teaching Pre K-8 Magazine*, has been endorsed by

the California Department of Education, and is included on Missouri State University's list of "Best New Books to Engage Students in Math and Science." Both *Trapped* and *Captured* (the second book in the series) have been endorsed by the California Science Teachers Association and the American Association for the Advancement of Science.

So how do these books teach science? The answer is that they don't. Only science teachers can do that. But they *can* inspire imaginations and reinforce what kids are learning in your classrooms. So I encourage you to read these books and decide for yourself if they're worthwhile. If you believe they are, please help spread the word. And if you or other teachers you know assign *Trapped* or use it as a read aloud, feel free to contact me at doug@san.rr.com. I'd be more than happy to phone your class and answer questions about the books and *NG KIDS*. I've done this on several occasions outside of San Diego via speakerphone and I believe the kids have enjoyed it.

To learn more about the author and his books (including full reviews) go to www.douglaserichards.com. *Trapped* and *Captured* are available through Barnes&Noble, Amazon.com, and to schools through Ingram and Baker & Taylor. ☀



The 2009 Northern New England Regional Middle School Science Bowl, by Nancy Pejouhy, regional coordinator

The 2009 Northern New England Regional Middle School Science Bowl will be held on Saturday, March 7, 2009 at Thayer School of Engineering, Dartmouth College. This will include a fast-paced question/answer competition and a hydrogen fuel cell car race. For more information visit

<http://www.scied.science.doe.gov/nsb> or contact Nancy Pejouhy, regional coordinator at nancypj2@aol.com. ☀



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 macruz@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. ☀

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

Online Teacher Training for Chemistry Teachers from Flinn Scientific — Coming Soon!
Announcing Flinn Scientific's new eLearning Video Series developed to help chemistry teachers build their chemistry teaching skills!

In early spring of 2009, Flinn Scientific will introduce a new, low-cost “Teaching Chemistry—eLearning Video Series” to help chemistry teachers build their content knowledge and teaching strategies—making it easier for their students to learn and understand chemistry. 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.

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 400 learning episodes will be 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:

1. **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.
2. **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 to you 24/7—all you need is a high-speed Internet connection!
3. **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 mastery, knowledge and confidence.
4. **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!

You won't want to miss this tremendously educational, low-cost eLearning video series when it is released early next year. Stay on the alert for more information—it's coming to the Flinn Web site . . . *SOON!*

A Demo A Day™ — A Year of Physics Demonstrations

A new book in the popular *A Demo A Day* series contains nearly 200 teacher-friendly demonstrations specifically designed to excite and motivate your students and “turn them on” to Physics.

Like the other five books in the *A Demo A Day* series, all activities are outlined in an easy-to-understand, concise format. Each demonstration write-up includes applications, theoretical basis, materials, safety precautions, and demonstration directions.

Topics include: Measurement, Circular and Rotational Motion, Magnetism, Force and Motion, Fluids, Waves and Sound, Light and Optics, Work, Energy, and Power, Atomic and Nuclear Physics, Thermodynamics, Momentum, Electrical Forces and Fields, And much more . . .

A Demo A Day – A Year of Physics Demonstrations (catalog number AP7305) is available from Flinn Scientific for \$39.95. The entire *A Demo A Day* series is available for \$39.95 per edition as follows: AP8852 Chemistry Vol. I; FB1551 Biology, AP7305 Physics; AP4572 Chemistry Vol. II; AP5944 Earth Science; AP9305 Physical Science

Flinn eLearning Video Series, for Chemistry Teachers

Available Now from Flinn Scientific, **Flinn eLearning Video Series Covering, Oxidation and Reduction**

Three unique video packages offering training for chemistry teachers regarding imaginative ways to teach oxidation and reduction are now available through the Flinn eLearning Web site. These videos help teachers explain that while oxidation states may be “imaginary charges” for electron bookkeeping, they help provide a “real” way to identify the changes taking place in redox reactions. One video package, *Oxidation States*, discusses oxidation states and includes four colorful demonstrations. A second, *Activity Series of Metals*, addresses the activity of metals and compares the ease of oxidation and relative reactivity of different metals. The third, *Copper, Silver and Gold Redox Reactions*, produces some elegant reactions with beautiful results.

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.

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

Flinn Scientific Introduces the New Flinn Dissection Photo Guides

Flinn Scientific has developed three new sets of brightly colored photo guides to be used by middle school and high school students during dissection labs. Created from photographs taken during actual dissections, these versatile guides are tremendously helpful in the study of anatomy and zoology. Prominent anatomical features and organs are labeled to help students locate these features on their own specimens. The guides may also be used as a review tool for lab practicals or other assessments.

The Flinn Dissection Photo Guides provide an accurate resource to guide inquiry-based group learning and are guaranteed to help students identify and recognize similarities and differences among diverse phyla within the kingdom Animalia. All Dissection Photo Guides contain five laminated sheets per package for only \$19.95 and are available for Crayfish (FB1920), Earthworm (FB1917), and Squid (FB1915). For more information, visit the Flinn Scientific online store at www.flinnsci.com ☀

Canada’s Perimeter Institute is now accepting applications for free summer science camps for students and teachers with a keen interest in modern physics (all expenses paid within Canada).

Please note that: For your students - the application deadline for the “International Summer School for Young Physicists” is **Thursday, March 19, 2009**. For your teachers - the application deadline for the “Einstein Plus Teachers’ Workshop” is **Tuesday, March 31, 2009**. *Canada’s Perimeter Institute for Theoretical Physics (PI), is now accepting applications for their free summer science camps for students and teachers with a keen interest in modern physics. All expenses are paid within Canada. For detailed information regarding these camps please visit www.issyp.ca and www.einsteinplus.ca. **What past teachers to Einstein Plus say about their experience at Perimeter:** “Lots of sharing, new ideas, new strategies, stretching of the mind... I am very excited about this coming year in my classroom.” “This has been an amazing, memorable, and motivating experience. I would highly recommend it. This has exceeded my expectations.” “Very intellectually stimulating program, good for both getting me informed and excited about modern physics, but also giving me ideas of how to bring this into the classroom. A fantastic opportunity.” **What past students to ISSYP say about their experience at Perimeter:** “I attended ISSYP three years ago and now my summer job is cosmology research! I give credit to this program for giving me the self-confidence to believe I could become a physicist and putting me on the path I am on. It showed me that...there is no reason not to try.” “ISSYP was a great adventure for me. I met wonderful people in there; both students from around the world and researchers. It involved some heavily mind-stretching activities, but also gave a lot of valuable insight into actual working life of theoretical physicists. The experience of ISSYP gave me a lot of motivation, which still helps with studying and working for the University of Oxford.”* Additional information is available online at www.perimeterinstitute.ca. If you have any questions, please contact: Julie Taylor, jtaylor@perimeterinstitute.ca, (519) 569-7600 ext. 5011. We look forward to receiving applications from your school.

Best Regards, Perimeter Institute Outreach Team



SCIENCE SAFETY IN OUR SCHOOLS, “Managing Waste From Science Classrooms”

A guide for disposing of waste from science classrooms. Courtesy of Brian Wazlaw, Ed.D., Exeter Region Cooperative School District, NH.

WASTE DISPOSAL STANDARD

A. Rules and Regulations

Hazardous waste is defined as any solid, liquid, or gaseous material that poses an unreasonable risk to safety or health. The Exeter Region Cooperative School District shall ensure that the disposal of laboratory waste and chemicals is in compliance with:

1. the New Hampshire Department of Environmental Services, *Hazardous Waste Rules*.
2. the New Hampshire Department of Environmental Services, Env-Ws 1500 –*Groundwater Discharge*, for the disposal of laboratory chemicals and waste (septic system)
3. the New Hampshire Department of Environmental Services, Env-Ws 503.01 - *Small Quantity Generator* rules
4. the Town of Exeter Rules and Regulations for the drain disposal of any laboratory chemicals

B. Chemical Hygiene Plan

All schools within the ERCSD will comply with the Chemical Hygiene Plan:

Section 1 - Standard Operating Procedures

Section F – Waste Disposal and Waste Minimization (page 12)

C. Waste Minimization and Disposal

The Exeter Region Cooperative School District shall minimize the generation of waste by:

- a. Using microscale labs (when possible) and selecting less hazardous materials.
- b. Using “Just in Time” purchasing and ordering quantities that are likely to be consumed in one year or less.
- c. Avoiding the inadvertent accumulation of waste - surplus chemicals, old or seldom used chemicals, chemicals in excessive quantities, laboratory waste
- d. Determining if the material will need to be treated as hazardous waste by referring to the New Hampshire DES Hazardous Waste regulations.

Is the waste a listed hazardous waste? *refer to DES P and U lists; or *refer to DES F and K lists

Is the waste a characteristic waste?

*Ignitability: ...ignitability - flash point less than 140° F; ...ignitable compressed gas; ..oxidizer

* Corrosivity: ...aqueous with a pH greater than 2 or less than 12.5

* Reactivity: ...normally unstable; ...reacts violently with air; ...toxic vapors in contact with water or air; ...cyanide or sulfide bearing waste; ...capable of detonation

* Toxicity: ...simulates leaching activity of landfills; ...any of the contaminants listed in Env-Wm 403.06 (d)

- e. Separate waste containers shall be provided by the Laboratory Safety Officer for ionic compounds, flammables, non - aqueous solvents, biologicals (Benedicts, Biuret)
- f. Waste chemicals shall be stored in appropriately labeled containers, inside secondary containment.
- g. Hazardous wastes shall never be placed in any common solid trash container.
- h. All waste containers shall have an up-to-date log of the material that is in the container.
- i. Upon completion of the laboratory activity cycle, the waste containers shall be returned to the preparation room. Waste materials shall not be stored in the laboratory.
- j. When the waste containers become full, or 90 days after the container is first used, the containers shall be transferred to the designated waste storage area.
- k. Unlabeled containers apparently containing liquid and/or solid chemicals shall be treated as hazardous waste and disposed of using the procedures described above.

D. Removal of Hazardous Waste

- ...hazardous waste shall be removed from the schools by a licensed New Hampshire waste hauler
- ...waste not considered hazardous waste shall also be removed by a licensed New Hampshire waste hauler

Goldstone Apple Valley Radio Telescope Opportunity for Teachers! By Shannon McConnell, NASA

The Goldstone Apple Valley Radio Telescope (GAVRT) Program is a partnership involving NASA, the Jet Propulsion Laboratory (JPL), and the Lewis Center for Educational Research (LCER) in Apple Valley, California. This dynamic program uses radio astronomy to provide an opportunity for students to experience real science. Through the control of a real deep space radio antenna the students collect 'real' scientific data, which in turn are submitted to the scientific community.

We currently have trained 401 teachers at 229 schools in 37 states across the United States and at American schools in 14 countries and 3 U.S. territories. We have had over 28,000 students connect remotely to our Mission Control Center and operate a 34-meter, 500-ton radio telescope located at NASA's Deep Space Communication Complex at Goldstone, CA, via the Internet using their classroom computer.

Students actually take control of the massive dish via the Internet or direct dial-up connection to study a variety of radio sources in space. They collect and analyze data that goes into a database used by professional scientists worldwide. Much of the student data are published in professional journals, which demonstrates to students the importance of their data and contributes to

the "team building" goals of the GAVRT program.

The Purpose of the GAVRT Program is to provide students and educators with curriculum vehicles that will promote science literacy, support a better understanding of the scientific community, and to provide the opportunity to collect real-time data with sophisticated science equipment through distance learning.

Teachers interested in participating are invited to apply online at this time. We are conducting a 4-day teacher training class at the Lewis Center on February 2 – 5, August 17 – 20, and October 19 – 22, 2009 at our facility in Apple Valley, CA. Please check our website periodically for calendar updates. We strongly recommend at least two teachers attend the training from your school or area. While this is not a requirement, it will definitely serve to help in program support once back in the classroom. Our website has much more detailed information regarding the GAVRT program. The URL is: <http://www.lewiscenter.org/gavrt/>. If you would like a more local training, possibly to be held at Auburn University, we can discuss that too. Please do not hesitate to contact me at (760) 946-5414, extension 234. Thank you for your help in bringing the Universe to America's classroom.





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

Severe Space Weather, by Dr. Tony Phillips

Did you know a solar flare can make your toilet stop working? That's the surprising conclusion of a NASA-funded study by the National Academy of Sciences entitled *Severe Space Weather Events—Understanding Societal and Economic Impacts*. In the 132-page report, experts detailed what might happen to our modern, high-tech society in the event of a “super solar flare” followed by an extreme geomagnetic storm. They found that almost nothing is immune from space weather—not even the water in your bathroom.

The problem begins with the electric power grid. Ground currents induced during an extreme geomagnetic storm can melt the copper windings of huge, multi-ton transformers at the heart of power distribution systems. Because modern power grids are interconnected, a cascade of failures could sweep across the country, rapidly cutting power to tens or even hundreds of millions of people. According to the report, this loss of electricity would have a ripple effect with “water distribution affected within several hours; perishable foods and medications lost in 12-24 hours; loss of heating/air conditioning, sewage disposal, phone service, fuel re-supply and so on.”

“The concept of interdependency,” the report notes, “is evident in the unavailability of water due to long-term outage of electric power—and the inability to restart an electric generator without water on site.”

It takes a very strong geomagnetic storm to cause problems on this scale—the type of storm that comes along only every century or so. A point of reference is the “Carrington Event” of August-September 1859, named after British amateur astronomer Richard Carrington who witnessed the instigating solar flare with his unaided eye while he was projecting an image of the Sun on a white screen. Geomagnetic storms triggered by the flare electrified telegraph lines, shocking technicians and setting their telegraph papers on fire; Northern Lights spread as far south as Cuba and Hawaii; auroras over the Rocky Mountains were so bright, the glow woke campers who began preparing breakfast because they thought it was morning!

“A contemporary repetition of the Carrington Event would cause ... extensive social and economic disruptions,” the report warns. Widespread failures could include telecommunications, GPS navigation, banking and finance, and transportation. The total economic impact in the first year alone could reach \$2 trillion (some 20 times greater than the costs of Hurricane Katrina).

The report concluded with a call for infrastructure designed to better withstand geomagnetic disturbances and improvements in space weather forecasting. Indeed, no one knows when the next super solar storm will erupt. It could be 100 years away or just 100 days. It's something to think about ... the next time you flush.

One of the jobs of the Geostationary Operational Environmental Satellites

(GOES) and the Polar-orbiting Operational Environmental Satellites (POES) operated by NOAA is to keep an eye on space weather and provide early warning of solar events that could cause trouble for Earth.

You can keep an eye on space weather yourself at the National Weather Service's Space Weather Prediction Center, www.swpc.noaa.gov <<http://www.swpc.noaa.gov/>> . And for young people, space weather is explained and illustrated simply and clearly at the SciJinks Weather Laboratory, scijinks.gov/weather/howwhy/spaceweather. This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration. ☀

Check the label on this newsletter! It not only contains your preferred mailing address, but it also includes your membership renew date! Your dues purchase a one-year membership effective from your joining date. If you need to change anything, e-mail nhsta@together.net with the changes!

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

Vendor Honor List and... by Robert Schroeder

Where are you going to be on March 24 of this year? I hope you will join the New Hampshire Science Teachers' Association at Philips Exeter Academy in Exeter, N.H. This opportunity offers a fine time to be with professionals from every aspect of our profession. The occasion is hosted in a great setting and has a fine, down town restaurant quality, wonderful meal. And to the heart of it, we are sponsoring many, many excellent workshops that, whether in your specialty or not, can make one a better teacher. I get smarter here! But wait, there is more, many of the vendors on pages 15 and 16 were also at our last conference and had tables displaying current education materials (they are listed below). One table even had a living display. The Virginia Opossum, Bennett's Wallaby, and Giant Leaf-Tailed Gecko were hard to walk away from. Further this Honor List of vendors gave door prizes to our lunch time raffle. Some of our lucky participants actually left the conference with prizes worth much more than the cost of the conference. The better news here is, we will do this all again at this upcoming conference. This day is darn well worth writing sub plans for. I've always considered NHSTA conferences and membership an investment in my career. So please consider joining us for the conference and joining our organization as a member. Then, after registration, **take your budget and materials needs to the room with the vendors.** I guarantee you'll find what you need and more. It's worth a repeat; thank you for the door prizes.

The Parking Lot Guy (Robert Schroeder).

Wildlife Encounters Traveling Zoo, Derek Small, www.WildlifeEncountersZoo.com.

C.P.O Science, Mark Salisbury, Sales Consultant, msalisbury@cpo.com. **Delta Education**, Holly Choquette, Inside Sales Specialist, www.deltaeducation.com. **The New Hampshire Science and Engineering Exposition Association**, www.nhsee.net. **NSTA: National Science Teachers Association**, District II, karenfrew@earthlink.net. **McGraw Hill Glencoe**, Steven Ladd, Steven_Ladd@McGraw-Hill.com. **NH project Wet**, Alicia Carlson, alicia.carlson@des.nh.gov. **Student Conservation Association**, www.thesca.org. **Project Oceanology**, Lauren Rader, www.oceanology.org. **Whitcomb Associates, Inc.** Dave Sheridan – Regional Sales Manager, Dave_Sheridan@whitcomb-assocs.com. **New Hampshire Project Learning Tree**, Sara Head – Communications Specialist, info@nhplt.org, www.nhplt.org. **New Hampshire Public Television**, Heather E. Herod – Program Coordinator, hmason@nhptv.org, www.nhptv.org. **Usborne Books**, Susan Fry – Independent Consultant, www.UsborneBooks123.com. **The UNH Marine Docent Program**, Mark Wiley – Extension Specialist, Marine Science Ed. mark.wiley@unh.edu.

Holt McDougal, Paul Hamlen, paul_hamlen@hmco.com. **Ferry Beach Ecology School**, Meg K. Edstrom – Outreach Director, MEG@FBES.ORG, WWW.FBES.ORG. **PASCO Scientific**,

Lara Sharp - k-12 Ed. Consultant. NE Region, lsharp@pasco.com, www.pasco.com. **Sargent Welch-Science Kit-Wards**, Brian W. Kirsch – Regional Account Manager New England, brian_kirsch@vwreducation.com. **Christa McAuliffe Planetarium**, Mal Cameron – NASA ERC Coordinator Planetarium Educator, mcameron@starhop.com. **Pearson Prentice Hall**, Steve Higgins, merrill.beckett@pearson.com. **Amoskeag Fishways**, Helen Dalbeck, www.amoskeagfishways.org, hdalbeck@nhaudubon.org. **It's About Time**, Glenn Savoy – Sales Consultant, grsavoy@herffjones.com. **Squam Lakes Natural Science Center**, Amy Yeakel – Education Program Director, amy.yeakel@nhnature.org. **Montshire Museum of Science**,

Greg DeFrancis – Director of Education, www.montshire.org, **Chem Scientific, LLC**, Laboratory Apparatus And Supplies, www.chemscientific.com. **NH Fish and Game Department**, Judy Silverberg - Wildlife Education Programs Supervisor, judith.silverberg@wildlife.nh.gov. **Wilson Education Services, Inc.** Carol Wilson. **The Seacoast Science Center**. **Red Brick Learning**. **Mount Washington Observatory**. **Macmillan/McGraw-Hill & Glencoe/McGraw-Hill**. **K8resources** www.K8resources.com. **UNH – Joan and James Leitzel Center**. **Heinemann/Raintree Classroom**. **Cruise & Tour**. **Coastal Studies for Girls**. ☀

Wednesday, March 18, 2009, 4:00 PM – 6:30 PM
Exeter High School (Room G218), Exeter High School, Epping Rd., Exeter, NH

CHEMICAL MANAGEMENT WORKSHOP

For science teachers who work with any chemicals in grades 6-12

Proper chemical management is an essential component for promoting safer science classrooms. Important components of chemical management are creating an accurate chemical inventory, reducing the quantities of chemicals, eliminating certain chemicals, establishing chemical storage patterns, developing a chemical purchasing plan, and developing a chemical management plan. The workshop presenter is Brian Wazlaw, Laboratory Safety Officer, Exeter Region Cooperative School District.

“Managing Your Chemical Inventory”

- Assessing the current status of your chemicals
- Establishing safe procedures for conducting an inventory
- Developing an accurate chemical inventory
- Reducing the quantities of chemicals in storage
- Eliminating chemicals
- Organizing your chemicals for safe storage
- Accessing the chemical inventory
- Creating useful formats for reporting your inventory

* Registration with refreshments will begin at 3:45.

Certificates of attendance for 2 hours of staff development will be distributed.

- * All participants will visit the Exeter High School chemical storage bunker and will receive chemical inventory software.
- * Directions: Rte. 101 to Exit 9; Rte. 27 West, 1.8 mi.; EHS on rt. after United Meth Church

Registration Form: Chemical Management Workshop (please print)

Name _____

School _____

Home Address _____ Town _____

E-mail (PLEASE PRINT) _____ Home Phone _____

NHSTA Member: \$20.00 _____ Non-Member: \$40.00 _____

Registration Deadline: March 12, 2009

*Make checks payable to NHSTA and mail to: Brian Wazlaw, Laboratory Safety Officer,
Exeter High School, Epping Rd., Exeter, NH 03801.*

NHSTA will confirm registrations by e-mail only.

5-day Summer Research Camp for High School Biotechnology teachers and their students, July 20-24 2009 at the Seacoast School of Technology in Exeter, NH, by Linda Coe, Great Bay Community College

Great Bay Community College offers a free five day workshop for High School Science Teachers and their Students wishing to learn biotech-based laboratory skills and research procedures. The camp will run from 9 am - 4 pm Mon-Thurs with a short wrap-up session on Friday morning. The Camp carries a stipend for each teacher and for each student. The workshop will be offered at the newly renovated Seacoast School of Technology Biotechnology lab; a state of the art, fully equipped learning center. The camp will be a hands-on lab based activity filled week. The workshop will be an opportunity for teachers and students to work on a project of their choice with the guidance of laboratory profes-

sionals. This project may be one to assist in designing laboratory exercises for your classroom, to advance your student's science project or to simply give you and your student an opportunity to work with equipment and techniques that would otherwise not be available. If you do not have a project in mind we will be happy to work with you ahead of time to design one. Areas of interest might include:

- ◆ Protein or DNA purification and electrophoresis
- ◆ Restriction digestion and identification of DNA fragments
- ◆ Transformation and growth of bacterial cells
- ◆ Constructing cDNA libraries

◆ Expression and purification of cloned proteins in bacterial or yeast cells

◆ Mammalian cell culture

If you would like more information or have questions please contact BioConnectNH, Curriculum Developer, Linda Coe, Great Bay Community College, 320 Corporate Dr.

Portsmouth, NH 03801. phone: 603-559-1592

email: Lcoe@ccsnh.edu

Apply early— enrollment is limited

Deadline May 15, 2009



A Forest for Every Classroom, submitted by Sara Head, Communications Specialist, NHPLT

A Forest for Every Classroom (FFEC) is a year-long professional development series for middle and high school educators, aimed at providing the inspiration, knowledge and skills required to transform classroom teaching into effective and exciting place-based education. Teachers who participate in FFEC develop (or modify) their own curriculum unit to increase student literacy skills and foster student understanding of and

appreciation for the forested lands in their communities. These units integrate hands-on study of the natural and cultural resources of the local community, addressing concepts in ecology, sense of place, civics, and forest land management and stewardship. At the heart of the FFEC program is the belief that students who are immersed in the interdisciplinary study of their own place are more eager to learn and be involved in the

stewardship of their communities and public lands.

The next FFEC program will begin in May of 2009. Please visit <http://www.nhplt.org/FFEC.htm> for more information and to access the registration form. Space is limited for this transformative experience. The deadline to register is **Friday, March 13, 2009.**



The Great NHSTA Rock & Mineral Raffle takes place during the Spring Conference at Philips Exeter Academy on March 24th. By Steve Roberts


For those of you who plan a head and have been to NHSTA rock and mineral raffles before, here's the information you will need. The NHSTA rock raffles will be held during the conference in the exhibit hall from 8:00 AM to 12:00 PM.

For those of you who have never been to one of our rock raffles you must come and see what you have been missing. At Philips Exeter Academy we will position the raffle in the center of the exhibit hall and load the tables with rocks, fossils, minerals and other earth science materials. Next to each item there will be a description of the item and a raffle ticket bag. In the center of the tables will be extra special items that are part of the special \$1 raffle. For the vast ma-

majority of items, tickets are 5 for \$1. No matter how much or how little you know about rocks, fossils and minerals (even if you don't spend anything and just look) you will learn about the different items by just socializing and learning what other teachers do in their classrooms. Most of the items are organized in sets for classroom activities.

Money made from the Rock Raffle is used to fund other projects for teachers. If you were wondering where the samples for the rock raffle come from they are mainly donated from members, individuals and organizations that have an interest in Earth Science and education. Anyone that would like to donate or knows of an individual

or organization that would like to donate specimens or earth science materials to the Raffle may do so by bringing them to the raffle area early on Tuesday the day of the conference or by contacting Steve Roberts at **sroberts@metrocast.net** (we will organize away to get the materials).

At the end of the last workshop session the rock hounds will have drawn the winning tickets and placed them on the item. At the end of the last workshop session and before heading over to lunch drop by the rock tables to see if you are the winner of the beautiful cut geode or the fossilized dinner plates. Hope to see you at the conference, Steve Roberts Secretary NHSTA 

NHSTA President's Message, continued from Page 1

6) Overhaul of the Constitution. The constitution was rewritten, keeping the original intent, to adhere to the statutes regulating non-profit organizations. Thus, it is now called the Articles of Agreement and Bylaws. This chore was the most ambitious because of the amount of time it took to reshape it. The initial document was written many years ago and did not conform to the present NH state rules. Using a template provided by the lawyer for non-profits, the policy committee inserted as much original text as possible. The lawyer reviewed it and will be submitting it to the Department of Justice

for approval. The membership will have an opportunity to comment on the new Articles (they follow on pages 28-32). Please review them! You are welcome to send me an email at **lavalley.lisa@yahoo.com** or speak to one of the NHSTA board members at the spring conference if you have any comments, concerns or questions.

7) Review of our Insurance Policies. The lawyer spoke with our insurance agent to discuss NHSTA's insurance needs and indemnification, and determined that our present policy is adequate for the size of our organization and

fits within the parameters of the new Articles and state regulations.

The goal of NHSTA is to make the association one that any educator can join and feel comfortable performing its duties. What the policy committee has been trying to do is organize all aspects of the organization so that the mission of NHSTA can be carried out easily, clearly, and legally by whoever is part of this wonderful group.

See you at the spring conference!

Lisa Lavalley

President NHSTA 

STATE OF NEW HAMPSHIRE
ARTICLES OF AGREEMENT OF
NEW HAMPSHIRE SCIENCE TEACHERS' ASSOCIATION, INC.
A NEW HAMPSHIRE NON-PROFIT CORPORATION

THE UNDERSIGNED, BEING ALL PERSONS OF LAWFUL AGE, ASSOCIATE UNDER THE PROVISIONS OF THE NEW HAMPSHIRE REVISED STATUTES, ANNOTATED, CHAPTER 292 BY THE FOLLOWING:

ARTICLE I: NAME

The name of the corporation shall be: *New Hampshire Science Teachers' Association, Inc.* (hereinafter "NHSTA").

ARTICLE II: PURPOSE

NHSTA is organized exclusively for any purposes for which an organization may be exempt from federal taxation under Section 501(c)(3) of the Code including for such purposes the making of distributions to organizations that qualify as exempt organizations under Section 501(c)(3) of the Code, or corresponding section of any future federal tax code.

The specific purpose for which NHSTA is organized is to improve and coordinate science education at all levels of instruction and to engage in any and all activities in furtherance thereof; and to promote the advancement of education in any manner to assist such improvement and coordination of science teaching.

ARTICLE III: PLACE OF BUSINESS

The address at which NHSTA is to be carried on is: 3 North Spring St, Suite 100, Concord NH 03301

ARTICLE IV: BOARD OF DIRECTORS

The affairs of NHSTA shall be managed by the Board of Directors, the initial members of which shall consist of the five (5) incorporators and such other persons as may be chosen by them, all in accordance with NHSTA's Bylaws and in a manner not inconsistent with these Articles of Agreement, the Code and with the provisions of RSA 292, as amended.

ARTICLE V: MEMBERSHIP

NHSTA shall be open for membership to any individual or organization interested in science education.

ARTICLE VI: CAPITAL STOCK

There shall be no capital stock in the organization.

ARTICLE VII: DISSOLUTION

In the event of termination or dissolution of NHSTA, the Board of Directors shall distribute the remaining assets to any agency or organization which is interested in science education in New Hampshire and is exempt from taxation under Section 501 (c)(3) of the Internal Revenue Code of 1986, or its then-effective equivalent.

ARTICLE VIII: LIABILITY OF TRUSTEES OR OFFICERS

The Directors and Officers of NHSTA shall not be personally liable for any debt, liability or obligation of NHSTA. To the fullest extent now or hereafter permitted by law, no Director or Officer shall be personally liable to NHSTA or to its shareholders for monetary damages for breach of their fiduciary duties as an officer. NHSTA limits its Officers' and Directors' liability to NHSTA so long as those Officers and Directors do not breach their duty of loyalty, act in bad faith, intentionally violate the law, or derive improper personal benefits from the activities of the corporation. This Article shall be deemed to reflect the liability disclaimers afforded by NH RSA 292:2 or any successor law.

ARTICLE IX: GENERAL PROVISIONS

1. No part of the net earnings of NHSTA shall inure to the benefit of, or be distributable to its members, trustees, Officers, or other private persons, except that NHSTA shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in Article II hereof.
2. No substantial part of the activities of NHSTA shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and NHSTA shall not participate in, or intervene in (including the publishing or distribution of statements) any political campaign on behalf of any candidate for public office.

3. Notwithstanding any other provision of these Articles, NHSTA shall not carry on any other activities not permitted to be carried on (a) by a corporation exempt from federal income tax under section 501(c)(3) of the Code, or corresponding section of any future federal tax code, or (b) by a corporation, contributions to which are deductible under section 170(c) (2) of the Code, or corresponding section of any future federal tax code.

ARTICLE X: AMENDMENTS

Section 1. A proposed amendment to the Articles of Agreement or to these Bylaws of NHSTA may originate in the Board of Directors or through a petition submitted to the Board of Directors, bearing the signatures of not less than five (5) NHSTA members.

Section 2. A proposed amendment, if approved by a two-thirds vote of the members of the Board of Directors of NHSTA in session at official meetings of the organization, shall be submitted to the membership of NHSTA for adoption or rejection.

Section 3. A proposed amendment to the Articles of Agreement or Bylaws of NHSTA shall be submitted to a vote by ballot. Notice of the proposed amendment, together with solicitation of ballots, shall be given by mail, electronically or through Association publications at least sixty (60) days prior to the tabulation of ballots. The proposed amendment shall be adopted upon receiving affirmative votes for at least two-thirds of the votes cast. An amendment to these Bylaws shall become effective upon its adoption or when specified in such amendment, whichever is later.

Section 4. The Board of Directors shall have the authority to make technical and non-substantive changes in the Articles of Agreement and the Bylaws without submitting such changes to a vote of the membership of the Association. The Statement of Operating Policies of the Association can be altered by a majority vote of the Board of Directors.

ARTICLE XI: INCORPORATORS

The signatures and post office addresses of each of the persons associating together to form NHSTA are set forth below:

Signature and Name Post Office Address: Lisa Lavalley, 50 Squirrel Drive, Auburn, NH 03032; Amy Rockwell, 129 Constant St., Manchester, NH 03103; Steve Roberts, 122 Windsong Place, Meredith, NH 03253; Janet Chamberlin, 20 Cold Spring Rd. Durham, NH 03824; Leslie McRobie, 18 Kelsey Rd., Lee, NH 03861

BY-LAWS OF

NEW HAMPSHIRE SCIENCE TEACHERS' ASSOCIATION, INC.

ARTICLE I NAME

The name of this corporation shall be The New Hampshire Science Teachers' Association, Inc.

(hereinafter "NHSTA"). It shall be a non-profit corporation organized pursuant to NH RSA Chapter 292.

ARTICLE II OFFICES

The principal office of NHSTA in the State of New Hampshire shall be located in Concord, New Hampshire. The corporation may have such other offices, either within or without the State of New Hampshire as the Board of Directors may designate or as the business of the corporation may from time to time require.

ARTICLE III MEETING OF INCORPORATORS

Section 1. There shall be a meeting of the Incorporators, upon filing the Articles of Agreement with the State of New Hampshire. The Incorporators shall act to appoint a Board of Directors.

Section 2. Notice of Meeting.

Written, printed or electronic notice stating the place, day and hour of the meeting and, in the case of special meeting, the purpose or purposes for which the meeting is called shall be delivered not less than five (5) nor more than thirty (30) days before the date of the meeting, either personally, electronically or by mail, by or at the direction of the President, or the Secretary, or the Officer or persons calling the meeting, to each incorporator.

ARTICLE IV MEMBERSHIP

Section 1. Individual, institutional, and other designated membership categories and the rates and qualifications for each shall be established by the Board of Directors.

Section 2. All individual members in good standing in any established category shall be eligible to vote and hold office. All non-individual memberships categories are ineligible to vote and hold office.

Section 3. The Board of Directors shall have the right to refuse membership to any individual for due cause or to suspend or to rescind membership of an individual or group for due cause.

Section 4. An Annual Membership Meeting shall be held each year. Notification of such meeting shall be made to the membership a minimum of four weeks prior to the meeting date. A quorum of the Board of Directors of the Association must be present in order to conduct business. All appropriate business of the Association, except nominations and election of Officers, may be conducted at the annual membership meeting. All actions and motions of the membership meeting, with the exception of changes in the Articles of Agreement, shall be considered advisory to the Board of Directors of the Association.

Section 5. All members in good standing are invited to attend all open meetings of the Board of Directors.

ARTICLE V BOARD OF DIRECTORS

Section 1. General

NHSTA shall be governed by a Board of Directors consisting of the elected Officers and at least seven Directors-at-Large, one of whom shall be the Immediate Past President. Directors-at-Large shall be appointed annually by the Officers at their first organizational meeting. Directors-at-Large shall be chosen to represent, to the extent possible, New Hampshire's geographic regions and the various educational levels and science disciplines found within the State. NHSTA's incorporators shall select the initial Board. When the term of any Director-at-Large is about to expire or if a Director-at-Large or Officer is unable to complete a term, the vacancy shall be filled by a majority vote of the Officers, not including the Officer being replaced.

Section 2. Control and Power

The Board shall have the exclusive control and power to manage the activities, property and affairs of NHSTA and shall determine the manner in which the funds of NHSTA, both principal and income, shall be applied within the limitations of the NHSTA's Articles of Agreement, these Bylaws, the Code and Chapter 292 of the New Hampshire Revised Statutes Annotated.

Section 3. Meetings

The annual meeting of the Board shall be held at such place and time as determined by the Board. Regular and special meetings of the Board, or any committee thereof, shall be called by the President or at the request of two-thirds (2/3) of the membership of the Board and shall be held at such time and place as may be set forth in the notice thereof, provided that at least five (5) days' advance notice (in writing or otherwise) of every meeting shall be given to each Director or member of a committee. Such notices shall be sent to the addresses shown on the records of NHSTA. Any Directors may waive notice of a meeting by an instrument in writing filed with the records of the meeting or attendance at the meeting without protest. At all meetings of the Board a majority of the Directors shall constitute a quorum for the transaction of business, and the act of a majority of the Directors present at any meeting at which there is a quorum shall be the act of the Board, except as may be otherwise expressly required by the Corporation's Articles of Agreement, these Bylaws or Chapter 292 of the New Hampshire Revised Statutes Annotated. If a quorum is not present at any meeting of the Board, the Directors present may adjourn the meeting from time to time, without notice other than announcement, until a quorum shall be present or available.

Section 4. Committees

The President may designate one (1) or more standing committees. Such committee(s) shall consist of two (2) or more Directors and shall have such powers and duties as the Board deems desirable.

Section 5. Removal

Any Director may be removed with or without cause at a meeting of the Board duly called for such purpose by a two-thirds (2/3) majority vote of the disinterested members of the Board.

Section 6. Resignation

Any Director may resign at any time by giving written notice to the President or the Secretary. Any such notice shall take effect as of the date of the receipt of such notice or at any later time specified therein.

Section 7. Vacancies

If the position of any Director shall become vacant by reason of death, resignation, disability, retirement, disqualification, removal from office, or for other cause, the remaining Officers shall elect a successor(s) for the unexpired term of such Director.

Section 8. Compensation

No Director or Officer is to receive compensation for services.

ARTICLE VI NOMINATIONS

The President shall annually appoint a Nominating Committee. The Nominating Committee shall identify and nominate well-qualified candidates for each of the elective offices of NHSTA and make recommendations to the Board of Directors.

ARTICLE VII OFFICERS

Section 1. General

NHSTA shall have as Officers a President, a First Vice President, a Second Vice President, a Secretary, and a Treasurer, all of whom are elected by the membership. The Officers will also include the Immediate Past President and one Director-At-Large, who is elected by the sitting Board of Directors.

Section 2. Terms of Office

Officers shall serve for a term of one year or until their successors are elected and installed. The President, a First Vice President, a Second Vice President, a Secretary, and a Treasurer may serve no more than two consecutive terms in the same office. Installation of Officers shall be held at the first annual meeting of the new board at a time and place to be determined by the President.

Section 3. President

The membership shall elect the President. The President shall preside over meetings of the Board of Directors and shall be responsible for the agenda and general conduct of such meetings.

He/she will represent NHSTA at local, civic, and community activities which require NHSTA's attendance.

Section 4. First Vice President

The membership shall elect the First Vice President. The First Vice President shall preside over meetings of the Board of Directors when the President is unable and shall serve as chair of the fall conference.

Section 5. Second Vice President

The membership shall elect the Second Vice President. The Second Vice President shall preside over meetings of the Board of Directors when the President and First Vice President are unable. The Second Vice President shall serve as chair of the spring conference and assist the First Vice President with the fall conference.

Section 6. Treasurer

The Treasurer shall be elected by the membership and shall keep correct and complete records of accounts accurately showing at all time the financial condition of NHSTA. Subject to the direction of the Board, the Treasurer shall be the legal custodian of all funds of NHSTA, shall keep a detailed account of its income and expenditures, and shall be responsible for payment of all expenditures of NHSTA. The Treasurer will assure that all legal forms and documents are filed in accordance with the IRS and the State of New Hampshire.

Section 7: Secretary

The Secretary shall be elected by the membership and shall keep the minutes and records of NHSTA, maintain the NHSTA Policy Manual, maintain correspondence as requested by the President, and in general, perform all duties incidental to the office of Secretary and such other duties as may be assigned by the President or the Board.

Section 8. Removal

Any Officer may be removed with or without cause, from such office by a two-thirds (2/3) vote of the majority of the disinterested members of the Board at a meeting of the Board called for such purpose.

Section 9. Resignation

Any officer may resign at any time by giving written notice to the Board or to the President or the Secretary of NHSTA. Any such notice shall take effect as of the date of the receipt of such notice or at any later time specified herein.

Section 10. Vacancies

In the event of resignation, retirement, disqualification, death, disability or removal from office, for any reason whatsoever, of any Officer of NHSTA, the vacancy so created shall be appointed by a majority of the Officers.

ARTICLE VIII GENERAL PROVISIONS

Section 1. Fiscal Year

The fiscal year of NHSTA shall be established by the Board of Directors.

Section 2. Dues

Dues will be set annually by the Board of Directors.

ARTICLE IX AMENDMENTS

The By-Laws may be altered, amended, or repealed and new By-Laws may be adopted by a majority vote of the Directors present at any regularly scheduled board meeting. However, in no event may any amendments be made which would affect the corporation's qualification as a tax-exempt organization pursuant to Section 501(c)(3) of the Code or corresponding section of any future federal tax code.

ARTICLE X NON-DISCRIMINATION

NHSTA shall not discriminate against any person in any manner on the basis of sex, race, age, religion, handicap or ethnic origin.

ARTICLE XI: LIMITATION OF LIABILITY

The Directors and Officers of NHSTA shall, to the fullest extent permitted by N.H. RSA Chap. 292, not be liable to NHSTA or to its shareholders for monetary damages for breach of their fiduciary duties.

ARTICLE XII INDEMNIFICATION

NHSTA shall indemnify and hold its Directors and Officers harmless from and against all suits, claims, injuries, or damages asserted against them, so long as the Director or Officer to be indemnified has not acted in bad faith or engaged in intentional misconduct, knowing violation of the law, or derived an improper personal benefit.

ARTICLE XIII CONFLICTS OF INTEREST

Any possible conflict of interest on the part of any member of the Board, Officer or employee of NHSTA, shall be disclosed in writing to the Board and made a matter of record through an annual procedure and also when the interest involves a specific issue before the Board. Where the transaction involving a board member, trustee or officer exceeds five hundred dollars (\$500) but is less than five thousand dollars (\$5,000) in a fiscal year, a two-thirds vote of the disinterested Directors is required. Where the transaction involved exceeds five thousand dollars (\$5,000) in a fiscal year, then a two-thirds vote of the disinterested Directors and publication in the required newspaper is required. The minutes of the meeting shall reflect that a disclosure was made, the abstention from voting, and the actual vote itself.

Every new member of the Board will be advised of this policy upon entering the duties of his or her office, and shall sign a statement acknowledging, understanding of and agreement to this policy. The Board will comply with all requirements of New Hampshire law in this area and the New Hampshire requirements are incorporated into and made a part of this policy statement.

ARTICLE XIV DISSOLUTION

Upon the dissolution of NSHTA, the Board of Directors shall, after paying or making provisions for or the payment of all liabilities of NHSTA, shall distribute the remaining assets to any agency or organization which is interested in science education in New Hampshire and is exempt from taxation under Section 501 (c)(3) of the Internal Revenue Code of 1986, or corresponding section of any future federal tax code.

Spring UNH Seminars for Science Teachers. By Barbara LeHoullier, UNH Professional Development & Training

Other items of interest include our spring conference, Stressed-Out Teachers, Stressed-Out Students (<http://www.learn.unh.edu/stress/>) and a variety of other general topics (<http://www.learn.unh.edu/pcw/pd/sched.php?id=51#68>). Contact and registration information can be found on our website at www.learn.unh.edu/pcw, by calling 603-862-4234, or emailing us at professional.development@unh.edu.

Fostering Science Inquiry in Young Learners (K-3). Manchester/400: *CRN 25540, April 4, Saturday, 9:30 a.m.-4 p.m., .6 CEUs, \$135, lunch included*. Inquiry is the basis of science, and young learners, with their natural curiosity about the environment, are often filled with questions. This workshop will explore simple ways of helping children observe more closely, experiment, and make connections with their world. You will investigate activities that will encourage learners to answer their own questions and prompt them to ask more. **Instructor:** Barbara Bald, M.S., M.Ed., CAGS, has more than 25 years in education as a classroom teacher, supervisor, consultant and workshop facilitator. She has worked with children ages Pre-K through 12.

Physical Science for Young Learners (Pre-Gr. 2). Manchester/400: *CRN 25653, May 9, Saturday, 9:30 a.m.-4 p.m., .6 CEUs, \$135, lunch included*. Explore concepts of physical science that are appropriate for early childhood. You will become actively engaged in the investigation of units of study such as energy, force, things in motion, and properties of matter. You'll leave with fun ideas for hands-on, stimulating lessons and materials that can be readily implemented in your own classrooms and are connected directly to the National Science Standards for Science Education. **Instructor:** Susan Nichols, M.Ed., has over 15 years' professional experience in the Early Childhood field. She is a former preschool and kindergarten teacher, director of early childhood programs, and adjunct faculty member. She is the Early Childhood Special Projects Coordinator for the NH Community College System. **Instructor:** Alice Beyrent, M.Ed., has been Associate Professor of Early Childhood Education at Hesser College since 1993. She has more than 20 years of experience in Early Education in a variety of early childhood programs and as adjunct faculty in other institutions of higher education.

Science on a Shoestring (Gr. 1-6). Portsmouth: *CRN 25721, May 9, Saturday, 9:30 a.m.-4 p.m., .6 CEUs, \$135, lunch included*. It doesn't take a lot of money or fancy equipment to teach science concepts, skills or appreciation. In this hands-on workshop, you'll explore how to use simple, everyday, easy-to-make items and 'junk' to learn about physical, earth and life science. You'll consider how to incorporate science into your elementary classroom with minimal time, preparation and finances. **Instructor:** Barbara Bald, M.S., M.Ed., CAGS, has more than 25 years in education as a classroom teacher, supervisor, consultant and workshop facilitator. She has worked with children ages Pre-K through 12.

Science for Young Learners (Toddlers-K). Manchester/400: *CRN 25663, March 28, Saturday, 9:30 a.m.-4 p.m., .6 CEUs, \$135, lunch included*. If you teach active toddlers or preschoolers then this workshop is just what you need to help children learn science basics using a hands-on discovery approach linked with quality children's literature. You will explore: things that grow, all about animals, and backyard science themes. The activities that accompany the recommended literature use easy-to-gather materials and capitalize on children's natural curiosity and desire to explore everything around them. **Instructor:** Susan Nichols, M.Ed., has over 15 years' professional experience in the Early Childhood field. She is a former preschool and kindergarten teacher, director of early childhood programs, and adjunct faculty member. She is the Early Childhood Special Projects Coordinator for the NH Community College System.

Instructor: Alice Beyrent, M.Ed., has been Associate Professor of Early Childhood Education at Hesser College since 1993. She has more than 20 years of experience in Early Education in a variety of early childhood programs and as adjunct faculty in other institutions of higher education.

Barbara LeHoullier, UNH Professional Development & Training, (603) 862-1095. www.learn.unh.edu/pcw



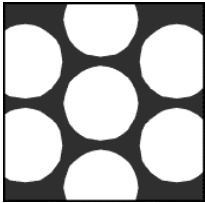
NHSTA Newsletter

February, 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!!

NHSTA
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Lower Waterford, VT
05848

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