

# New Hampshire Science Teachers' Association

## Spring (very early) Newsletter (E-Edition), 2011-2012

NHSTA Newsletter Editor: Paul Williams

Volume 8, Issue 3

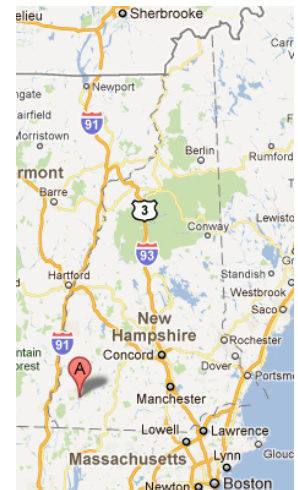
Very Early Spring 2012

### NHSTA Spring K-12 Science Conference at Keene State College March 12, 2012! By Mark Parsons, NHSTA Spring Conference Chairperson, NHSTA 2nd Vice-President.



It is time to plan to attend the Spring Science Conference at Keene State College in Keene, New Hampshire on Monday March 12, 2012.



We are delighted to be holding our traditional spring conference at this new site. The workshops and exhibitors will be held in the newly renovated and spacious science building. This facility has wireless access throughout



and laboratory classrooms to meet the needs of presenters and attendees. Lunch will be provided and held in the next door in the Dining Commons which will be open with some great food choices.

Fifty-six workshops will be offered in four sessions that will span all content areas and grade levels. When you attend a NHSTA conference, you can be sure that you will find opportunities to expand in both professional and personal learning. Time is allowed to visit the exhibitors and to meet with other teachers of science from throughout the state.

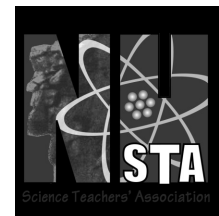
The Conference Information and the Conference At-a-Glance begins on page 3.

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Spring	Conference	Keene	State				
2012	2012	2012	2012				
3	12 3	12	New Hampshire Science Teachers' Association <i>2012 Spring Conference</i>  <b>March 12, 2012</b>				
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## NHSTA Board of Directors, 2011/2012

**President** – Leslie McRobie, Somersworth Middle School



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**1st Vice-President/2011 Fall Conference Chair** - Steve Roberts, Inter-Lakes School, Middle Tier

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**Office Manager**, Newsletter Editor, Database Engineer, Conference Organizer – Paul Williams;

**Annual Spring Conference:** Keene State College, Monday, March 12, 2012

**Annual Fall Conference.** Church Landing, Meredith, Sunday and Monday, November 4 and 5, 2012

*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, first vice-president, second vice-president, secretary, treasurer, and director-at-large. 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](http://www.nhsta.net) NHSTA, PO Box 583, Littleton, NH 03561*

**Note:** *Although we try and keep announcements current, it is possible that sign-up dates may have elapsed by the time you get this. Check via phone or web addresses to be sure.*

# **New Hampshire Science Teachers' Association and Keene State College K-12 Science Education Conference**

The headquarters for the conference will be Putnam Science Center which is on Appian Way at the center of the Keene State College campus. This building houses the instructional laboratories and classrooms as well as the offices and research laboratories of the chemistry, biology, computer science, environmental science, geology and physics faculty.

This Conference is Co-Sponsored by NHSTA and Keene State College.

**Continental breakfast, snacks, beverages, and luncheon are included in the registration cost.**

Web address: <http://www.nhsta.net> phone: 888-590-1555 (for messages only)

## **NHSTA SPRING CONFERENCE SCHEDULE**

**Monday, March 12, 2012**

7:00-2:30      **Exhibits:** 1<sup>st</sup> floor of Putnam Science Center in the Atrium

Exhibits and snacks/beverages will be available on the 1<sup>st</sup> floor of the Putnam Science Center

7:00-8:00      **Registration** – Room 101, Putnam Science Center

8:00-9:00      **Session I Workshops**, Putnam Science Center, Floors 1- 3

9:00-9:20      **Exhibits/Coffee Break**, 1<sup>st</sup> floor of Putnam Science Center

9:20-10:20    **Session II Workshops**, Putnam Science Center, Floors 1- 3

10:20-11:00   **Exhibits/Coffee Break**, 1<sup>st</sup> floor of Putnam Science Center

11:00-12:00   **Session III Workshops**, Putnam Science Center, Floors 1- 3

12:00-12:20   **Exhibits/Coffee Break**, 1<sup>st</sup> floor of Putnam Science Center

12:20-1:20    **Session IV Workshops**, Putnam Science Center, Floors 1- 3

1:20 – 2:20      **Luncheon** – Zorn Dining Commons

Conference Agenda follows on the next 4 pages

<b>Conference-At-A-Glance: Session 1: 8:00 AM - 9:00 AM</b>					
Title	Presenter	Format	Room	Content	Level
<b>1. Sponsored Workshop, CPO Science - Marble Launcher</b>	Fred Pidgeon, CPO Science	HO	<b>Room 364</b>	PS, P	M/H
<b>2. Sponsored Workshop, East Hill Farm - Farm Based Education at East Hill Farm</b>	Jennifer Adams, Farm Educator and Jessica Skinner, Consultant	HO, DI	<b>Room 161</b>	LS, EV, M, LI Understanding place, Sustainability	MS
<b>3. Life Science Share-a-thon</b>	Patrick Dorcus, Winchester School	DI	<b>Room 301</b>	LS, EV	E/M/H
<b>4. Highs, Lows &amp; Weather Forecasting</b>	Andrew DiGiovanni, Bedford High School & American Meteorological Society Resource Teacher and Kevin Munroe, Bedford High School	HO, DE	<b>Room 175</b>	ES	M/H
<b>5. Lights for Learning</b>	Jackie Perrin, Lights for Learning	L,DI	<b>Room 129</b>	EV	All
<b>6. The Chemistry of Cooking</b>	Jay Godfrey, Retired Educator	L	<b>Room 203</b>	LS, PS	M/H
<b>7. Project WET: A Supplement to Your Curriculum</b>	Alicia Carlson, N.H. Department of Environmental Services	HO, DE	<b>Room 126</b>	ES, EV	All Levels
<b>8. Monitoring storm water dynamics with simple aquatic sensors</b>	Mark Green, Plymouth State University	DI, L	<b>Room 251</b>	LS, ES, PS, EV, M, T	M/H
<b>9. Integrating STEM Reading Practice in the Science Classroom</b>	Betsy Stefany, Project Manager NH MSP, The SABENS Group	HO, DI, DE	<b>Room 181</b>	LS, ES, PS, EV, M, T, A, LIT	All Levels
<b>10. Intuitive Quantum Mechanics</b>	Michael Wittmann, University of Maine, Orono and Dawn Meredith, University of New Hampshire	HO, DI, DE	<b>Room 375</b>	P, PS	H
<b>11. Writing and the Practice of Science/Engineering</b>	Magdalena Rabidou, Museum of Science, Boston	HO, DI	<b>Room 127</b>	LS, LIT, Writing	E/M
<b>12. Biomes of the World</b>	Mrs. Laura Sjolander, Haverhill Cooperative Middle School	HO, DI, DE	<b>Room 351</b>	LS, EV	E/M
<b>13. Advancing science projects to international quality.</b>	Dick Feren and Janice G. Kaliski, NH Science & Engineering Exposition Association	DI	<b>Room 282</b>	LS, ES, PS, EV, T, M, S, LIT, A	M/H
<b>14. Passion Flowers!</b>	Dr. Kristen Porter-Utley, Keene State College	DI, L, DE	<b>Room 332</b>	LS	M/H

<b>Conference-At-A-Glance: Session 2</b>					
<b>Title</b>	<b>Presenter</b>	<b>Format</b>	<b>Room</b>	<b>Content</b>	<b>Level</b>
<b>1. Atom Building. Sponsored workshop – CPO Science</b>	Fred Pidgeon, CPO Science	HO	<b>Room 364</b>	PS	M/H
<b>2. To React or Not to React: That is the Question! Expanded Session Workshop: 9:20 AM - 10:20 AM – break – 11:00 AM – 12:00 PM</b>	V. Arthur Hammon, NASA/Jet Propulsion Laboratory and Mr. William Church, Littleton High School	HO, DI	<b>Room 351</b>	PS, P	H
<b>3. Technology-Enhanced Formative Assessment (TEFA): Providing classroom management tools to make student engagement more effective</b>	William J. Leonard, University of Massachusetts Amherst, Department of Electrical and Computer Engineering, and Dawn Meredith, University of New Hampshire, Department of Physics	HO, DE	<b>Room 175</b>	LS, ES, PS, EV, M, T,	M/H
<b>4. Living Like Coyotes: What a Successful Predator can Teach Us About Surviving Change.</b>	Chris Schadler, Rochester School District & Project Coyote	L	<b>Room 302</b>	LS, EV	M/H
<b>5. A Forest For Every Classroom</b>	Erin Hollingsworth, NH Project Learning Tree and Susan Cox and Geoff Wilson, USFS and Hubbard Brook Experimental Forest	HO, DI, L	<b>Room 275</b>	LS, ES, EV, M, T, LIT	M/H
<b>6. Seeing is believing - visualizing physics with your own VPython computer simulations. Part 1 (Part 2 follows in Session 3)</b>	Richard Levergood, Londonderry High School/Physics Teachers Alliance	HO, DI, DE	<b>Room 375</b>	PS	M/H
<b>7. Chemistry Science Share-a-thon</b>	Dr. Sally Jean, Science Education, Keene State College	DI	<b>Room 201</b>	PS – Chemistry	M/H
<b>8. The Science of Sheep and Wool</b>	Ruth Smith, NH Agriculture in the Classroom	HO, DE	<b>Room 126</b>	LS, PS, EV	E/M
<b>9. GREEN STEM: Exploring Green Energy Connections between the Classroom, School and Community</b>	Betsy Stefany, The SABENS Group	HO, DI	<b>Room 251</b>	LS, ES, PS, EV, M, T	All
<b>10. Creating Meaningful Rubrics that Assess Student Learning</b>	Stan Freeda, NH Department of Education	DI	<b>Room 154</b>	A	All
<b>11. Using Systems Thinking and Arithmetic to Build Mathematical Models in the Classroom</b>	Charles Therriault, Plymouth State University Graduate School and Scott Semmens, Hopkinton Middle High School	HO, DI, L	<b>Room 161</b>	LS, EV, M, T	H
<b>12. Introducing Framing and Teaching Climate Change</b>	Peter Malsin, Vermont Institute of Natural Science	DI, DE, L	<b>Room 127</b>	ES, PS EV	All
<b>13. Weather Trackers</b>	Fran Leach and Cindy Oriani, Gilbert H. Hood Middle School	HO, DI, DE	<b>Room 380</b>	ES, EV, T	All
<b>14. Making Science Real: Using Sustainability and Student Action to Improve Your School</b>	Rachel Brett, Antioch University New England/Wild Treasures and Amanda Gurgul, Antioch University New England/Wild Treasures	HO	<b>Room 181</b>	EV, Service Learning	All

<b>Conference-At-A-Glance: Session 3: 11:00 AM - 12:00 Noon</b>					
<b>Title</b>	<b>Presenter</b>	<b>Format</b>	<b>Room</b>	<b>Content</b>	<b>Level</b>
<b>1. Krazy Traits, A novel way to present genetics. Sponsored Workshop – CPO Science</b>	Fred Pidgeon, CPO Science	HO	<b>Room 364</b>	LS	M/H
<b>2. Earth/Space Science Share-a-thon</b>	Mary Kate Hartwell, Timberlane Regional Middle School		<b>Room 301</b>	ES	All
<b>3. Teaching Climate Science that Sticks: award-winning - and free - climate education resources</b>	Rouwenna Lamm, Alliance for Climate Education and Brian Stilwell, Alliance for Climate Education	L, DE	<b>Room 127</b>	LS, ES, PS, EV	H
<b>4. Implementing STEM in Your Classroom with Carolina™ Curriculum and the Smithsonian Institution</b>	Jim Smoyer, Consultant	HO	<b>Room 126</b>	LS, lit	E/M
<b>5. Transforming Recipe-Based Science Lessons into Engaging Student-Centered &amp; Directed Problem-Solving Challenges</b>	Jimmy Karlan, Ed.D, Antioch University New England and some Science Teacher Certification Students, Antioch University New England	HO, DI, DE, Free post conference 1-hour consultation	<b>Room 380</b>	LS, ES, PS, EV	M/H
<b>6. Teaching Observational Astronomy</b>	David McDonald, M.Ed., Director of Education, McAuliffe-Shepard Discovery Center	Illustrated lecture, DI, HO	<b>Room 264</b>	ES	All
<b>7. Developing Questions to stimulate classroom discussions (in the context of formative assessment).</b>	William J. Leonard, University of Massachusetts, Amherst, Department of Electrical and Computer Engineering and Dawn Meredith, University of New Hampshire	DI, HO, DE	<b>Room 175</b>	LS, ES, PS, EV, M, T	M/H
<b>8. Preparing Your Students for Next Generation Learning</b>	Stan Freeda, NH Department of Education	DI	<b>Room 154</b>	T, Best teaching practices	All
<b>9. Differentiated Instruction</b>	Deborah O'Connor, Pinkerton Academy	DI, L, DE	<b>Room 129</b>	LS, ES, PS, EV, M, A	All
<b>10. Seeing Is Believing - Visualizing Physics With Your Own Vpython Computer Simulations. Part 2. (First Part is in Session 2)</b>	Richard Levergood, Londonderry High School/Physics Teachers Alliance	HO, DE, DI	<b>Room 375</b>	PS	M/H
<b>11. Environmental Literacy Curriculum: Planning, Implementation and Assessment</b>	Meg K Edstrom, Ferry Beach Ecology School	HO, DI	<b>Room 251</b>	LS, ES, EV	E/M
<b>12. The Application of Physics in Crash Reconstruction</b>	Rick McAlister, The Crash Lab, Inc	DI, L, DE	<b>Room 161</b>	PS, M, T	M/H
<b>13. A National Network of Teachers and Students Measuring Important Precipitation and Snow Events</b>	Stephen Hale, UNH - Leitzel Center and Mary Stampone, UNH - Dept. of Geography	HO, DE	<b>Room 275</b>	ES, PS, EV	All
<b>14. NASA in the Classroom</b>	Thomas Estill, NASA	L	<b>Room 181</b>	ES	M/H
<b>15. To React or Not to React: That is the Question! Continued from last session. Expanded Session Workshop: 9:20 AM - 10:20 AM – break – 11:00 AM – 12:00 PM</b>	V. Arthur Hammon, NASA/Jet Propulsion Laboratory and Mr. William Church, Littleton High School	HO, DI	<b>Room 351</b>	PS, P	H

<b>Conference-At-A-Glance: Session 4: 12:20 PM - 1:20 PM</b>					
<b>Title</b>	<b>Presenter</b>	<b>Format</b>	<b>Room</b>	<b>Content</b>	<b>Level</b>
<b>1. A Greener Chemistry Program - Understanding One Part Per Million. Sponsored Workshop – Lab-Aids</b>	Patsy Eldridge, Educator/Sales Specialist, Lab-Aids, Inc.	HO	<b>Room 351</b>	PS, EV	M/H
<b>2. New Tools for STEM Education from Carolina™ Curriculum</b>	Jim Smoyer, Consultant	HO	<b>Room 126</b>	PS, M, T	E/M
<b>3. Genetics Gets Personal: Teaching the Ethical, Legal and Social Issues in Personal Genetics</b>	Lauren Tomaselli, Harvard Medical School - Personal Genetics Education Project and Dr. Marnie Gelbart, Harvard Medical School - Personal Genetics Education Project	DI, L	<b>Room 129</b>	LS, T	H
<b>4. Christa McAuliffe: The Lost Lessons &amp; Her Legacy in Ideas &amp; Imagery</b>	Philip Browne, Science Instructor/Consultant, Concord Community Ed	HO, DI, Collaborative DI, project based	<b>Room 175</b>	M, ES, EV	All
<b>5. A Vision of Science Education in the 21st Century</b>	Jimmy Karlan, Antioch University New England	DI, L	<b>Room 380</b>	LS, ES, PS, EV	M/H
<b>6. Mineral Characteristics and Identification</b>	Heather Brunelle, Ross Lurgio Middle School	HO, DI	<b>Room 251</b>	ES	All
<b>7. Building a Statewide Education and Outreach Network Around Climate and Energy</b>	Cameron Wake, University of New Hampshire, ESRC/EOC and Stacey Doll, NH Energy and Climate Collaborative	HO, DI, L	<b>Room 181</b>	ES, EV, LIT	All
<b>8. Physics Teacher Share-a-thon</b>	Scott Goelzer, Coe Brown Academy	DE	<b>Room 301</b>	P, PS	All
<b>9. Learning scientific inquiry through field investigations.</b>	Dr Judy Silverberg, NH Fish and Game and Susan Cox, USDA Forest Service	HO, DI	<b>Room 161</b>	LS, EV, T, Science process skills,	ALL
<b>10. Teaching and Learning Using Web 2.0 Tools</b>	Stan Freeda, NH Department of Education	DI	<b>Room 154</b>	T	All
<b>11. Using Invasive Species to Apply Inquiry-Based Skills and Learning in Your Elementary or Middle Level Classroom: A Fun, Hands-on Exploration</b>	Piera Siegert, State Entomologist; NH Department of Agriculture, Markets and Food and Laura Beard, NH Dept. of Agriculture, Markets and Food	HO, DE	<b>Room 127</b>	LS, EV	E/M
<b>12. REsearch and REthink the Way You Teach REcycling</b>	Nicole Martin, Franklin Middle School	HO, DI	<b>Room 364</b>	ES, EV	M
<b>13. Diffusion, the Cell Membrane, and Ourselves: Biology Comes Alive through the Aesthetic Realism Method</b>	Rosemary Plumstead, retired NYC science educator/teacher trainer and Sally Ross, retired NYC science educator	DE	<b>Room 303</b>	LS	M/H
<b>14. What the heck is a POGIL?</b>	Dr. Jerry Jasinski, Keene State College	HO, DI	<b>Room 302</b>	PS – specifically chemistry	H

**Important NOTE: Make sure your membership is up to date. To get the member rate, you must have paid your NHSTA dues. If your membership needs to be renewed (or – you need to join), use the membership form below and mail it in with the conference registration (you may use the “Member Fee.”)**

	Early Bird Registration (postmarked by 2/10/11)		Regular-Registration postmarked 3/5/11)		Onsite/Late Registration (after 3/5/12)		Subtotal
<b>Monday (3/12/2012)</b>	<b>Members</b>	<b>Nonmembers (includes membership)</b>	<b>Members</b>	<b>Nonmembers (includes membership)</b>	<b>Members</b>	<b>Nonmembers (includes membership)</b>	
	<b>\$75.00</b>	<b>\$100.00</b>	<b>\$125.00</b>	<b>\$150.00</b>	<b>\$150.00</b>	<b>\$175.00</b>	
<b>Special Pricing for Full Conference: Retired, Para-educators</b>					<b>\$75.00</b>		
<b>Special Pricing for Full Conference: Students or Spouse</b>					<b>\$50.00</b>		
<b>Make checks and PO's payable to NHSTA</b> (If your school pays with a purchase order, it would be helpful to bring a copy of it)						<b>TOTAL ENCLOSED:</b> _____	
<b>Mail registration form and check (or PO) to:</b> NHSTA, PO Box 583, Littleton, NH 03561			<b>REGISTER AND PAY ONLINE AT <a href="http://WWW.NHSTA.NET">WWW.NHSTA.NET</a></b> E-mail: <a href="mailto:nhsta@togetether.net">nhsta@togetether.net</a> Phone: 888-590-1555 (for messages only)				
<b>Continental breakfast, snacks, beverages, and luncheon are included in the registration cost</b>							
<b>You can register on-line and pay with a credit card, Purchase order or check at: <a href="http://www.nhsta.net">www.nhsta.net</a>.</b>							

Conference Links

Participant Registration: <http://www.event.com/d/rcqk9k/4W>

booklet link <https://custom.event.com/926E2076C6134F25BCEB366CF7980096/files/event/89dcf6a0dca842f6bc977deb9a216e82/23d44094ddd24454ae578e7e4c58c572.pdf>

at-a-glance link <https://custom.event.com/926E2076C6134F25BCEB366CF7980096/files/event/89dcf6a0dca842f6bc977deb9a216e82/8674bbca895a400eb8d284afdc66d11c.pdf>

Parking pass: <https://custom.event.com/926E2076C6134F25BCEB366CF7980096/files/event/89dcf6a0dca842f6bc977deb9a216e82/fc55d65407c340a09ec95a17cafc7b05.pdf>

Science Center Floor Plan: <https://custom.event.com/926E2076C6134F25BCEB366CF7980096/files/event/89dcf6a0dca842f6bc977deb9a216e82/4ba5769169f0400caa8b799bd7defcb8.pdf>

**It's time to register for the  
8th Annual K-12 Nanotechnology Teacher Conference**

**Wednesday, April 11, 2012 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 is bringing sweeping changes to the 21<sup>st</sup> Century. 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 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.

**If you have never been to this conference, or if you haven't attended in some time, it's time to get a fresh perspective on the up and coming field that is already sweeping the nation, and the world.**

**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— Keynote speaker  
12:00 pm — Buffet Lunch  
1:00-2:00 pm— Second session of workshops  
2:15 pm—Announcements and concluding remarks

REGISTRATION BEFORE THE CONFERENCE IS **REQUIRED—Deadline, March 26, 2012**. Registration information available from the 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 Academic Way, Durham, NH 03824, 603-862-3325, 862-4278 fax, [susan.greenberg@unh.edu](mailto:susan.greenberg@unh.edu).

**Exploring the Past: Archaeology in the Upper Mississippi River Valley. Submitted by Bonnie L. Jancik, Director of Public Education, Mississippi Valley Archaeology Center**

Walking beside thousand-year-old burial mounds, flaking raw stone into tools, learning how potsherds tell us about human behavior, and understanding how humans adapt to complex, ever-changing environments—our 2012 NEH Summer Institute features all this and more.

The Mississippi Valley Archaeology Center at the University of Wisconsin—La Crosse will offer a three-week NEH Summer Institute on July 9–27, 2012. This dynamic learning experience for K-12 teachers will explore how Native Americans and Euro-Americans have adapted to the Upper Mississippi River Valley over the past 13,500 years, and how archaeology leads to an understanding of how human cultures change and adapt through time.

The Institute will feature a one-day excavation experience, field trips to archaeological sites, hands-on laboratory and workshop activities, demonstrations, and classroom activities. Individual projects will help participants tailor the content to their own teaching areas. NEH Summer Scholars receive a \$2,700 stipend to help offset their expenses.

Application and other information on the Institute will be available online [at http://www.uwlax.edu/mvac/neh.htm](http://www.uwlax.edu/mvac/neh.htm). The deadline for applications is March 1, 2012.

Any views, findings, conclusions, or recommendations expressed in this program do not necessarily reflect those of the National Endowment for the Humanities.

Bonnie L. Jancik, Director of Public Education, Mississippi Valley Archaeology Center at the University of Wisconsin - La Crosse, 1725 State Street, La Crosse, WI 54601 Phone: 608-785-6473; Fax: 608-785-6474

E-mail: [bjancik@uwlax.edu](mailto:bjancik@uwlax.edu)

Visit the MVAC World Wide Web site at:

<http://www.uwlax.edu/mvac>

Visit the UW-L Archaeology Studies Program at:

<http://www.uwlax.edu/Sociology/Archaeology>

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**Apply for Professional Development Scholarships: Amazon Rainforest Workshop & Machu Picchu Extension**

Searching for something unique! spirited! and fun! this summer? K-12 teachers and environmental educators can win one of three \$1000 scholarships to travel with scientists to one of the most diverse environments in the world. Join group leader Donna Krabill, Norfolk Botanical Garden and scientists Dr. Steve Madigosky, Widener University and Randy Morgan, Entomologist, Cincinnati Zoo on a rainforest discovery June 29- July 8, 2012. Experience a 1/4-mile Rainforest Canopy Walkway, Yagua Culture & Crafts, Village Service Project, ReNuPeru Ethnobotanical Garden, Birdwatching, Night Hikes, and Monkey Island Conservation Project. Open registration through May. Land cost is \$1850, plus air. Machu Picchu Extension is optional. Academic Credit is available. Land cost is \$850 for scholarship winners. Submit simple scholarship application by March 8. For program and scholarship information, visit <http://www.travel2learn.com/amazon.htm> (*case sensitive*). Contact Dr. Frances Gatz, 1-800-669-6806 or [frances@ee-link.net](mailto:frances@ee-link.net)

Frances Gatz, Ph.D., Director, Rainforest Workshops

ENVIRONMENTAL EXPEDITIONS, 9335 Fraser Ave, Silver Spring, Maryland 20910

Phone: 800-669-6806 Email: [frances@ee-link.net](mailto:frances@ee-link.net) <http://www.travel2learn.com>

## **Place-Based Professional Development for Middle and High School Teachers.** Submitted by Erin Hollingsworth

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 develop their own units 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 FFEC is the belief that students who are immersed in the study of their own “place” are more eager to learn about and be involved in the stewardship of their communities and public lands. Place-based education is the process of using the local community and environment as a starting point to teach concepts in science, mathematics, social studies and other subjects across the curriculum. This approach is proven to increase academic achievement while helping students develop stronger ties to their community, build appreciation for the natural world and a heightened commitment to becoming active citizens.

The FFEC program provides 11 days of professional development over the course of four seasons, including a five-day residential summer session. Most sessions are based at the world-class [Hubbard Brook Experimental Forest](#) in central NH.

**It all begins May 11-12, 2012 and registration is OPEN!**

To register or to download the complete FFEC brochure, please visit <http://www.nhplt.org/index.php/calendar/event/31/>

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**Summer Institute in Physics and Physical Science for Inservice Teachers:** June 25-July 27, 2012 (tentative). Department of Physics, University of Washington, Seattle

The Center for Physics Education in the University of Washington Physics Department offers a five-week, 10-credit summer institute in physics and physical science for full-time inservice teachers. The 2012 institute is tentatively scheduled for June 25-July 27 at the UW in Seattle. Classes meet from 9 a.m. to 3:45 p.m. Monday-Thursday, except for two Fridays scheduled for exams. 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 who may have little or no background in physics; the other for high school teachers of physics, physical science, and mathematics.

The application deadline is March 2, 2012.

Additional information is available on our website <<http://www.phys.washington.edu/groups/peg/si2012.html>>.

For further information contact: Nina Tosti, University of Washington, Department of Physics, Box 351560, Seattle, WA 98195-1560 Telephone: 206-685-2046 [pegsi@phys.washington.edu](mailto:pegsi@phys.washington.edu)

**2012 Thacher Environmental Research Contest for Grades 9-12: \$3,500 in Cash Awards Available. Entries Due: April 16, 2012 <http://www.strategies.org/thachercontest>**

*\*Be part of a new generation of problem solvers that will meet the challenges posed by a changing planet \*\*\**

From the movement of Hurricane Irene up the east coast of the United States to images of the receding ice in polar regions, scientists and decision-makers rely upon satellites and other observing instruments to understand the extent and impact of environmental changes. These tools are offered to the public with ever increasing accessibility, turning people into citizen scientists.

The 2012 Thacher Environmental Research Contest, held by the Institute for Global Environmental Strategies, provides high school students (grades 9-12) with the opportunity to conduct innovative research on our changing planet and win cash prizes for their efforts. Students must demonstrate the best uses of the latest geospatial tools and data to study the Earth.

Entries can be submitted by individuals or teams. Cash awards will be given to the top three projects -- \$2,000 for first place, \$1,000 for second place and \$500 for third place. In the case of team entries, the cash award will be split equally among the winning team members. Winners also will be featured in an Encyclopedia of Earth article.

In addition to the student prizes, teachers of the first-, second- and third-place students or teams will receive a \$200 amazon.com gift card. If participation is part of an after-school club or other activity independent of school, the student or team can identify an adult "coach" who would be eligible for this award (e.g., a parent, club leader, etc.).

Entries must be received by April 16, 2012. IGES plans to announce the winning entries by May 23, 2012. Eligible geospatial tools and data include satellite remote sensing, aerial photography, geographic information systems (GIS) and Global Positioning System (GPS). The main focus of the project must be on the application of the geospatial tool(s) or data to study a problem related to Earth's environment.

Geospatial tools and data have numerous uses in science research, ranging from climate prediction to archaeology. They can be used to improve our understanding of Earth systems, including interactions within and among the atmosphere, biosphere, geosphere and hydrosphere. They also can be used to improve the quality of our lives by supporting weather prediction, natural hazards monitoring, agriculture, land-use planning, coastal management, transportation, public health, emergency response and other fields.

The Thacher Environmental Research Contest (formerly the Thacher Scholars Award) was founded in honor of former IGES board member Peter Thacher, who was a leader in promoting the use of satellite remote sensing. Thacher was former deputy executive director of the United Nations Environment Program, NASA advisor and, at the time of his death, president of the Earth Council Foundation/U.S.

For more information on the 2012 Thacher Environmental Research Contest, including a list of resources for geospatial data, please visit [www.strategies.org/ThacherContest](http://www.strategies.org/ThacherContest)

CONTACT: Brandi Bernoskie, Institute for Global Environmental Strategies, (703) 312-7138 (Phone)  
(703) 312-8657 (FAX)

Email: [brandi\\_bernoskie@strategies.org](mailto:brandi_bernoskie@strategies.org)

**Art Trailworks**, an environmental art program for children in grades 2-5 with environmental art teacher, **Cynthia Robinson**.

**Art Trailworks**, an environmental art program, for children in grades 2 – 5 will be presented by environmental art teacher, Cynthia Robinson. **The program will be held on March 3, from 1:30 – 2:30 PM in the Community Room, Hopkinton Town Library, Contoocook.** This program is sponsored by The Little Nature Museum.

Who lives nearby? What do they need to survive? How do these animals and insects live next door to each other? Come use natural materials like bark, pine cones and sticks to create a sculpture which can also be a home for a local animal or insect. We'll work together to construct an indoor Nature Trail linking our animal homes....our own museum for a day! Then you'll take your Trailwork Artwork home to enjoy and share.

Cynthia C. Robinson is an experienced art teacher; she is currently teaching art at the Madison Elementary School, Madison, NH. She is an art instructor at A Plus After School Program; program director of the Friends of the Arts Regional Arts Council, Plymouth, NH; and an educational program development consultant for the Capital Center for the Arts in Concord. She is an artist-in-residence and substitute teacher in Moultonborough Central School. She has a MFA in Visual Art from Vermont College and a BS in Studio Art from Skidmore College.

**Preregistration is required; call 746-6121. This program is free but is limited to 15 children in grades 2 – 5.**

For weather related cancellation information, call 746-6121. For directions to the library: [www.hopkintownlibrary.org](http://www.hopkintownlibrary.org). Museum information: [www.littlenaturemuseum.org](http://www.littlenaturemuseum.org).



## **Wings of the Night: Owls and Bats**

The Little Nature Museum will present its final program of the winter/spring season on **Saturday, April 14th** from **1:30 - 2:30 PM in the Community Room, Hopkinton Town Library, Contoocook.**

Kevin Wall, Education Director of the New Hampshire Audubon Society, will present **“Wings of the Night: Owls and Bats.”** Even though nocturnal animals such as owls and bats rely heavily on their sense of hearing to survive, each has its own way of catching prey. A live owl, props, and a slide show will help us learn how each creature is beneficial to the natural world. The program is free; donations are appreciated.

Weather-related cancellation information: **603-746-6121**. Directions to the Library: [www.hopkintownlibrary.org](http://www.hopkintownlibrary.org). Museum information: [www.littlenaturemuseum.org](http://www.littlenaturemuseum.org)





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

Check out our great sites for kids: <http://climate.nasa.gov/kids> <http://scijinks.jpl.nasa.gov> <http://spaceplace.nasa.gov>

### **Dawn Takes a Closer Look.** By Dr. Marc Rayman.

Dawn is the first space mission with an itinerary that includes orbiting two separate solar system destinations. It is also the only spacecraft ever to orbit an object in the main asteroid belt between Mars and Jupiter. The spacecraft accomplishes this feat using ion propulsion, a technology first proven in space on the highly successful Deep Space 1 mission, part of NASA's New Millennium program.

Launched in September 2007, Dawn arrived at protoplanet Vesta in July 2011. It will orbit and study Vesta until July 2012, when it will leave orbit for dwarf planet Ceres, also in the asteroid belt.

Dawn can maneuver to the orbit best suited for conducting each of its scientific observations. After months mapping this alien world from higher altitudes, Dawn spiraled closer to Vesta to attain a low altitude orbit, the better to study Vesta's composition and map its complicated gravity field.

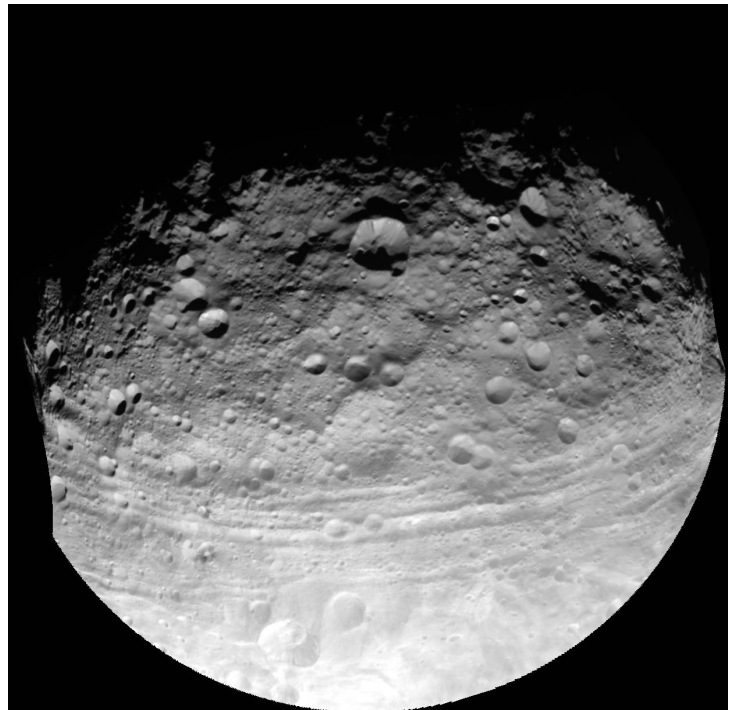
Changing and refining Dawn's orbit of this massive, irregular, heterogeneous body is one of the most complicated parts of the mission. In addition, to meet all the scientific objectives, the orientation of this orbit needs to change. These differing orientations are a crucial element of the strategy for gathering the most scientifically valuable data on Vesta. It generally requires a great deal of maneuvering to change the plane of a spacecraft's orbit. The ion propulsion system allows the probe to fly from one orbit to another without the penalty of carrying a massive supply of propellant. Indeed, one of the reasons that traveling from Earth to Vesta (and later Ceres) requires ion propulsion is the challenge of tilting the orbit around the sun.

Although the ion propulsion system accomplishes the majority of the orbit change, Dawn's navigators are enlisting Vesta itself. Some of the ion thrusting was designed in part to put the spacecraft in certain locations from which Vesta would twist its orbit toward the target angle for the low-altitude orbit. As Dawn rotates and the world underneath it revolves, the spacecraft feels a changing pull. There is always a tug downward, but because of Vesta's heterogeneous interior structure, sometimes there is also a slight force to one side or another. With their knowledge of the gravity field, the mission team plotted a course that took advantage of these variations to get a free ride.

The flight plan is a complex affair of carefully timed thrusting and coasting. Very far from home, the spacecraft is making excellent progress in its expedition at a fascinating world that, until a few months ago, had never seen a probe from Earth.

Keep up with Dawn's progress by following the Chief Engineer's (yours truly's) journal at <http://dawn.jpl.nasa.gov/mission/journal.asp>. And check out the illustrated story in verse of "Professor Starr's Dream Trip: Or, how a little technology goes a long way," at <http://spaceplace.nasa.gov/story-prof-starr>.

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



*This full view of the giant asteroid Vesta was taken by NASA's Dawn spacecraft, as part of a rotation characterization sequence on July 24, 2011, at a distance of 5,200 kilometers (3,200 miles). Credit: NASA/JPL-Caltech/UCLA/MPS/DLR/IDA*

## The Nerdiest Video Game Ever. By Dr. Tony Phillips

NASA has a job opening. Wanted: People of all ages to sort, stack, and catalogue terabytes of simulated data from a satellite that launches in 2015. Agile thumbs required.

Sorting terabytes of data? It's more fun than it sounds.

In fact it's a game: Satellite Insight. The Space Place Team at the Jet Propulsion Laboratory created the entertaining app for iPhones to get the word out about GOES-R, an advanced Earth science satellite built by NOAA and NASA.

Described by the *Los Angeles Times* as possibly "the nerdiest game ever," Satellite Insight may be downloaded for free from Apple's app store. Be careful, though, once you start playing it's hard to stop. Some reviewers have likened it to Tetris, one of the most popular video games of all time.

GOES, short for "Geostationary Operational Environmental Satellite," is the workhorse spacecraft for weather forecasters. NOAA operates two (at a time) in geosynchronous orbit, one above the west coast of N. America and one above the east coast. They monitor clouds, wind, rain, hurricanes, tornadoes and even solar flares. The GOES program has been in action since 1975.

GOES-R is the next-generation satellite with advanced technologies far beyond those of the older GOES satellites. It has sensors for lightning detection, wildfire mapping, storm tracking, search and rescue, solar imaging, and more. Many of the sensors are trailblazers. For example, the Advanced Baseline Imager has 60 times the capability of the current imager—16 channels instead of 5. It has twice the spatial resolution and five times the temporal refresh rate, including the 30-second imaging of weather systems over a region of 1000 km x 1000 km. Also, the Geostationary Lightning Mapper can count and pinpoint lightning bolts over the Americas 24/7. It's the first such detector to fly on a geosynchronous satellite, and it could lead to transformative advances in severe storm warning capability.

All in all, GOES-R represents a "huge technological leap from the current GOES." We know this because Satellite Insight tells us so. The app has an informative "Learn More" feature where players can find out about the satellite and the data they have been sorting.

Which brings us back to sorting data. It's a bit like eating Cheerios; just don't tell the kids it's nutritious, and they love it. Helping GOES-R gather and stash data from all those advanced sensors is just as satisfying, too—a dose of Earth science wrapped in thumb-flying fun.

More information about Satellite Insight may be found on the web at <http://itunes.apple.com/us/app/satellite-insight/id463588902?mt=8>. The game also available in web form (flying thumbs optional) at [spaceplace.nasa.gov/satellite-insight](http://spaceplace.nasa.gov/satellite-insight).



*New iPhone game is first NOAA app and only the second NASA game app. Just as with the real GOES-R, the challenge with Satellite Insight is to keep up with the massive influx of weather and other environmental data.*

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

*Why is it easier to float on the ocean than on a lake? It's because salty water is denser than fresh water. Wherever ocean water and fresh water meet, the saltier water sinks. Saltiness, or salinity, has a profound effect on ocean currents, too. Of course, so does heat, since warm water is less dense than cold water. These two simple facts, so important to understanding Earth's climate, are demonstrated in a fun way with our new "Go with the Flow" game. Use your salt and heat "tools" to create currents that will carry you to the treasure. Flow . . . er, go to <http://spaceplace.nasa.gov/ocean-currents>.*

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**Useful Information from Flinn Scientific, Inc.** P.O. Box 219, Batavia, IL 60510, 1-800-452-1261, E-mail: [flinn@flinnsci.com](mailto:flinn@flinnsci.com), Web site: [www.flinnsci.com](http://www.flinnsci.com)

**Flinn Scientific Publishes: The 2012 Flinn Science Catalog/Reference Manual. With New Products for Biology, Chemistry, Physical Science and Earth Science.**

Coming in January 2012 – Flinn Scientific will publish the new *2012 Flinn Science Catalog/Reference Manual*. This indispensable catalog/reference manual contains exciting products for chemistry, biology, physical science and earth science in addition to the wealth of safety material you expect from Flinn.

Helpful information regarding safe storage of chemicals, laboratory solution preparation, Right-To-Know requirements, chemical disposal procedures, and much more are also included.

This outstanding resource is a must for all secondary science teachers. Free copies are available to science teachers at school addresses only. To obtain a free copy, teachers only should contact Flinn Scientific at:

Flinn Scientific, Inc., P.O. Box 219, Batavia, IL 60510 1-800-452-1261 E-mail: [flinn@flinnsci.com](mailto:flinn@flinnsci.com)

Web site: [www.flinnsci.com](http://www.flinnsci.com)

**Flinn Scientific Announces: Coming in January 2012 . . . Flinn Catalog Just for Middle School Science Teachers**

Flinn Scientific offers a catalog designed exclusively for middle school science teachers.

The *2012 Flinn Science Catalog/Reference Manual for Middle Schools*, available in January 2012, features products, ideas and information specifically for middle schools.

Middle school teachers will appreciate finding everything they need for life science, earth science, and physical science, including laboratory chemicals, in one convenient source.

You will find low prices, valuable lab ideas, helpful safety tips, and chemical storage and disposal techniques. Every middle school and junior high school science teacher should have a copy of this unique catalog.

Free copies of the *2012 Flinn Science Catalog/Reference Manual for Middle Schools* are available to science teachers at school addresses only. Teachers only should contact Flinn Scientific at:

Flinn Scientific, Inc., P.O. Box 219, Batavia, IL 60510 1-800-452-1261 E-mail: [flinn@flinnsci.com](mailto:flinn@flinnsci.com)

Web site: [www.flinnsci.com](http://www.flinnsci.com)

**What's So Big about Nanotechnology?** New Activity-Stations Kit from Flinn Scientific

Help your students explore some of the fascinating developments in the rapidly growing field of nanotechnology with a new activity-stations kit, "What's So Big about Nanotechnology?" from Flinn Scientific.

Each of the four easy-to-set-up activities in the kit takes about 10 minutes to complete. Students can rotate through the stations in any order—allowing groups to work independently and learn more in one lab period. Student activities include:

- Placing objects in order of relative size from the astronomical to the atomic level.
- Exploring the properties of a magnetic fluid.
- Simulate a method of using nanoparticles to deliver medicine to targeted cells.
- Investigating water-repellent sand.

This versatile kit fits into many areas of the science curriculum with applications in measurement, physical and chemical properties, the health and biomedical fields, consumer science, and STEM education.

"What's So Big about Nanotechnology?" (AP7395) is available from Flinn Scientific for \$45.95 plus shipping.

To order or for more information see your *2012 Flinn Science Catalog Reference Manual*, visit the Flinn Web site at [www.flinnsci.com](http://www.flinnsci.com) or contact: Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 1-800-452-1261

E-mail: [flinn@flinnsci.com](mailto:flinn@flinnsci.com) Web site: [www.flinnsci.com](http://www.flinnsci.com)

**“Build-Your-Own” Physical Science Lab Kits.** Help Students Discover How Things Work

Flinn Scientific offers nine physical science kits designed to help students learn by doing! Students create, develop, design, and discover how scientific instruments and devices work by making these items themselves. Plus, they increase their understanding of how science and technology come together in the real world.

The “Build-Your-Own” physical science kits currently available are:

- Build a Dry Cell Battery (AP6925)
- Build a Microscope (AP7164)
- Build a Radio Speaker (AP7076)
- Build a Telescope (AP6266)
- DC Motor Made Simple (AP6263)
- Build Your Own Conductivity Tester (AP7265)
- Build a Simple AC Generator (AP7275)
- Build a Spectrophotometer (AP7161)
- Build a Mini Van de Graaff Generator (AP7277)

Each “Build-Your-Own” kit includes detailed background information, easy-to-follow instructions, and Teacher Notes with valuable hints and tips.

For more information or to place an order, see your *2012 Flinn Science Catalog Reference Manual*, visit the Flinn Web site at [www.flinnsci.com](http://www.flinnsci.com) or contact: Flinn Scientific, Inc. P.O. Box 219, Batavia, IL 60510 1-800-452-1261 E-mail: [flinn@flinnsci.com](mailto:flinn@flinnsci.com) Web site: [www.flinnsci.com](http://www.flinnsci.com)

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## **Opportunities from “Not Just RI Science Professional Development and Student Opportunity Bulletin” AAPAST Bulletin. By Ronald Poirier. December 23, 2011**

### **Transit of Venus Project**[Marker] - <http://www.transitofvenus.nl/>

At the end of this academic year, a marvelous and rare astronomical phenomenon will take place: on 5 and 6 June 2012 the planet Venus will pass exactly in front of the solar disk for the very last time this century. This transit of Venus provides for a unique and unparalleled opportunity to get your students actively involved in observing a daytime astronomical event and exchanging the results with others from abroad. In 2004, when a transit of Venus also took place for the first time since 1882, millions of students across the globe watched the planet against the sun and were engaged in activities increasing their understanding of solar system mechanics, the history of astronomical ideas and career opportunities.

One of the aims of the [Transit of Venus Project](http://www.transitofvenus.nl/), launched last June, is to help you science educators exploiting the full potential of the transit of Venus, from elementary to college level.

For more information visit [www.transitofvenus.nl](http://www.transitofvenus.nl) or email [info@transitofvenus.nl](mailto:info@transitofvenus.nl)

### **Afterschool Universe: Out-Of-School-Time Astronomy Resource – (MS)**

Afterschool Universe is an out-of-school-time astronomy curriculum targeted at middle school students. Developed in 2006 and rigorously pilot-tested and evaluated, the 12-session program explores astronomy concepts through engaging hands-on activities and takes participants on a journey through the Universe beyond the solar system. You can find out more about the program at the following website:

<http://universe.nasa.gov/afterschool/>

These training videos are meant as supplements to the program's manual and training workshops:

<http://www.youtube.com/user/AfterschoolUniverse>

You can also download these videos in a variety of formats from the NASA Goddard SVS website:

<http://svs.gsfc.nasa.gov/goto?10116>

For more information contact: Sara Mitchell, Goddard Space Flight Center, Code 660.1 / 301-286-4598, [Sara.Mitchell@nasa.gov](mailto:Sara.Mitchell@nasa.gov)

### **STEM Digital Images in Geoscience Investigations: Teaching Analysis with Light (STEM DIGITAL)**

Monday to Friday, June 25 - June 29, 2012 at UMass Amherst. Funded by the National Science Foundation, sponsored by the STEM Education Institute. Middle and High School Science, Math, and Technology Teachers. Stipends (\$375 summer, \$300 for optional school year follow-up), materials, parking, lunches

STEM DIGITAL will show how digital image analysis can be applied to environmental quality issues in ways that can readily be introduced into STEM courses, engaging students and encouraging them to think about related careers. The project will develop research agendas that will employ a variety of image analysis tools. The air quality theme will focus on the three components of the atmosphere that primarily affect visible, infrared and ultraviolet light, respectively: particulates and aerosols, carbon dioxide, and ozone. The water quality theme will look at the role of plant biomass on drinking water quality and on global carbon cycling. Arsenic is listed as number one in the US in terms of environmental contaminants that pose a potential threat to human health; research topics will include the identification and mapping of local arsenic contaminated sites and bio-remediation possibilities.

STEM DIGITAL will use the AnalyzingDigitalImages software which provides free, easy-to-use tools for spa-

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tial, temporal, spectral, and intensity measurements.

You may choose to also participate in an academic year follow up and work on approximately six projects spread over the fall and spring semesters. These will be a combination of new projects, extensions from summer projects, and data sharing projects. The timing and content of these projects will be largely decided by the teachers during the summer workshop to match their curriculum needs.

Three optional graduate credits will be available for the institute; the cost will be \$300 plus a \$45 registration fee. PDP's will be provided at no cost. Summer participants will be required to submit a lesson plan and all accompanying materials by August 20th. Grades for the course or PDP's will be issued shortly after that. Another 3 credits will be available at \$345 for the academic year component.

Application process: An application form and additional information are available at [UMass STEM Digital Summer Institute – Apply By February 3, 2012 \(MS & HS Teachers\)www.umassk12.net/digital](http://www.umassk12.net/digital). Teachers should prepare a narrative statement of how they intend to use the institute materials in their classroom, and include in their application package a recent resume and a letter of support from their school principal or superintendent. The application package can be submitted by email, fax, or US mail.

### **UMass Nanotechnology 2012 Summer Institute – Apply By April 1, 2012 (MS and HS Teachers [Marker])**

Monday to Friday, July 9 - July 13, 2012 at UMass Amherst. Funded by the National Science Foundation. Sponsored by the STEM Education Institute and the Center for Hierarchical Manufacturing. Middle and High School Science, Math, and Technology Teachers. \$75/day stipends (\$375 total), materials, parking, lunches. Housing (new air conditioned dorms) those outside the commuting radius. 3 graduate credits available at reduced cost; free PDP's (Professional Development Points). Ongoing partnerships with UMass Faculty.

Nanotechnology deals with materials on the scale of nanometers. A nanometer is one-millionth of a millimeter, or about 10 atomic diameters. Such materials can have surprising and useful behaviors and properties. Applications of this rapidly growing field include regenerative medicine, fabrics and construction materials of unprecedented strength, ultra-high performance computers and data storage, more efficient solar photovoltaic cells, and much more. Activity in this field cuts across the traditional disciplinary boundaries, and involves chemistry, physics, biology, and engineering.

The UMass Nanotechnology Summer Institute will explore the basic science and engineering concepts of this exciting new field, and will illustrate how they may be integrated into the usual math, science and technology courses in middle schools and high schools. The content and pedagogy will be aligned with the Massachusetts Science and Technology/Engineering Framework. During the institute, participants will begin to develop curriculum units for their own classes. They will complete and implement these in the fall and report on their progress and results online. Three graduate credits will be available for the institute and curriculum unit; the cost will be \$300 plus a \$45 registration fee. PDP's will be available at no cost.

Application process: An application form and additional information are available at [www.umassk12.net/nano](http://www.umassk12.net/nano). Teachers should also prepare a narrative statement of how they intend to use the institute materials in their classroom, and include in their application package a recent resume and a letter of support from their school principal or superintendent. The application package can be submitted by email, fax, or US mail.

Applications are due April 1, 2012. We will acknowledge receipt of your application within no more than one week. If you do not receive this acknowledgement - please contact us At: STEM Ed Institute: [msilver@umassk12.net](mailto:msilver@umassk12.net), 413-545-0734.

For more information: [www.umassk12.net/nano](http://www.umassk12.net/nano), Fax: 413-545-3697, or Center for Hierarchical Manufacturing: [www.umass.edu/chm](http://www.umass.edu/chm)

## Nominations for the New England Institute of Chemists Annual Secondary School Chemistry Teacher Award

Dear Members of the New Hampshire Science Teacher's Association,

I hope your return to the classroom after winter break has been fruitful and exciting for the students! As a professor of Chemical Engineering here at the University of New Hampshire, I know it's you all at the K-12 level that I can thank for our wonderful students.

As such, it gives me great pleasure to invite nominations for the New England Institute of Chemists Annual Secondary School Chemistry Teacher Award. The award recognizes outstanding secondary school chemistry teachers in New England who have also fostered an interest in chemistry through outreach programs and extra-curricular activities.

The candidate must be currently teaching chemistry in a secondary school in one of the six New England States. We are seeking teachers who have encouraged an interest in the field of chemistry through innovative and inspirational teaching, improved the image of chemists and chemistry, promoted extracurricular activities relevant to chemistry, and offered opportunities to students who might otherwise miss the "chemistry" experience.

The awardee will receive a plaque and be honored at the annual NEIC Awards Dinner, which will be held this year at Brandeis University on Thursday, April 26, 2012.

To facilitate the nomination process, the nominator need only mail or e-mail a letter with the candidate's mailing address and telephone number, where he/she heard about the award, and up to one page describing why the candidate is deserving of the award. The NEIC will contact the candidate directly to obtain supporting bibliographic information. **Nominations are requested by March 1, 2012.**

The NEIC Executive Board and its committee chairmen will select, at its discretion, one awardee from each New England state. The NEIC has limited funds available to offset out-of-pocket travel expenses to attend the dinner if the awardee is from outside the Boston area.

Nominations can either be mailed/emailed to myself:

Dr. Jillian Goldfarb, Department of Chemical Engineering, University of New Hampshire, 33 Academic Way, Durham, NH 03824 or [J.Goldfarb@unh.edu](mailto:J.Goldfarb@unh.edu) or to my co-chair:

Dr. Lisa A. Zuccarelli, Department of Chemistry, Salve Regina University, Newport, RI 02840-4192, or sent by e-mail to [lisa.zuccarelli@salve.edu](mailto:lisa.zuccarelli@salve.edu)

Thank you for your time and help identifying a teacher deserving of such a recognition. For more information, you can check out our website at: <http://www.neichemists.org/>

Sincerely,

Jillian Goldfarb

Co-Chair Secondary School Awards Committee, NEIC



### ***Deadline Approaching for Applications:* Free Summer Programs at Perimeter Institute**

Canada's Perimeter Institute for Theoretical Physics (PI), is accepting applications for free summer science camps for students and teachers with a keen interest in modern physics. All expenses are paid for those applying within Canada. For detailed information regarding these camps, please visit [www.issyp.ca](http://www.issyp.ca) and [www.einsteinplus.ca](http://www.einsteinplus.ca).

#### [The International Summer School for Young Physicists \(ISSYP\)](#)

July 12 – July 28, 2012

Application Deadline: March 31, 2012

*"Because of ISSYP, I'm now absolutely sure that I want to take up a career in physics."* - Anna O'Grady, 2011 ISSYP Participant, Canada

#### [EinsteinPlus Workshop for Teachers](#)

July 8 – July 14, 2012

Application Deadline: May 2, 2012

*"PI really does offer the best professional development anywhere."* Sean Jackson, EinsteinPlus Participant, Kitchener, Ontario

Please feel free to share the above information with your colleagues and students through email, blogs, Facebook, websites or newsletters. You may also wish to download and print an ISSYP [poster](#) or EinsteinPlus [poster](#) for your classroom or staff room.

### **What the *Higgs* is happening at CERN?**

Watch a recording of a panel of world leading physicists as they dig into what the latest results from the LHC really mean about the existence of the Higgs boson. [Watch](#)

More information about Perimeter Institute Educational Outreach may be obtained from Laura Flatt at [lflatt@perimeterinstitute.ca](mailto:lflatt@perimeterinstitute.ca) or Marie Strickland at [mstrickland@perimeterinstitute.ca](mailto:mstrickland@perimeterinstitute.ca).

Warm regards,  
Greg Dick, Director of Educational Outreach  
Perimeter Institute for Theoretical Physics  
Twitter: @Greg\_Dick

## **Announcement: 2012 CDC Science Ambassador Workshop**

CDC's Scientific Education and Professional Development Program Office is pleased to announce the 2012 CDC Science Ambassador Workshop — an opportunity for middle and high school science educators to share in a dynamic learning experience. The workshop will be held at CDC headquarters in Atlanta from **July 16 through July 20, 2012**. We are now accepting portfolios for consideration.

**Overview:** CDC Science Ambassador Workshop links public health science to classroom instruction. This is an excellent opportunity for science educators to work closely with CDC scientists during an intensive 5-day workshop to bring new and innovative science and public health materials to the classroom.

This workshop features a variety of sessions on public health topics, and educators will work in teams with CDC scientists to create engaging lesson plans. These lesson plans not only meet National Science Education standards, but also challenge students to think about science in new ways, and to apply science to current health and safety issues. Once the lesson plans have been published on CDC's Science Ambassador Workshop website, educators across the United States and internationally may implement them in their classrooms.

**Eligibility:** To be considered for participation, educators are encouraged to submit the following information to the Science Ambassador Workshop contact at the email address listed below:

- Curriculum vitae or resume
- Two letters of support (principal and science department chair)
- A personal statement explaining why you are interested in the program, your expectations, and how you plan to use the workshop lesson plans (500 word limit)
- Sample of a lesson plan you have developed
- Copy of current teaching certificate

Educators will be responsible for travel and lodging expenses for the workshop. Those who complete and meet the expectations of the workshop will earn three (3) Professional Learning Units. This is a competitive program and space is limited — 16 educators will be selected for participation.

Please share this information, early, with any of your colleagues who may be interested. Deadline for submission is **Friday, March 30, 2012**. Those selected for participation will be notified by **April 27, 2012**.

**Website and Contact Information:** CDC Science Ambassador Workshop website: <http://www.cdc.gov/excite/ScienceAmbassador/ScienceAmbassador.htm>

For more information please contact: Esther Shisoka, MPH, [iwv4@cdc.gov](mailto:iwv4@cdc.gov), (404) 498-6359

**Esther Shisoka, MPH, Science Ambassador Coordinator**, *Centers for Disease Control and Prevention, Career Paths to Public Health Program*, 1600 Clifton Road, NE, Mailstop E-92, Atlanta, GA 30333

**Office: 404-498-6359; Fax: 404-498-6045; Email: [eshisoka@cdc.gov](mailto:eshisoka@cdc.gov)**

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## **Forest For Every Classroom.** *Fri, May 11, 2012 - Sat, May 12, 2012*

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 develop or modify their own units 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.

This approach is proven to increase academic achievement while helping students develop stronger ties to their community, build appreciation for the natural world and a heightened commitment to becoming active citizens.

The FFEC program provides 11 days of professional development over the course of four seasons, including a five-day residential summer session. We begin this session on May 11-12, 2012 and then continue it on August 2,3 and 8-10, 2012. The October 2012 and February 2013 dates are TBD. Most sessions are based at the world-class [Hubbard Brook Experimental Forest](#) in central NH.

For more information see our NEW [FFEC Brochure](#) **Venue:** Hubbard Brook Experimental Forest. **Location:** North Woodstock, NH.

**Registration Deadline:** April 27, 2012; **Registration Fee(s):** Cost: \$400.00

## Joining NHSTA—2011-2012, by Leslie McRobie, 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.

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; \*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. You can now join/renew your NHSTA membership on-line! Go to <http://www.nhsta.net/home/join> You can pay with your credit card or mail a check!

**To join/renew your membership the old way, 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 583, Littleton, NH 03561. The form below is also available on line at: [http://www.nhsta.net/downloads/NHSTA\\_join.pdf](http://www.nhsta.net/downloads/NHSTA_join.pdf)

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 \_\_\_\_\_

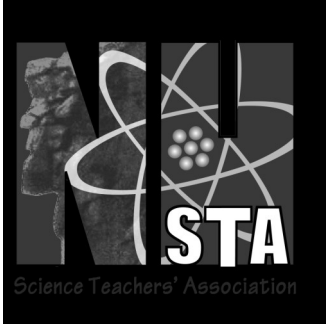
School Phone \_\_\_\_\_ school e-mail \_\_\_\_\_ \*\*

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 583, Littleton, NH 03561



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## NHSTA Newsletter, Very Early Spring 2012 E-edition

*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 Twenty Dollars per year. NHSTA is a volunteer organization run by an elected Executive Board consisting of a president, first vice-president, second vice-president, secretary, treasurer and at-large board member. 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](http://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\*\*](mailto:nhsta@together.net) with “newsletter” in the subject area.