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## CURRENT NEWS

### 1. Wanted: Science Network Leaders Applicants!

Are you eager to collaborate with other Vermont science teachers? Are you interested in up-to-date opportunities in best practices for science instruction? Are you excited to share your teaching successes? If so, being a Network Leader might be just right for you! PK-12 science teachers interested in participating as Network Leaders for the 2009-2010 school year contact Kathy Renfrew (grades PK-4) at [kathy.renfrew@state.vt.us](mailto:kathy.renfrew@state.vt.us) or Gail Hall (grades 5-12) at [gail.hall@state.vt.us](mailto:gail.hall@state.vt.us) for further information.

### 2. Emerging Science Vermont Public TV Series

In September 2008, the *Emerging Science* television series and accompanying *Classroom Connections* Teacher's Guide were sent to the science department at your school. Vermont Public Television, Vermont Escort and the Vermont Department of Education, producers of the series and guide, want to learn about your and your students' experiences with these classroom tools. Even if you never received the materials or weren't aware of them, we'd like to know that, too. Please take a few minutes to complete the online survey.

Teacher Survey: <http://www.uvm.edu/EPSCoR/surveys/index.php?sid=74439>

Student Survey: <http://www.uvm.edu/EPSCoR/surveys/index.php?sid=43481>

Thank you in advance for your time. **Please respond by June 1, 2009.**

### 3. NECAP Science Item Review Committee—Apply Now!!

Applications are available for teachers interested in reviewing NECAP items for the 2010 assessment. The Science Item Review Committee meeting will be held August 11-2 at Attica's Mt. Resort, Crawford Notch, NH. Participants will receive room, board, mileage supplement and \$100 stipend for each day. If interested, contact [gail.hall@state.vt.us](mailto:gail.hall@state.vt.us)

### 4. Hold the Presses—on Those Science Fair Projects!!

Don't discard those 2009 Science Fair Projects!!! The Vermont Education Association is looking for students with outstanding 2009 Science fair projects to display and describe them at the fall VEA conference in Essex. If you have any students who are interested in this opportunity to share their research with Vermont teachers, please contact Ariel at VEA at this email for further information ([adarby@vtnea.org](mailto:adarby@vtnea.org))

## VERMONT DOINGS

### 5. VSTA Café

Join us on **Tuesday, May 5<sup>th</sup>** from **5:30 to 7:30**

*Science Café*

at the Black Door

44 Main St. Montpelier

With Joseph Kiefer from Food Works

**A Garden in Every School**

So what does a school garden have to do with science? How can we help reconnect students of all ages back to the natural rhythms and cycles of nature? How can we use a school garden to help connect students to where their food comes from and what do to with it once we grow it? How can we foster hands-on learning investigations in a school garden that explore-insects, birds, weather, soil building/compost, plant to plant growth, beneficial habitats, etc. etc.?

Children growing up today face a great many challenges such as diet related diseases from rampant food illiteracy and serious nature deficit disorder from too much technology and not enough outdoors time. A garden in every school can be a helpful step to heal this serious situation. Come hear and share ideas about starting or using an existing school/community garden as a hands on classroom for science, nutrition and food education.

#### **6. Natural Resources Agriculture GEs**

Shelburne Farms and the Department of Education are combining forces, to develop the long-awaited GEs to support Standard 7.16—Natural Resources and Agriculture. We need K-4, 5-8 and 9-12 teachers of environmental science and sustainable agriculture to help us with this work. The commitment will be for one day—June 30, 2009

#### **7. Vermont Science Initiative is Right for You!!**

Looking for support with science? The Vermont Science Initiative (VSI) is accepting applications for its 2009-10 professional development opportunities for K-8 teachers. The VSI Tier 1 program develops science teacher leaders in a three year curriculum leading to a Master of Arts in Science Education. This graduate program incorporates coursework in science content, pedagogy, assessment, and leadership.

VSI Tier 2 is a four credit, one year professional development program that focuses on mastering science-related content, acquiring science-teaching skills, and improving general teaching practice. VSI Tier 2 engages teachers in a one-week summer institute in content-based science inquiry and regional meetings during the school year that address best practices in the teaching of science. This program is specifically designed for supervisory unions, districts, schools, or ESA regions.

**For more information and an application visit [www.vtscience.org](http://www.vtscience.org). Questions can be directed to Dr. Liz Dolci, program director at [Elizabeth.Dolci@jsc.edu](mailto:Elizabeth.Dolci@jsc.edu) or Ms. Renee Affolter, VSI Program Associate at [Renee.Affolter@jsc.edu](mailto:Renee.Affolter@jsc.edu)**

### **STEM INFORMATION**

#### **8. Gr 3-8: STEM Curriculum Materials**

Take a look at these Grades 3-8 STEM modules that can be integrated into your instruction of Vermont GEs.

[http://www.currtechintegrations.com/modules\\_elementary\\_middle\\_high\\_school\\_curriculum\\_curriculum.php](http://www.currtechintegrations.com/modules_elementary_middle_high_school_curriculum_curriculum.php)

### **9. Gr 5-8: Discovery Education 3M Young Scientist Challenge**

Discovery Education 3M Young Scientist Challenge is the premier national science competition for students in grades 5 through 8. The Young Scientist Challenge is designed to encourage the exploration of science and innovation among America's youth and to promote the importance of science communication. In 1999, Discovery Communications launched the competition to nurture the next generation of American scientists at a critical age when interest in science begins to decline. <http://www.youngscientistchallenge.com/>

### **10. Gr 9-12: 2009 Design TASC/Aiken Challenge—A Wind Design Project**

#### **The 2009 Design TASC / Aiken Challenge: The Art and Science of Wind Energy!**

Technology And Science Challenge, Kinetic Wind Sculpture, & PSA Video

Wind energy has been used by people for more than 1,000 years to grind grain into flour spin prayer wheels, saw lumber and pump water. The paper that the declaration of independence was written on was made in a Dutch windmill. That machine is still making paper. One hundred years ago, the Vermont landscape was dotted with windmills used by farmers to pump water for homes and livestock. A key energy solutions question facing Vermont today is how does wind energy fit into Vermont's landscape now and into the future. We invite teams of students with interdisciplinary strengths to collaborate to choose from 1-3 projects involving solving a technology and science engineering challenge, building a functioning and aesthetically interesting kinetic sculpture, or creating a Public Service Announcement that addresses Vermont's energy future.

### **DATES & PRIZES**

All three events will be juried for prizes and exhibition by a panel of experts in their fields. Important dates:

May 1, 2009                      Registration application available online at:  
<http://www.cems.uvm.edu/TASC/2009/registertasc2009.htm>

October 15, 2009      Deadline for submitting middle and high school team registrations for one, two or three events

December 5, 2009      UVM TASC/Aiken Challenges Exhibition – UVM Patrick Gym –tennis court areas

- For the video competition, you will be required to bring a DVD
- For the windmill competition you will be required to bring device, description and photos
- For Technology And Science Connection – you will be required to bring your device

**The Design TASC website will have more details soon: [www.cems.uvm.edu/tasc](http://www.cems.uvm.edu/tasc) For more information about the Aiken lectures, please visit [www.uvm.edu/aiken](http://www.uvm.edu/aiken)**

## CLASSROOM MATERIALS

### 11. Gr K-12 Swine Flu Resources

Take a look at these sites for some background and some interesting thoughts about the swine flu.

**Swine Flu is Evolution in Action**—article with pandemic video embedded  
<http://www.livescience.com/health/090428-swine-flu-viral-evolution.html>

**Avian Flu connections to Swine Flu**—article with brief video embedded  
<http://www.newsdesk.umd.edu/scitech/release.cfm?ArticleID=1878>

**Will Your Flu Shot Protect You Against Swine Flu?**—research article  
<http://sciencenow.sciencemag.org/cgi/content/full/2009/428/1?etoc>

**As Swine Flu Spreads, Its Chances to Mutate Increase.**—article  
<http://sciencenow.sciencemag.org/cgi/content/full/2009/429/1>

### 12. Gr K-5: Go Beyond Penguins!

Looking for some new ideas for your ecosystem unit?

Learn about the species and relationships that characterize the tundra in both the Arctic and Antarctica. Discover science and literacy as well as art ideas for teaching about ecosystems and food webs. Download informational text for students to read about a unique relationship between marsh marigolds, caribou, and bot flies. Learn how to help your students organize research and write reports. Check out a list of nonfiction children's books to supplement your unit. <http://beyondpenguins.nsdl.org/>

In Tundra: Life in the Polar Extremes. (Issue 13, April 2009)

<http://beyondpenguins.nsdl.org/issue/index.php?date=April2009>

### 13. Gr 4-8: National Trails Day EVENT!!

**National Trails Day Event**  
**For Vermont students in grades 4-8**  
**Friday, June 5, 2008**  
**9:00am to 1:30 pm**  
**Elmore State Park in Elmore, Vermont**



Pack your lunch and outdoor clothing and join us for a fun filled day of interactive, hands-on activities that celebrates how much we love our trails.

If you are interested in attending, Please complete the registration section at the end of this email message and reply to Rebecca Roy by **Wednesday, May 20<sup>th</sup>** ([rebecca.roy@state.vt.us](mailto:rebecca.roy@state.vt.us))

Workshops will fill up fast, so please register early if you would like to attend. Questions? Please call Rebecca: 802/241-3651

The schedule of the day:

9:00am Registration and opening welcome

9:30-10:15am Workshop A

10:30-11:15am Workshop B

11:30-12:15 pm Workshop C

12:30-1:30 pm Lunch and campfire program

1:30 Depart

**Your students will be able to attend three different workshops (unless you select Mountain Biking, because this one workshop will take up all three slots of time). Please choose your top four choices at the end of this email when you reply. Each workshop can have a maximum of 25 students. Please indicate the number of students you will bring when you register.**

**Workshop choices:**

**1) Getting to Know the Trees**

Explore the forest with Travis and Anthony, Park Educators with the Vermont Youth Conservation Corps at Elmore State Park. Use all of your senses to investigate the forest and the trees around you. Learn about forest systems and the complex ecology of the wooded habitat.

**2) Tracking the Catamount and more.....**

Hike the trails and rove the woods at Elmore State Park to learn about animal adaptations, movement and tracking. We'll talk about how different creatures move along their trails, and look for signs of their presence.

**3) The Science and Art of Trail Maintenance**

Come hike trails in Elmore State Park and learn about trail use as well as drainage and trail maintenance issues. Students will be given the opportunity to capitalize on what they learn by contributing their labor to some actual trail maintenance projects. Prepare and dress for the hike with good footwear (boots) and appropriate wet weather gear should it rain.

**4) Mountain Biking**

Travel through Elmore State Park to learn about mountain bike safety, minimum impact riding, training about environmental issues, and an introduction into

becoming a Trailhead. Please dress appropriately for outdoor fun. Bikes and safety gear will be provided for this workshop. (Note this workshop will take up the entire morning.)

### **5) StoryWalk™**

Come experience exercise and reading through StoryWalk™ with the Vermont Bicycle and Pedestrian Coalition, and take part in a guided literary experience of while being connected to the natural world on foot, walking, running, and hiking from page to page.

### **6) Adventure Expedition**

Join Jason Gibbs, Commissioner of the Vermont Department of Forests, Parks and Recreation on an adventure expedition. Choose your challenges as you push your limits and build trust with your peers.

### **7) Sled Dog Adventures**

Join Rob with his October Siberians and Ken with his Peace Pups for an interactive program on dog sledding. Learn about the technical aspects of sledding and scootering with dogs, and try it out for yourself!

### **8) Green Mountain Club trail workshop**

Explore the trails in Elmore State Park with the Green Mountain Club, and discover the importance of trails to the people of Vermont.

### **9) Vermont Youth Conservation Corps trail workshop**

Join Vermont Youth Conservation Corps crew members and leaders on a trail maintenance project. Prepare and dress for the hike with good footwear (boots) and appropriate wet weather gear should it rain.

### **10) Nature Explorers**

Take time with J. Bradley Materick of the Vermont Youth Conservation Corps to explore the nature in Elmore State Park. Learn some interesting facts about the animals and plants that live around your house while developing keen observation skills.

**Please complete and reply to register:**

**Teacher Name:**

**School:**

**Mailing Address:**

**Email:**

**Phone Number:**

**Number of Students you will be bringing:**

**First Choice Workshop:**

**Second Choice Workshop:**

**Third Choice Workshop:**

**Fourth Choice Workshop:**

**Please dress appropriately for inclement weather. Please pack lunches and snacks.**

The Vermont Agency of Natural Resources 'National Trails Day' events and activities are photographed for educational and publicity purposes (website, newsletters, announcements). By registering your class for this event you are authorizing the Agency to utilize photos for such uses. Photos will not include names, personal information, or information that indicates the physical location of a student at a given time other than attendance at a particular event or participation in an activity. In the case of specific concern you may secure an **opt out form from [rebecca.roy@state.vt.us](mailto:rebecca.roy@state.vt.us)**

#### **14. Anatomy in Clay—Learning Opportunity**

Here is an option to dissection for students 5-12. These models allow students to 'build' circulatory and muscle systems on a plastic skeleton, replicating real systems—a little pricey, but this option has received good reviews on the level of student learning. <http://www.handsandminds.com/>

#### **15. Gr K-8: EPA's SunWise Program**

The EPA site provides activities to teach children (K-8th grade) about the ozone layer, UV radiation, and how to be safe in the sun. Sign up to receive a free activity kit and access to other educational resources.

Interesting Fact:

A UV Index reading of 8 to 10 means very high risk of harm from unprotected sun exposure. Minimize sun exposure during midday hours, from 10 a.m. to 4 p.m. Protect yourself by liberally applying a sunscreen with an SPF of at least 15. Wear protective clothing and sunglasses to protect the eyes <http://www.epa.gov/sunwise/>

#### **16. K-12: Genetics: Tour the Basics**

The University of Utah created this site with funding from the National Institute of Health (NIH). The site uses animations to answer six questions: What is DNA? What are genes? What are chromosomes? What is a protein? What is heredity? What is a trait? Each question is answered through a virtual tour; the tours can be downloaded to run on your computer later without an Internet connection.

<http://learn.genetics.utah.edu/content/begin/tour/>

#### **17. K-12: Climate Change: EPA**

<http://www.epa.gov/climatechange/>

The Environmental Protection Agency (EPA) provides comprehensive, in depth information about climate change. Learn about the science behind it, greenhouse gas emissions, health and environmental effects, regulatory initiatives, U.S. climate policy, economic analyses, and what you can do to reduce it at home, school, and elsewhere.

Interesting Fact:

Changes in the shape of the Earth's orbit (or eccentricity) as well as the Earth's tilt and precession affect the amount of sunlight received on the Earth's surface. These orbital processes—which function in cycles of 100,000 (eccentricity), 41,000 (tilt), and 19,000

to 23,000 (precession) years—are thought to be the most significant drivers of ice ages.

## GRANTS and LEARNING OPPORTUNITIES

### 18. ASCD Outstanding Young Teacher Award

ASCD is seeking young professional educators who

- Educate the whole child, helping to ensure each child is healthy, safe, engaged, supported, and challenged.
- Demonstrate educational leadership in their school, district, and community.
- Show a positive impact on student achievement.
- Illustrate significant contributions to the education community.

Do you know an individual who demonstrates these qualities?

If so, **nominate** an educator today. Nomination deadline is August 1, 2009.

[http://www.ascd.org/programs/Outstanding\\_Young\\_Educator\\_Award/Outstanding\\_Young\\_Educator\\_Award\\_Program.aspx](http://www.ascd.org/programs/Outstanding_Young_Educator_Award/Outstanding_Young_Educator_Award_Program.aspx)

### 19. National Career Pathways Network

Free Professional Development for H.S. Science Teachers--40 HOURS OF HANDS-ON, LAB-BASED PROFESSIONAL DEVELOPMENT TRAINING

Are you interested in free solid state chemistry training (5 days in the summer) for high school science teachers. The ASM Materials Education Foundation is looking for states or communities who are committed to advancing STEM education of students through teacher professional development training. Our curriculum was developed by the Department of Energy and refined by National Science Foundation academic researchers. The ASM Materials Education Foundation is a private, non-profit educational foundation committed to expanding the number of students who pursue STEM careers and college majors.

The curriculum was developed by the Department of Energy and refined by National Science Foundation academic researchers. The ASM Materials Education Foundation is a private, non-profit educational foundation committed to expanding the number of students who pursue STEM careers and college majors.

Contacts:

<http://asmcommunity.asminternational.org/portal/site/www/Foundation/Educators/>

or contact Charles Hayes, Executive Director of the ASM Materials Education Foundation. <http://www.cord.org/ncpn-index.cfm>

## **20. GeoScience Connections—Earth Science Workshop Opportunities**

Looking for professional development made easy? Look no further than GeoScience Connections, a new set of online graduate courses offered by AGI and the Illinois Institute of Technology (IIT).

GeoScience Connections is designed specifically to increase science teachers' knowledge of Earth system science and inquiry-based science instruction. Focusing on interactions among Earth systems - geosphere, biosphere, atmosphere, hydrosphere, cryosphere, and exosphere - courses incorporate hands-on and technology-based teaching techniques.

New courses being offered during Summer 2009 include "Dynamic Earth: Understanding the Processes Affecting Earth's Crust" (June 29-Aug. 14) and "Introduction to Fossils" (July 15-Sept. 2). "Energy Resources" is planned for the Fall 2009 schedule. Each course provides 3 graduate credits from IIT. To learn more, visit

<http://www.k5geosource.org/online/index.html>.

## **21. NAAEE Awards for Environmental Educators**

The North American Association for Environmental Education (NAAEE) recognizes high-quality environmental education in several areas through its annual awards program. You need not be an NAAEE member to enter, and not all of the 10 categories require NAAEE membership to win. *Deadline: 5/22/2009*

<http://www.naaee.org/programs-and-initiatives/awards>

## **22. GEMS Space Science Sequence Workshop**

Funded by NASA, the Central Michigan GEMS Education Center, is presenting a two-day professional development introducing the new GEMS Space Science Sequence on June 16 and 17. The workshop will take place at Central Michigan University in Mt. Pleasant, Michigan.

Participants in the program will share the Space Science Sequence with other teachers. How to share the material will be up to the participant.

Applications will be accepted for 30 teachers. Applications will be accepted beginning March 9 and will close on May 15. You can apply by going to:

<http://gems.cmich.edu/cohort-application.html> Applicants will be notified within 5 days of receipt of application.

If you have questions or need more information, please contact the Central Michigan GEMS Education Center by calling 989-774-1710 or e-mail [gems@cmich.edu](mailto:gems@cmich.edu)

## **TEACHER RESOURCES**

### **23. Engineering for Girls!**

A great resource to raise awareness regarding the exciting opportunities for girls in the diversity of engineering field. <http://www.engineeryourlife.org/>

### **24. International Migratory Bird Day**

International Migratory Bird Day celebrates the incredible journeys of migratory birds between their breeding grounds in North America and their wintering grounds in Mexico, Central, and South America. The event, which takes place on the second Saturday in May each year, encourages bird conservation and increases awareness of birds through hikes, bird watching, information about birds and migration, public events, and other education programs <http://www.birdday.org/>

## 25. NPR Articles

**Antarctic Ice May Melt** <http://www.npr.org/templates/story/story.php?storyId=102066621>  
**Earliest Dinos May Have Been Fuzzy**

<http://www.npr.org/templates/story/story.php?storyId=102056154>

**Extreme Ice** [http://www.npr.org/blogs/pictureshow/2009/03/extreme\\_ice.html?ps=bb1](http://www.npr.org/blogs/pictureshow/2009/03/extreme_ice.html?ps=bb1)

## 26. K-12: Galileo and the International Year of Astronomy

Online Astronomy PD is provided by Annenberg Media. Access these programs online to expand your understanding of the discoveries of Galileo.

“Galileo Galilei is called the Father of Astronomy for his observations of heavenly bodies in the Solar System, which reordered humans' concept of the universe in 1609, and for his discoveries that contributed to the demise of the Earth-centered cosmology of Aristotle and Ptolemy. Star gazers can see what a radical change this was and how it was received 400 years ago in several science resources:

Watch The Mechanical Universe...and Beyond: Program 1, "Introduction"; Program 2, "The Law of Falling Bodies"; and Program 4, "Inertia."  
<http://www.learner.org/resources/series42.html>

Earth Revealed: Program 2, "The Restless Planet," traces the development of astronomical theory.  
<http://www.learner.org/resources/series78.html>

Essential Science for Teachers: Earth and Space Science, Program 8, "The Solar System: Order out of Chaos" probes young students' ideas about Earth's origins and their concept of the Solar System.  
<http://www.learner.org/courses/essential/earthspace/session8/>

## CALENDAR: UPCOMING EVENTS/OPPORTUNITIES/DEADLINES

### 2009

#### 2009: The Year of Science

<http://www.yearofscience2009.org>

**May 5:** VSTA Cafe

**May 15:** Deadline to apply for GEMS Space Science Sequence Workshop at CMU

<http://gems.cmich.edu/cohort-application.html>

**May 20:** Deadline for entries in the Discovery Education 3M Young Scientist Challenge

<http://www.youngscientistchallenge.com/>

**May 20:** Deadline for registering your students to participate in National Trails Day Event

[rebecca.roy@state.vt.us](mailto:rebecca.roy@state.vt.us)

**June 30:** Natural Resources and Agriculture GE Development [gail.hall@state.vt.us](mailto:gail.hall@state.vt.us)