

Warm enough – cold enough for you???

Strange series of weather events over the end of 2006 and the beginning of 2007! And the groundhog did not see his shadow (in PA). Can we believe spring will arrive early?



Place Your Bets

!

Will spring bring
golden forsythia, daffodils, crocus and no more freezes???

Climate Experts Worry as 2006 Is Hottest Year on Record in U.S.

Exerpt from: Marc Kaufman
Washington Post Staff Writer
Wednesday, January 10, 2007; A01

Last year was the warmest in the continental United States in the past 112 years -- capping a nine-year warming streak "unprecedented in the historical record" that was

driven in part by the burning of fossil fuels, the government reported. According to the government's National Climatic Data Center, the record-breaking warmth -- which caused daffodils and cherry trees to bloom throughout the East on New Year's Day -- was the result of both unusual regional weather patterns and the long-term effects of the buildup of carbon dioxide in the atmosphere.

Late December's springlike temperatures in the eastern two-thirds of the country made it the fourth-warmest December on record in the United States and contributed greatly to the record high for the year. Several Northern cities were unusually warm -- with Boston 8 degrees above average and Minneapolis-St. Paul 17 degrees above average for the last three weeks of the month.

"People should be concerned about what we are doing to the climate," said Jay Lawrimore, chief of the climate monitoring branch of the National Oceanic and Atmospheric Administration. "Burning of fossil fuels is causing an increase in greenhouse gases, and there's a broad scientific consensus that is producing climate change." The center said there are indications that the rate at which global temperatures are rising is speeding up.

Average temperatures nationwide in 2006 were 2.2 degrees Fahrenheit higher than the mean temperatures nationwide for the 20th century, the agency said. It reported that seven months in 2006 were much warmer than average, and that last month was the fourth-warmest December on record. Average temperatures for all 48 contiguous states were above or well above average, and New Jersey logged its hottest temperatures

Climate experts generally do not make much of temperature fluctuations over one or two years, but Lawrimore said the record 2006 temperatures were part of a long and worrisome trend. For instance, NOAA said, the past nine years have all been among the 25 warmest years on record for the continental United States. "No one should be surprised that 2006 is the hottest year on record for the U.S.," said Brenda Ekwurzel, a climate scientist with the Union of Concerned Scientists, a public interest group. "When you look at temperatures across the globe, every single year since 1993 has been in the top 20 warmest years on record."

Lawrimore said other NOAA research has found that the rate of temperature increase has been significantly greater in the past 30 years than at any time since the government started collecting national temperature data in 1895. Globally, 2005 was the hottest year on record, Lawrimore said, and 2006 was slightly cooler.

Advocates for more action to control carbon dioxide emissions also voiced concern. The burning of oil and other fossil fuels releases carbon dioxide, which rises, blankets the Earth and traps heat. Climate scientists report that there has not been this much carbon dioxide in the atmosphere in the past 650,000 years.

The Bush administration has rejected proposals to cap carbon dioxide emissions or impose carbon taxes as a way to limit global warming. Lawrimore said he believes the

problem could and should be addressed by developing new technologies for powering vehicles and industry.

But is it Global warming?

The Intergovernmental Panel on Climate Change (IPCC) February report (the first of four to be released this year) stated that the concentrations of greenhouse gases in the planet's atmosphere "have increased markedly as a result of human activities since 1750", mainly from the use of fossil fuels such as oil, gas and coal, and because of agriculture.

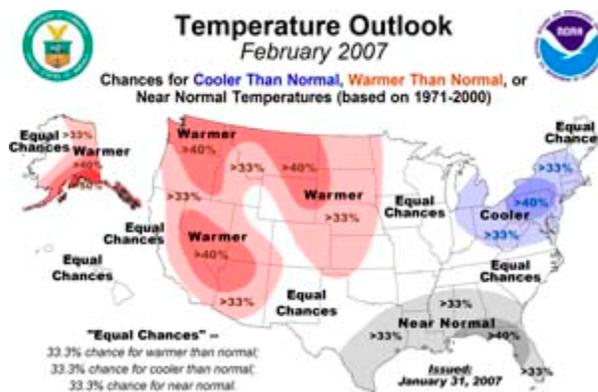
The panel report was based on years of scientist's peer-reviewed research. Government officials edited it looking for unanimous approval by world governments. The IPCC report represented hundreds of scientists and 113 governments that unanimously portray global warming as an existing and worsening threat.

There is natural climate variability. But by 1995 that possibility had all but vanished. Accumulated abundance evidence included: retreat of the Arctic sea in recent summers, accelerated melting on the Greenland and Antarctic ice caps, and virtual collapse in mountain glaciers around the globe. Plants and animals have changed their ranges. There are shifts in atmospheric and oceanic circulations. Globally the planet is the warmest it has been in thousands of years. (See the Doomsday Clock) Scientists feel these observed changes cannot be explained by invoking natural causes.

How about the COLD now??

Some experts hark back to the lessening of the 2006 El Nino - which resulted in the mild winter in our area at least. So there are definitely special weather events not significantly related to global warming and climate change.

NOAA's FEBRUARY OUTLOOK BRINGS ON THE CHILL Weakening El Niño To Exert Little Influence



Feb. 1, 2007 — Following an overall mild December and most of January, the current chill over much of the U.S. will persist through early February, according to seasonal forecasters at the [NOAA Climate Prediction Center](#). Below-normal temperatures are expected to dominate the central and eastern part of the country through early February with more moderate temperatures projected for the final weeks of the winter season. Climatologically, winter is comprised of

the months of December, January and February. **(Click NOAA image for larger view of February 2007 temperature outlook. [Click here](#) for high resolution version. Please credit "NOAA.")**

Signs of things to come

Last month, British meteorologists said 2007 will likely be one of the hottest years on record because of El Nino and global warming patterns. Experts say warmer temperatures can spark weather disasters around the world, such as droughts and flooding. (Florida severe storm)

A new report by the Intergovernmental Panel on Climate Change says global warming also produces stronger hurricanes, especially in the Atlantic Ocean.

22nd IASTS Conference



The International Association of Science-Technology and Society met February 1-3, 2007 in Baltimore, MD for the 22nd annual conference.

IASTS is concerned with the interrelationships among science, technology, society and the biosphere (STSB), with a particular emphasis on the impact of science and technology on society and ecosystems. Interested parties may include researchers, educators, scientists, engineers, ethicists, environmentalists, policy analysts, and business leaders among others.

Each year there is an annual meeting and conference centering on a theme relevant to STSB. Our conference provides an opportunity to meet and discuss topics of interest to those committed to multidisciplinary thinking, research and actions addressing issues of ethical, environmental, scientific and societal interest

Once again a broad representation of scientists, researchers, educators, and business representatives interacted and enjoyed a wide range of presentations including the areas of: Environment; Nuclear proliferation; Law: promoter, regulator and servant of technology?; The risky business of enterprising subjects; energy alternatives; Science and education; Nanotechnology; Environmental crisis and authoritarian “solutions”; Technical infrastructure; Politics of science and technology; expert knowledge; Locating environmental thinking and action in rural life; The emerging near space gas trade economy; Health issues (Chaired by Jane Konrad); Technology forecasting as a methodological challenge; Risky technologies, technology and culture; Fossil fuel

transportation; Computers and privacy; Issues in environmental and natural resources; Social implications of space technology; Media and communication.

This broad range of topic areas offered something for everyone – and often the sessions were repeated in focus (but with different presentations) to allow for greater interaction and exchange of ideas.

Connected to the conference was the initiation of new members into Epsilon Pi Tau, the International Honor Society for Professions in Technology, Jerry Olson, Executive Director presiding; Instruction was carried out by Van Hughes (PPS), Robert Yager (University of Iowa – Science Education) and John Wilkes (Worcester Polytechnic Institute). Jane Konrad was one of those initiated into this Society.

DIRECTIONS

Feb. 18-24, 2007, Engineers Week, promotes recognition among parents, teachers and students of the importance of a technical education and a high level of math, science, and technology literacy, and motivates youths to pursue engineering careers in order to provide a diverse, vigorous and informed engineering workforce.

What's New on Discoverengineering...



Build a race car from handyman tools! Design a tent you can wear! Make a machine that makes peanut butter and jelly sandwiches! A new television series shows eight teenagers working with real engineers to design and build fantastic machines. The show premieres during Engineers Week in February! To learn more, click on the Design Squad button.

National Engineers Week and WGBH, the producers of [ZOOM™](#), are collaborating to create ZOOM INTO ENGINEERING. A combination of ZOOM's fun, kid-tested activities with the opportunity to interact with real engineers, ZOOM INTO ENGINEERING takes kids in grades 2 – 6 to a new level—learning from role models how ZOOM's science activities apply in the real world. ZOOM INTO ENGINEERING [training and outreach events](#) are proliferating all over the country.

Providing children with positive images of engineers—professionals who use science and technology to solve problems—has never been more critical. During the last one hundred years a technological revolution has improved the quality of our lives and engineers have led this revolution. Yet, children and adults do not understand the engineer's role in society or, more simply, what an engineer does.

Solar Week beginning February 26th -March 2nd.

This years' Sun Earth Day provides an opportunity to hear from some of NASA's scientists about the missions that study the Sun. Featured is an activity called Space Weather Action Centers, where students and museums can use NASA data to track a solar storm and then create their own Space Weather Alert.

A special web cast can be seen at the following URL

<http://nasadln.nmsu.edu/dln/content/catalog/details/?cid=558>

All of the information is there. The topic deals with the impact of the Sun on the solar system- experts will share information about Earth, Moon, Mars and Jupiter and you can join a classroom that has their own Space Weather Action Center.

NASA will archive the web cast and make it available on the SED website by March 2nd.

Be sure to take part in this year's Solar Week - ideal for students studying the solar system, the stars, astronomy in general. It's also for kids wondering what it's like being a scientist, and possible career choices. Participation makes for a fun computer lab activity as well, so let your imaginations fly! Go to <http://www.solarweek.org> for more information.

**Spring 2007 Professional Development Opportunity for Science and Math Teachers--
The Digital Libraries go to School**

Workshop series continues this spring in upstate New York at the following times and places:

Session I: February 1, 2007, 5-8

pm, SUNY Cortland campus, Cortland, NY

Session I: February 3, 2007,

8:30-11:30 am, OCM BOCES training center, Syracuse, NY

Session II: March 8, 2007, 5-8 pm,

SUNY Cortland campus, Cortland, NY

Session II: March 10, 2007,

8:30-11:30 am, OCM BOCES training center, Syracuse, NY

Register soon! Contact: Sarah

Giersch, sgiersch@nsdl.ucar.edu. For a schedule of spring workshops conducted in Utah, contact Andrew Walker: andy.walker@usu.edu.

Tuesday, February 13

5:30 - 7 pm

Rangos 1 & 2, University Center

Carnegie Mellon University

The Carnegie Mellon Steinbrenner Institute for the Environment will present Jerome Osentowski, Director of the Central Rocky Mountain Permaculture Institute, to speak on the subject of "Creating Livelihoods from Greenhouses and Forest Gardens" as part of the Spring 2007 Environmental Lecture Series. The University Lecture Series was developed and nurtured by Dr. Indira Nair, Vice Provost of Education and EPP Faculty.

ESSAY CONTEST -Sponsored by
**PENNSYLVANIA SOCIETY FOR BIOMEDICAL RESEARCH -OPEN TO ALL
PENNSYLVANIA STUDENTS IN GRADES 9 - 12 \$2,050 in Prizes - 6 Finalists**

PURPOSE: To recognize students who demonstrate a superior understanding of the appropriate use of animals in biomedical research and who can artfully communicate that understanding in writing.

Rules and Regulations:

1. The entry shall consist of an essay in standard English, typed on 8 1/2" x 11" paper, not exceeding 750 words or three double-spaced pages on the topic: "Why Are Animals Used in Biomedical Research?"
2. Page margins should be one inch on all sides.
3. A cover sheet must be submitted with the essay containing:
(a) student's name and grade (b) home address (c) home telephone number
(d) name of school (e) school address (f) school telephone number
(g) teacher's name and class (h) name and address of local newspaper
4. The student's name should appear on the cover page only.
5. To enter, send three (3) copies of your essay to Pennsylvania Society for Biomedical Research, C/O Essay Contest, P.O. Box 1163, Camp Hill, PA 17001-1163.
6. **ENTRIES MUST BE POSTMARKED NO LATER THAN MAR. 12, 2007.**
7. All entries will be judged on originality, creativity, command of the English language and an understanding of basic reasons animals are used in research.
8. All entries become the property of the PA Society for Biomedical Research.
9. Previous first place winners are not eligible.

AWARDS

1. Two finalists, Grand Award Essayists, will receive \$500 awards.
2. Three finalists will each receive a \$250 award.
3. One finalist will be awarded \$300 in the category of Creative Writing.
4. Winners will be notified by June 1, 2007. Upon request, the school office will receive a booklet containing a list of participating schools and the winning essays.

Background reference material for preparing an essay may be obtained by phoning, emailing, or writing to: High School Essay Contest, PA Society for Biomedical Research, PO Box 1163, Camp Hill, PA 17001-1163
Telephone: 717-731-3558 email: psbr@psbr.org (Please specify the High School Essay Contest)

Reference material will be mailed out after January 8, 2007. Reference material will be sent out by US Mail, so please provide a return mailing address. Requests sent by US Mail MUST have a return address on the outside of the envelope.

ESSAY CONTEST – sponsored by
**PENNSYLVANIA SOCIETY FOR BIOMEDICAL RESEARCH - OPEN TO ALL
PENNSYLVANIA 7th and 8th GRADE STUDENTS**

3 WINNERS - \$600 in Prizes

PURPOSE: To recognize students who demonstrate a superior understanding of bioscience research and who can artfully communicate that understanding in writing.

Rules and Regulations

1. The entry shall consist of an essay in standard English, typed using a standard font on 8 1/2" x 11" paper, not exceeding 500 words or two double-spaced pages on the topic:

"What's the Point of Bioscience Research???"

2. Page margins should be one inch on all sides.

3. A cover sheet must be submitted with the essay containing:

(a) student's name and grade (b) home address (c) home telephone number

(d) name of school (e) school address (f) school telephone number

(g) teacher's name and class (h) name and address of local newspaper

4. The student's name should appear on the cover page only.

5. To enter, send three (3) copies of your essay to PA Society for Biomedical Research, C/O 7-8th Grade Essay, P.O. Box 1163, Camp Hill, PA 17001-1163.

6. ENTRIES MUST BE POSTMARKED NO LATER THAN MARCH 12, 2007.

7. All entries will be judged on originality, creativity, command of the English language and an understanding of basic reasons for bioscience research.

8. All entries become the property of the PA Society for Biomedical Research.

9. Previous first place winners are not eligible.

FIRST place will receive \$300

SECOND place will receive a \$200

THIRD place will be awarded \$100

To have your students participate, contact PSBR and request 7th and 8th grade essay materials. We will provide the following free materials to help your students write their essays:

- A teacher copy of the booklet, "What's the Point of Bioscience Research?"
- A master copy of the booklet that can be used to make student copies.

ADDRESS: 7th & 8th Grade Essay Contest, PA Society for Biomedical Research, PO Box 1163, Camp Hill, PA 17001-1163.

Telephone: 717-731-3558 email: psbr@psbr.org (Please specify the 7th & 8th Grade Essay Contest.) Reference material will be mailed out after January 8, 2007.

Reference material will be sent out by US Mail, so please provide a return mailing address. *Requests sent by US Mail must have a return address on the outside of the envelope.

Also, visit the PSBR web site at www.psbr.org for additional information and resources: Please feel free to contact me for more information about PSBR or these essay competitions. I would be more than happy to answer inquiries from your administration, fellow teachers, or students. Participating schools will be notified by mail of the names of the winners and their schools before the end of the school year.

John S. Ellis, Ph.D. Executive Director, PSBR, psbr@psbr.org

April 13-15 PAEE 2007 Conference; "No Child Left Inside". Genetti's Hotel & Conference Center, Wilkes-Barre, Pa. How to nurture a future generation of

environmentally literate stewards by rekindling their interest in the outdoors.. See the website: www.paee.net

April 21 Frick Environmental Center – Second Annual earth Day celebration. 10:00am-4:00pm. Community and family oriented event focuses on restoration and nature exploration activities. Contact Kathryn Hunninen; 412/422-7638; kmhunninen@yahoo.com

April 23 – 2007 Tripartite Symposium

“Realities and Challenges of Global warming/Global Dimming”

Sponsored by the Society for Analytical Chemists of Pittsburgh (SACP), the Spectroscopy Society of Pittsburgh (SSP), and the American Chemical Society (ACS) – Pittsburgh Section; Eddy Theatre, Chatham College, Pittsburgh, PA Free Valet parking off of Murray Hill Avenue. \$15.00 (\$5.00 for full time student). Registration 11:30am-1:50pm; Showing “An Inconvenient Truth” 12:00-1:35pm; Speakers and a dinner follow after the symposium. Make check payable to SACP and send to: 300 Penn Center Blvd., Suite 332, Pittsburgh, PA 15235. ATTN. Tripartite Symposium

April 25 - The American Society of Human Genetics is sponsoring the second Annual DNA Day Essay contest. Last year the teachers of the winning students were able to equip their classrooms with brand new electrophoresis equipment that they selected themselves. National DNA Day is held every April 25th. There are multiple different opportunities to get involved in... the essay contest is just one. We encourage teachers around the country to consider adding this as an “assignment” during their genetics unit and then submitting their best essays to the contest. Three winning students for each essay are selected each year and the teacher of the “First Prize” winners receive \$2000 to spend on classroom science equipment. Applied Biosystems is also sponsoring cash awards for 6 student winners and up to 5 stipends for students chosen to work in a science laboratory near their home during summer 2007.

Many of you are teaching genetics now so we thought we would send the word out asap so you could consider this opportunity for your students.

For all the information check out the website:

http://www.genednet.org/pages/k12_dnaday.shtml

There are two essay questions this year:

1. If you could be a human genetics researcher, what would you study and why?
2. In what ways will knowledge of genetics and genomics make changes to health and health care in the US Possible?

Please make sure to read the rules:

http://www.genednet.org/pages/k12_dnaday-rules.shtml

If you have any questions, do not hesitate to contact:

Kenna Mills Shaw, PhD
Director of Education
American Society of Human Genetics
9650 Rockville Pike
Bethesda, MD 20814
phone: 301-634-7342 fax: 301-634-7079
kshaw@ashg.org

NASA is committed to inspiring the next generation of explorers.

One of the most exciting ways NASA accomplishes this is through question-and-answer sessions between crewmembers on-board the International Space Station (ISS) and students. These sessions are referred to as Live, In-flight Education Downlinks.

Similar to a videoconference, students pose questions related to classroom studies and watch from their school or museum/science center as crewmembers discuss and demonstrate science, technology, engineering, and mathematical (STEM) concepts in ways that are unique to the environment of space. Education downlinks are approximately 20 minutes in length and are part of a well-planned education experience. Video from a recent school contact is available at http://www.nasa.gov/audience/foreducators/5-8/features/F_At_the_Crossroads_of_Discovery.html

To participate, educational institutions submit a proposal to NASA (jsc-nseo@mail.nasa.gov). Proposals are evaluated and ranked according to their educational merit and proposed plan for integration into student curricula. The schedule for proposal submission, review, and acceptance is governed by the ISS increment schedule. **The next Live In-flight Education Downlink selection cycle will be for Expedition 15 (mid-April thru mid-October, 2007). The proposal deadline is February 13, 2007.** The number of downlinks per increment is dependent upon mission requirements and crew time. Interested host organizations should contact the Teaching From Space Office at 281.244.2320 for additional information including the current proposal form and a copy of "Live In-Flight Education Program: A Planning Guide."

International Heliophysical Year – 2007 <http://ihy2007.org>

PRCST WORKSHOPS

PLAN FOR SUN-EARTH DAY 2007
And Join us for an exciting GLOBE workshop.

EARTH AS A SYSTEM: SEASONS & PHENOLOGY
A GLOBE Learning Investigation

April 18, 2007

Five Act 48 Hours

Free NASA Resources

Conducted by the PA NASA Educator Center (ERC)

Sponsored by the PA Space Grant Consortium

Presented by Goddard SFC AESP, GLOBE teachers, PA GLOBE Partner

Understanding Earth as a System (Earth Systems Science) requires a quantitative exploration of the connection among all parts (atmosphere, hydrosphere, lithosphere, and biosphere) of the system. These are measured on local, regional and global spatial scales.

Measurements of the GLOBE Program provide students with the means to begin this exploration for themselves. The processes comprising the global environment are interconnected.

Phenology is the study of living organisms' response to seasonal changes in their environment. Join us as we explore some of the GLOBE Phenology Protocols. Aligned with Academic Standards.

Preliminary Program

8:30am	Registration and welcome
8:45am	GLOBE program overview: Earth Systems Science, The BIG Picture, GPS-site selection, Seasons & Phenology: "The Private Universe" CD and Using a Camera in the Classroom.
9:00am	"Budburst" Protocol Site determination, tree identification/selection, Max-Min Temp.
10:15am	BREAK
10:30am	"Budburst" Protocol cont. Data collection/entry
NOON	Lunch
1:00pm	"Green-Up" Protocol: monitoring the growth of tree leaves, infrared heat Detection
2:00pm	Earth as a "closed system". Construction of a closed system
2:30pm	Connection to SUN-EARTH Day
3:00pm	Summary, evaluation, resources, prizes!

Held at the Regional Learning Alliance and facilitated by the Pittsburgh Regional Center for Science Teachers (PRCST) Make checks payable to the University of Pittsburgh and send with registration form to:

Jane Konrad, PRCST, 5528 WWPB, University of Pittsburgh, Pittsburgh, PA 15260

Fee \$25.00

UNDERSTANDING EARTH'S NATURAL WATERS:

A GLOBE “Hydrology Investigation” Protocol workshop

A Hands-on workshop June 21, 2007

Five Act 48 Hours

This all day workshop will be held aboard the *Pittsburgh Voyager*.
The workshop is conducted by the PA NASA Educator Resource Center (ERC)
and sponsored by the Pennsylvania NASA Space Grant Consortium.

We ARE water – 50-90% of the weight of all living organisms! GLOBE Hydrology Investigations can help us make more intelligent decisions about how we use, manage, and enjoy this valuable resource.

- 8:30 am Registration and Coffee
- 8:45 am Welcome Aboard/Introductions
- 9:00 am **GLOBE HYDROLOGY INVESTIGATION ACTIVITIES**
GLOBE program hands-on, inquiry-based activities, conducted by
NASA-trained GLOBE presenters.
- 10:15 am BREAK
- 10:30 am **GLOBE ACTIVITIES /Measurements**
- NOON LUNCH.
- 1:45 pm **GLOBE ACTIVITIES** - Continued Globe measurements and
hands-on activities.
- 3:00 pm **Summary-evaluations-PRIZES**

All teachers will receive GLOBE supplies along with related NASA resources. Early registration is recommended since space is limited. There is a small registration fee of \$25. To register call or write Jane Konrad at the Pittsburgh Regional Center for Science Teachers (PRCST) at 412/648-7315; fax 412/648-7081; email konrad@pitt.edu

Of all Earth’s water, only about 3 mL out of 100 L is fresh water we can consume. Sampling surface water can help students gain inquiry abilities and understand a number of concepts. Included are science/environment and geography concepts derived from National Standards. Alignment with Pennsylvania standards is included.

The Teacher-to-Teacher Initiative is pleased to announce its 2007 Summer Workshop Schedule. Regional workshops will be held in 22 cities across the United States to provide free high-quality professional development opportunities for teachers. Prominent

educators will share best practices in all grade levels and content areas. Agendas will be posted during January and February and registration begins on April 8, 2007. This year's co-hosts include the National Park Service, NASA, Microsoft, Siemens, EMC, AMD, Symantec, University of Nevada, Motorola, General Motors, and Target. Click to review a full listing of the 2007 Summer Workshop Schedule:

<https://www.t2tweb.us/Workshops/Schedule.asp>

2007 Hooked on Hydroponics Awards ~ Deadline: September 30, 2007

Classroom hydroponics offers eager students loads of opportunities to explore concepts across the curriculum, from biology to economics. **Generous sponsors are giving more schools the opportunity to enjoy these benefits by doubling the number of award packages for 2007 to 24!** Winning programs receive a compact hydroponics package that includes everything required to grow plants successfully indoors. This award is sponsored by the [The Grow Store](#) in conjunction with the [Progressive Gardening Trade Association](#). To learn more and download an application, [visit here](#).

Spring 2007 Teacher Workshops

Sponsored by DEP and come to you at NO COST.

All workshops will be held at the CCI Center, 64 S. 14th Street, Pittsburgh, PA 15203 SPACE IS LIMITED!!!!

To Register Contact Kostoula Vallianos at 412-431-4449 ext. 238 or Kostoulav@ccicenter.org

Registration deadlines are one week prior to the workshop.

Exploring Watersheds

Saturday April 14, 2007 Exploring Watersheds - [9:30am - 3:00pm] - 5 Act 48 hours. Introduction

to watersheds. This insightful workshop explores the parts of a watershed and their

functions and roles in the system. Participants are provided with tools to bring watersheds

to life in the classroom, using hands-on activities. Project WET activities are featured!

Checking Out Nonpoint Source Pollution

Saturday May 12, 2007 Checking Out Nonpoint Source Pollution: History, Policies, and

Best Management Practices [9:30am - 3:00pm]- 5 Act 48 hours. Nonpoint source pollution is the biggest threat to our waterways. It comes from a lot of sources and lots of locations.

As water moves over land it carries with it “stuff” that ends up polluting our waterways. Many of our everyday activities contribute to this problem. This workshop provides teachers indepth information about the issue. Learn about the environmental history of nonpoint source pollution in southwest PA, current problems surrounding the issue, the laws that are in place,

Intro to GIS and GPS: Mapping Watersheds

Saturday June 2, 2007 Intro to GIS and GPS: Classroom Applications for Mapping Watersheds

- [9:30am - 4:00 pm] - 6 Act 48 hours. Ever wonder what GIS and GPS are? Maybe

you know, but would like to be able to use this new technology with your students. This exciting workshop will introduce you to the world of Geographic Information Systems and Global Positioning Systems. Participants will learn the basics behind how they work and gain practical knowledge in how to use this technology in the classroom and with your Earth Force projects.

Recommended for Teachers who teach grades 4-12.

DATABASE

NSDL Whiteboard Report,

research news and notes from the National Science, Technology, Mathematics Education Digital Library (<http://nsdl.org>) funded by the National Science Foundation, is published bi-weekly and includes information from NSDL projects and programs nationwide. TO SUBSCRIBE/UNSUBSCRIBE visit <http://nsdl.org/publications/index.php?pager=signup>.

Video Journey into Nanotechnology

National Cancer Institute - part of NIH - has formed the Alliance for Nanotechnology in Cancer. Resources include a short video available in two formats and a text version. Go to http://nano.cancer.gov/resource_center/video_journey.asp

Inside the Cell

The National Institute of General Medical Sciences – NIH - has published a revised version of its science education publication “Inside the Cell”. To read online or download a PDF visit <http://publications.nigms.nih.gov/insidethecell>

Make Your Calories Count - FDA’s center for Food Safety and Applied Nutrition has an interactive learning guide where *Lableman* guides users through exercises that explore the relationship between serving sizes and calories. Focus is on two nutrients to limit – fat and sodium – and two to consume in adequate amounts – fiber and calcium. Download from www.cfsan.fda.gov/labelman

SHODOR Interactivate Courseware

Featured in Education World.com Awards - Shodor, NSDL's Computational Science Pathway, received an A+ .(“This site can't be beat! Perfect in its category.”) in a January 2007 Education World site review for it's “easy to use collection of science and math lessons for grades 3-5, 6-8, and 9-12”. This well organized site can be navigated in a number of ways. From the front page users can click on the graphic links for learners or instructors within the main area of the page or use the pull down menus. www.shodor.org

Sustainable Pittsburgh,

For information on becoming a Member please visit the website <http://www.sustainablepittsburgh.org>

3E Links is sent as a service to Sustainable Pittsburgh Members and interested parties and is being distributed for informational purposes. Information is provided by the organizing institution or one of its representatives. Our distribution does not imply endorsement.

Click here http://www.sustainablepittsburgh.org/NewFrontPage/3E_Links_Archive.html to access the 3E Links Archive. Use "Search" on SP's homepage for a great resource.

eSchool News Online is fast, free and updated daily! See what's happening today...2007 is the year to get all your news and resources online!

Get a video recap of all the month's top news with "TechWatch". Go to <http://www.eschoolnews.com/video/>

* Read about the upcoming FETC Conference as well as get

breaking news coverage on all the latest education technology conferences inside the Conference Information Center. Go to <http://www.eschoolnews.com/cic/>

- Visit the daily updated Educator Resource Center where you'll find specific resource centers on Building Digital Communications Skills, Differentiated Learning, Suspension Alternatives That Work, Creative Video Solutions, Tech Tutoring, 21st Century Learning, Schools Interoperability Framework (SIF), eRate Resources, Web Sites That Work, Controlling User-Generated Security Threats, Whole-Class Learning, and more. Go to <http://www.eschoolnews.com/erc/>
- Register Now for your FREE PDF subscription to Classroom News. Each issue of Classroom News is written just for teachers and explores new curriculum and assessment tools, the latest professional development resources, case studies on how schools are using multimedia in the classroom, emerging technologies and best practices and much more.

Go to <https://www.eschoolnews.com/cn>

Awesome Clipart for Educators

Awesome Clipart for Educators offers educators FREE clipart, backgrounds, fonts, icons, worksheets, wallpaper and more. See how easy searching for clipart can be! http://www.1105info.com/xciabe_gpqlqpps.html

Agriculture Education Resource

See <http://www.marketplaceforthemind.state.pa.us/m4m/lib/m4m/homepage-flash.asp> for multiple resources to support k-12 teachers. Agriculture is a great connector of different subjects and is one of the state standards. Other resources are available at this site to help in other k-12 projects as well.

=====

Dissection Alternative to Cat

Are you looking for an alternative to cat dissection? NASCO invites you to consider mink as an excellent alternative. Mink are readily available, cost 70% less, have similar body structure, and have been degreased and descented. We also offer a teacher-created spiral-bound dissection guide at a very low price. Please click on the link below to learn more about our special pricing on mink and mink dissection guides.

http://www.enasco.com/dissection/Static.do?page=sci_promo

Vitamin C is Good For Plastics Too

A new breakthrough that relies on common vitamin C is poised to dramatically improve how plastics are made by assembling molecular chains with less waste. Manufacturers tailor smaller molecules to meet specific needs by gluing them together into long, potentially complex polymers, or plastics. For some plastics, the small building-block molecules do not always stick together, so researchers have devised creative ways to coax certain chemicals into chains -- although with certain costs, such as added catalysts that become unwanted waste. Researchers from Carnegie Mellon University in Pittsburgh, PA, have discovered that adding vitamin C, glucose, or other electron-absorbing agents to a powerful plastic manufacturing method can reduce the needed copper catalyst by 1000 times. Because the catalyst has to be removed from the end products, less of the metal means far less waste and drastically reduced costs.

[Find out more...](#)

<http://marketplace.publicradio.org/shows/2006/11/23/PM200611234.html>

Gardening With Kids Resource Highlight: Ecological Calendar

This visually rich, detailed, and informative calendar depicts ongoing transformations in nature through the seasons. The longer you look, the more you'll discover! Four separate poster panels representing the seasons show shifting biological behavior of flora and fauna, weather observations, star charts, moon phases, a 2007 calendar, tide charts, and more. Also included is a guide to help you make the most of the bountiful information.

Use it as a springboard to create your own phenological record of the school and gardening year. For more details and to order, [visit here](#).

Lesson Plans from The Huntington

The Huntington Library, Art Collections, and Botanical Gardens is a collections-based research and educational institution in San Marino, CA. Click for their online collection of free lesson plans. <http://www.huntington.org/Education/less-bot.html>

Classroom Maps

Looking for maps to help illustrate your lessons? The National Atlas Web site (allows you free access to create maps and illustrate them with various "layers" of data from various categories (such as agriculture, geology, topography, and biology). Try it out at the [National Atlas Web site](#).

SCIENCE SNIPPETS

Tick Tock: Atomic Scientists Move Hands of Doomsday Clock Closer to Midnight

The Bulletin of the Atomic Scientists (BAS) is moving the minute hand of the Doomsday Clock, created in 1947, two minutes closer to midnight. It is now 5 minutes to midnight. Reflecting global failures to solve the problems

posed by nuclear weapons and the climate crisis, the decision by the BAS Board of Directors was made in consultation with the Bulletin's Board of Sponsors, which includes 18 Nobel Laureates.

Green Building takes off

The report shows that green building has matured from its early days as an environmental 'crusade' into a well established construction sector with a strong business backing. The shift from an environmentally principled approach to a view of green building as a lucrative financial opportunity is the focus of the paper.

More <http://www.globe-net.ca/news/index.cfm?type=2&newsID=2536>

Congress to reconsider caps on carbon

Their bill is intended to cut the heat-trapping emissions by 2 percent a year. It is sure to produce a contentious debate on climate control in the new Democratic-run Congress and draw strong opposition from the White industry.

More <http://www.msnbc.msn.com/id/16593468/from/ET/>

A World First: CA Governor to order new standard to reduce carbon content of motor fuels. California will create the world's first global warming pollution standard for transportation fuels, ratcheting down fuel carbon content 10 percent by 2020 under a plan put forward by Gov. Arnold Schwarzenegger in his State of the State address plans to issue an executive order requiring Resources Board to draft rules for a new carbon fuel standard, which would take effect in January 2010. His authority to do that comes from landmark legislation signed last year aimed at reducing greenhouse gas emissions across a wide spectrum of industries.

More <http://www.sfgate.com/cgi-bin/article.cgi?file=/c/a/2007/01/10/MNGMPNG4LD1.DTL>

Climate Experts Worry as 2006 Is Hottest Year on Record in U.S.

According to the government's National Climatic Data Center, the record-breaking warmth -- which caused daffodils and cherry trees to bloom throughout the East on New Year's Day -- was the result of both unusual regional weather patterns and the long-term effects of the buildup of carbon dioxide in the atmosphere. More

<http://www.washingtonpost.com/wp-dyn/content/article/2007/01/09/AR2007010901949.html>

The threat is out there

Popular Mechanics | December 2006

Friday the 13th of April 2029 could be a very unlucky day for planet Earth. At 4:36 am Greenwich Mean Time, a 25-million-ton, 820-ft.-wide asteroid called 99942 Apophis will slice across the orbit of the moon and barrel toward Earth at more than 28,000 mph.

The huge pockmarked rock, two-thirds the size of Devils Tower in Wyoming, will pack the energy of 65,000 Hiroshima bombs—enough to wipe out a small country or kick up an 800-ft. tsunami. On this day, however, Apophis is not expected to live up to its namesake, the ancient Egyptian god of darkness and destruction. Scientists are 99.7 percent certain it will pass at a distance of 18,800 to 20,800 miles. ... "People have a hard time reasoning with low-probability/high-consequence risks," says **Michael DeKay** of the Center for Risk Perception and Communication at **Carnegie Mellon** University. "Some people say, 'Why bother, it's not really going to happen.' But others say that when the potential consequences are so serious, even a tiny risk is unacceptable."
http://www.popularmechanics.com/science/air_space/4201569.html

EDUCATION

November/December Issue of Digital Edutopia

JUST LIKE THE PRINT MAGAZINE. DIFFERENT DELIVERY.

Check out the most recent issue presented in a flip-the-page format. Edutopia can now be viewed anywhere, anytime on the Web. Instant delivery, easy to read, portable, searchable text, and environmentally friendly.

Subscribe to Edutopia magazine now, and discover the new world of learning absolutely free. You'll get a full year of Edutopia's unique coverage of the crucial changes sweeping education and the heroes and innovators who make it happen. Don't miss out! Subscribe today. It's free! (www.edutopia.org/subscribe)

NCLB 2.0: GEORGE MILLER ON THE LAW'S NEXT PHASE

Earlier this month, Congressman George Miller (D-CA) took the helm of the Committee on Education and Labor, one of the most important positions on Capitol Hill. Miller, a long-term advocate for improvement in public education (and a member of The George Lucas Educational Foundation's advisory board), has a busy year ahead. (www.edutopia.org/1764) Image:

www.house.gov/georgemiller/

National Center for Case Study Teaching in Science

<http://ublib.buffalo.edu/libraries/projects/cases/case.html>

To some, the idea of using the case method to teach science may seem a bit like a novelty. This pedagogical method is quite common in the fields of law and medicine, and in recent years, it has been gaining a foothold in some of the sciences. Fortunately for those interested in learning more about this method of instruction, there is the National Center for Case Study Teaching in Science, based at the University of Buffalo. Over the

past fifteen years, they have been working on using this method in large and small classes, and they have developed a number of helpful resources along the way. Visitors can look over the case study collection, which is divided into topical areas, such as anthropology, astronomy, food science, and nutrition.

Interested parties may also wish to take a look at their upcoming conferences and workshops. Overall, this is a most valuable resource, and one that science educators will want to revisit several times.

Video Gaming – The Federation of American Scientists (FAS) Summit on Video Gaming was meant to demonstrate the pedagogical value of gaming technology. It focused on the theory behind video games in the school curriculum and how to engage students and improve their performance. <http://www.fas.org>

A new study from Mid-continent Research for Education and Learning (McREL) has found that professional development for teachers can have a positive impact on student achievement if it

- is sustained over time;
- focuses on specific content areas or instructional strategies;
- supports the collective learning of most, if not all, teachers in a school;
- aligns with school and teacher goals; and
- provides opportunities for teachers to practice and apply new knowledge.

McREL researchers also found, however, that in general, teacher professional development does *not* reflect these characteristics. As a result, it has had mixed results in improving student achievement.

McREL arrived at these conclusions after examining 37 major studies of professional development as part of its larger study of the impact of standards-based reforms on student achievement (see the report, [The Influence of Standards on K-12 Teaching and Learning: A Research Synthesis](#)).

CALENDAR OF EVENTS

Feb.18 – Chinese New Year – Year of the Pig

Feb. 18-24, 2007, Engineers Week,

March 29 - April 1, 2007

NSTA National Conference, St. Louis, MO

Mar. 8-21 Second Annual Star-Hunting Party - GLOBE at Night For more information, visit www.globe.gov/globeatnight or contact globeatnight@globe.gov.

Mar. 31 - National Earth Science Teachers Association (NESTA)/National Association of Geoscience Teachers (NAGT) Share-a-Thon III :Adam's Mark Hotel, St. Louis

April 13-15 PAEE 2007 Conference; “No Child Left Inside” (See directions)

April 18

GLOBE workshop: “Phenology” Protocol

Five Act 48 hours. See Directions.

April 21 Earthday Celebration; Frick Environmental Center (See Directions)

April 22 – Earth Day

April 23 – Tripartite Symposium; Chatham College (See Directions)

April 25 – DNA Day

June 21, 2007

GLOBE workshop: “Hydrology” Protocol

Five Act 48 hours. See Directions.

June 24-27, 2007

NECC 2007

28th-Annual National Educational Computing Conference

Atlanta, GA

http://www.1105info.com/aejvt_gpqlqpps.html

July 8-13, 2007 – Governor’s Institute for Life Sciences - at Juniata College: “The Human Body: From Cells to Systems - A Model for Aligning K-12 Science Curricula”

July 29-August 3 – Governor’s Institute for Environment/Ecology

2007 NSTA Conferences

- [NSTA National Conference, St. Louis, MO](#)
March 29 - April 1, 2007

2007 Area Conferences

- North/Midwestern - Detroit, MI: October 18-20

- Western - Denver, CO: November 8-10
- Southern - Birmingham, AL: December 6-8