

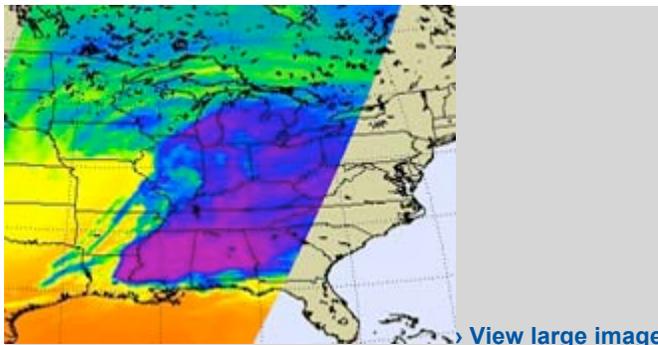
SEVERE WEATHER

Satellites have been busy this week covering severe weather across the U.S. Today, the GOES-13 satellite and NASA's Aqua satellite captured an image of the huge stretch of clouds associated with a huge and soggy cold front as it continues its slow march eastward. Earlier this week, NASA's Tropical Rainfall Measuring Mission satellite captured images of severe weather that generated tornadoes over Louisiana.



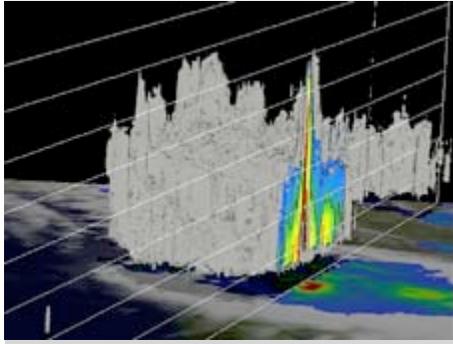
[View large image](#)

On March 9 at 1445 UTC (10:45 a.m. EST), the GOES-13 satellite captured a visible image of the massive storm system that covers about one-third of the U.S. Credit: NOAA/NASA GOES Project



[View large image](#)

On March 9 at 07:59 UTC (2:59 a.m. EST) NASA's Aqua satellite captured a view of the system's cloud-top temperatures. The coldest, highest cloud tops and strongest thunderstorms (and heaviest rainfall) were over eastern Louisiana, Mississippi and Alabama this morning, and those cloud-tops were as cold as or colder than -63 Fahrenheit (-52 Celsius). Credit: NASA JPL, Ed Olsen



[View large image](#)

This 3-D slice through the tornadic storm over Louisiana on March 5 was captured using TRMM Precipitation Radar data. The image shows that one of these powerful tornadic thunderstorms had intense radar echoes reaching as high as 15km (~9.3 miles). Click to see a [FLYBY movie of the 3-D Precipitation Radar image](#). Credit: NASA/TRMM, Hal Pierce



[View large image](#)

This image of rainfall rates was created from TRMM satellite data on March 5, 2011 when this system generated tornadoes in Louisiana. TRMM's Microwave Imager and Precipitation Radar showed that extremely heavy rainfall (red area) was falling from these storms at a rate of more than 2 inches per hour. The yellow and green areas indicate moderate rainfall between .78 to 1.57 inches per hour. Credit: NASA/TRMM, Hal Pierce

The eastern third of the U.S. is being buffered by a large storm that stretches from southeastern Minnesota east to Wisconsin and Michigan, then south through the Ohio Valley and all the way down to eastern Louisiana. That massive storm system was captured in an image by the Geostationary Operational Environmental Satellite called GOES-13.

GOES satellites are operated by the National Oceanic and Atmospheric Administration, and NASA's GOES Project, located at NASA's Goddard Space Flight Center, Greenbelt, Md. creates some of the GOES satellite images and animations.

Dennis Chesters, a GOES Project scientist at NASA Goddard, noted "The wide angle view provided by GOES reveals that the on-shore flow from the Gulf is part of a much larger oceanic circulation centered east of the Bahamas. That is driving a nearly unlimited supply of warm moisture over the eastern U.S. from as far south as Jamaica. With all that energy to work with, the wall of condensation and rainfall at the front pushed convective towers up to the stratosphere, which cast long shadows into the dawn behind the storm."

<http://www.hpc.ncep.noaa.gov/nationalfloodoutlook/index.html>.

NASA's Aqua satellite captured another view of the massive storm system today, March 9 at 07:59 UTC (2:59 a.m. EST) that revealed <http://goes.gsfc.nasa.gov/>,

At NASA Goddard, rain rate data from the TRMM Precipitation Radar (PR) instrument are taken from the center of the swath (the satellite's orbit path over the storm). The rain rates in the outer portion of the storm are created from a on the satellite, called the TRMM Microwave Imager (TMI).

RAIN, RAIN GO AWAY!!!!

Whatever happened to a lovely Spring – some showers bringing May flowers. Instead we drown in almost daily deluges. Our only thankfulness is that we have escaped to deadly flooding down the Mississippi River. If only we only could ship some of this water to Texas and other drought areas – suffering so that their economy is threatened. And our hearts go out to the tremendous MO tornado disaster victims.

The [NOAA Research Council](#) ensures that all NOAA services are based on sound science and that all NOAA research programs and long term plans are consistent with the NOAA Mission and NOAA Strategic Plan.

Which communities should be evacuated before a hurricane makes landfall? Should particular regions prepare for extended droughts in the future? Can a tornado warning, or a tsunami warning, be issued sooner, giving families more time to seek safety? What are the causes and consequences of climate change? How can present and future threats to coastal areas be alleviated? How will climate change in general affect specific ecosystems? What impacts will humans have on biodiversity and how we use our oceans and coasts?

Preeminent research underpins NOAA's ability to provide accurate weather forecasts, to protect and manage the nation's coastal and ocean resources, and to enable society to plan and respond to climate change. [Research at NOAA](#) is conducted in [federal laboratories](#) and through [partnerships](#) with universities and science institutes. NOAA's research provides solid science and policy-relevant findings to leaders in government and industry worldwide on topics such as climate, ozone-deleting gases, air quality, and ecosystem protection.

Researchers of many disciplines – from oceanography, chemistry, biology, meteorology and mathematics, to physics, computer sciences, and engineering – collaborate to conduct research at remote outposts in the Arctic and Antarctica, aboard research and fishing vessels and in-flight on airplanes, at the depths of the oceans, inside state-of-the-art laboratories and at computers in office settings.

State of the Science Fact Sheets

NOAA manages a vibrant, cutting-edge science program that focuses on research with a high relevance to society. To assist the general public in understanding the state of the science, NOAA develops State of the

Science Fact Sheets about key research areas which may be of high interest to the public, and were there may be a diversity of science views within NOAA. The NOAA Research Council oversees the creation and updating of these fact sheets and we post the most recent documents here for the public.

[Weather Forecast Uncertainty](#) Fact Sheet (Feb 10)

[Harmful Algal Blooms \(HABs\)](#) Fact Sheet (Oct 09)

[Air Quality](#) Fact Sheet (Sept 09)

Conceptual Framework for New Science Education Standards

UPDATE (as of 3/7/2011)

The revised Framework report is undergoing a confidential external review by a group of independent experts selected by the National Research Council. The report will be released once it has cleared this rigorous external review process. At this point, we anticipate releasing the Framework to the public in late spring 2011. We will notify people on this project website if there is a delay.

Background on the Framework:

The Framework is the first step in a process for revising existing standards in K-12 science education. In the second step, Achieve, Inc., an independent, bipartisan, non-profit education reform organization that works closely with states will develop a full set of internationally-benchmarked standards based on the Framework. The Framework will also be available for immediate use by states, curriculum and assessment developers, and leaders of professional development for teachers. Both efforts; creating a framework and developing standards based on this framework, have been funded by the Carnegie Corporation of New York,

The Framework is being developed by a committee of 18 experts convened by the NRC. The committee members are all unpaid volunteers and represent expertise in the natural sciences, learning sciences, learning and teaching, curriculum, assessment, and education policy.

The Framework describes the major ideas and practices in the natural sciences and engineering that all students should be familiar with by the end of high school. The Framework is designed to help realize a vision for education in the natural sciences in which students actively engage in science practices in order to deepen their understanding of core ideas in science over multiple years of school. This new vision of the key ideas and practices students should learn is vital as science influences virtually every decision a person makes today and is a key component of innovation, which drives U.S. competitiveness and economic growth.

As the Framework is not a set of fully elaborated standards, it does not include an articulation of the ideas and practices at every grade level. Instead, it offers assumptions only at some key grade level “anchor points” and provides a few examples of performance expectations to serve as illustrations for standards development.

Helen R. Quinn, PhD (NAS)

Chair, NRC Committee to Develop a Conceptual Framework for New Science Education Standards

Chair, NRC Board on Science Education

Project Overview

This project funded with generous support from the Carnegie Corporation is to develop a framework to guide the development of new science education standards. The project will be led by a committee of experts in the scientific disciplines, cognitive science, learning theory, and educational policy. The framework developed by the committee will identify and articulate the core ideas in science in the disciplines of life sciences, physical sciences, earth and space sciences, and engineering and technology, cross cutting ideas and scientific practices. The committee will draw on current research on science learning as well as research and evaluation evidence related to standards-based education reform. This will include existing efforts to specify central ideas for science education including the National Science Education Standards, AAAS’s Science for All Americans and Benchmarks for Science Literacy, the 2009 NAEP Science Framework, and the redesign of the AP science courses by the College Board.

The committee will develop the draft conceptual framework, gather feedback from a range of stakeholders, and write a final NRC consensus report. The draft conceptual framework is anticipated in July and the final report in the winter of 2010.

The work is being done with the cooperation of a group of collaborating partners which includes Achieve, the American Association for the Advancement of Science, and the National Science Teachers Association.

While the conceptual framework will be used to guide Achieve’s work of developing K-12 science education standards under a separate grant from the Carnegie Corporation, it is important to point out that the framework itself will have great value for the science education community. For example, it can provide guidance for development of curricula and assessment, a foundation for discussion of alignment between K-12 and higher education, and a mechanism for creating greater synergy between science learning in formal (school) and informal environments.

Are there any plans for PA Common Core Standards in science and social studies?

A draft version of national science and engineering standards has recently circulated in the science community; however, they have not been released in any draft form by the Chief Council of State School Officers (CCSSO), the sponsoring organization of the Common Core initiative.

The most important national initiative, (Brown adds,) is changing the terms of NCLB to include student performance in science as a measure of Adequate Yearly Progress. Since NCLB became law in 2002, a school's AYP has depended on student results in reading and math, even though a number of states also test students in science. "You can show very clearly after math and reading determined AYP, there was a redirection of time spent on the sciences, and especially on lab experiments," Brown explains. "It's harder for schools to spend money on these things when they're not part of the accountability system."

Francis Eberle, executive director of the National Science Teachers Association, says that science in elementary schools took a particularly hard hit when NCLB went into effect, with a 33 percent reduction on the time spent in class on science. "It's had a very chilling effect on the amount of science being taught," he insists, adding that he has heard stories of teachers being told to teach math and reading at the expense of science.

The NSTA is aiming to reverse that trend. The organization is providing advice to the National Research Council's Board on Science Education on developing a conceptual framework for the new National Science Education Standards. "We think they will fit the model of Common Standards," predicts Eberle, who has just finished reviewing the draft conceptual framework that was released widely for public input, which he says will increase inquiry-based learning and critical thinking in science classrooms.

The new science standards should be ready next year, just as the Common Core project expands its work from reading and math into other subject areas. Meanwhile, almost a dozen states have launched STEM networks over the past three years. The growing list includes Ohio, Colorado, California, Minnesota, Indiana, Arizona, New York and Pennsylvania. Their mission statements range from building coalitions of education and business leaders to defining the STEM skills needed in the workforce, to increasing the number of qualified math and science teachers.



New from NCTQ: Recommendations for the Reauthorization of the Elementary and Secondary Education Act

To HQT or not to HQT?

That's just one of the many teacher quality questions with which Congress will need to grapple in reauthorizing the Elementary and Secondary Education Act. When reauthorization will actually happen is anybody's guess, but there's little doubt that teacher quality issues will be a major area of attention. In *Removing the Roadblocks: How Federal Policy Can Cultivate Effective Teachers*, NCTQ offers our take on these key issues, outlining the actions we think Congress should take—and cautioning against some legislative policies that may not help at all.

To download the report, go to:

[Removing the Roadblocks: How Federal Policy Can Cultivate Effective Teacher.](#)

And don't forget to check out NCTQ's new blog, [PDQ](#), for the latest teacher quality news.

Developmental disabilities inching up in U.S. kids

By Frederik Joelving , NEW YORK | Mon May 23, 2011 2:28am EDT

<http://blogs.reuters.com/search/journalist.php?edition=us&n=frederik.joelving&>

NEW YORK (Reuters Health) - The number of U.S. children with developmental disabilities has been climbing over the past decade, reaching nearly one in six in 2006 to 2008, a new government report shows. "The take-home message for parents would be to promote early identification and screening of children," Sheree Boulet, of the Centers for Disease Control and Prevention in Atlanta, told Reuters Health. "These children require more services."

The study, based on ongoing national surveys of children under 18, looked at a range of disabilities, including attention deficit hyperactivity disorder (ADHD), autism, blindness, cerebral palsy, hearing loss, seizures, stuttering or stammering and other developmental delays. From 1997 to 2008, the proportion of children with at least one of the conditions rose from less than 13 percent to more than 15 percent -- representing an extra 1.8 million kids. "We don't know for sure why the increase happened," said Boulet, adding that several factors may be at play. For instance, there is a bigger emphasis on early treatment today, and parents are more likely to be aware of the conditions, so kids who might not have been diagnosed in the past are being recognized now. Part of the increase might also be due to a change in risk factors, such as parents getting older and having more preterm babies, Boulet said. Most of the rise was driven by the rate of ADHD, which went from 5.7 percent to 7.6 percent over the 12-year study. Autism rates showed the fastest growth, from 0.2 percent to 0.7 percent, while hearing loss dropped by nearly a third.

"We need to plan for this proportion of children needing services," Maureen Durkin, an epidemiologist at the University of Wisconsin-Madison, told Reuters Health. "In many places it is becoming harder for families to get insurance," added Durkin, who was not involved in the new work. While the findings are consistent with earlier reports, she noted, "the big limitation of this work is that it is based on parent reports." Not all parents may be aware that their child has a developmental disability, and so the numbers might actually be an underestimate. On the other hand, the fact that there are more treatments available for ADHD today probably means that parents are more likely to know about the condition, Durkin said.

According to the CDC report, published in the journal Pediatrics, boys were twice as likely as girls to have a developmental disability. In addition, children from low-income families had higher rates of disabilities across the board, except for autism. Durkin said the reason is unclear, but explained that poorer nutrition, more pre-term births and less intellectual stimulation could be involved. Boulet explained that curbing risk factors like maternal obesity and smoking will help trim the chances of having a child with disabilities.

SOURCE: bit.ly/cxXOG <<http://bit.ly/cxXOG>> Pediatrics, May 23, 2011.

Added note: Interesting to note there is no mention of environmental toxins as being potential contributors, though poor nutrition and socioeconomic status are suggested as risk factors.

Spotlight - Penn State Extension: Wet Spring Magnifies Benefits Of No-Till Farming

It is not unusual for Pennsylvania to experience plenty of April showers but this year was exceptionally wet. Some areas of Pennsylvania set new records for April rainfall.



All of this moisture made it very difficult for farmers to keep their spring work on schedule. However producers who have adopted No-Till production practices had an advantage over farmers using conventional tillage. With long term No-Till practices water infiltration and drainage improves. The soil develops a structure that is filled with macro-pores allowing for quicker water absorption and rapid drainage through the soil profile. This allows for the soil to dry out more quickly and enables planting or other tasks such as manure or commercial fertilizer application to resume sooner after the rain stops.

The improved soil structure with the No-Till system also will reduce the risk of soil compaction which can cause major damage to crop potential especially in a wet year as this one. Yield losses in seriously compacted soils can range from 15-50 percent. So any reduction in compaction will be a major improvement.

Several factors in No-Till circumstances contribute to the lower risk for soil compaction. There is a buildup of soil organic matter both on the surface and in the soil profile which provides better soil structure.

In addition the better soil structure and quicker drainage will enable No-Till producers to begin planting earlier. With the many rain delays this year this is a very crucial advantage. Corn yields start to drop in most places in Pennsylvania if the planting date is later than May 15-20. With the high price of corn in the current markets losing yield to planting delays is very expensive and very hard on a farms bottom line.

Of course No-Till practices provide soil conservation benefits which are especially evident during high rainfall periods. With faster infiltration of rainfall, greater soil cover and soil particles bound tightly by greater organic matter the soil loss is greatly reduced. Saving the topsoil has great environmental benefits downstream but also improves current and future productivity on the farm. No-Till production is truly a win-win for all.

For more information on No-Till see: [Steps to a Successful Transition to No-Till](#).

(By: Leon Ressler, Lancaster County Extension Director, Penn State Cooperative Extension. Reprinted from the [Watershed Winds Newsletter](#).)



Trends in the Prevalence of Developmental Disabilities in US Children, 1997–2008

Abstract

Objective: To fill gaps in crucial data needed for health and educational planning, we determined the prevalence of developmental disabilities in US children and in selected populations for a recent 12-year period.

Participants and Methods: We used data on children aged 3 to 17 years from the 1997–2008 National Health Interview Surveys, which are ongoing nationally representative samples of US households. Parent-reported diagnoses of the following were included: attention deficit hyperactivity disorder; intellectual disability; cerebral palsy; autism; seizures; stuttering or stammering; moderate to profound hearing loss; blindness; learning disorders; and/or other developmental delays.

Results: Boys had a higher prevalence overall and for a number of select disabilities compared with girls. Hispanic children had the lowest prevalence for a number of disabilities compared with non-Hispanic white and black children. Low income and public health insurance were associated with a higher prevalence of many disabilities. Prevalence of any developmental disability increased from 12.84% to 15.04% over 12 years. Autism, attention deficit hyperactivity disorder, and other developmental delays increased, whereas hearing loss showed a significant decline. These trends were found in all of the sociodemographic subgroups, except for autism in non-Hispanic black children.

Conclusions: Developmental disabilities are common and were reported in ~1 in 6 children in the United States in 2006–2008. The number of children with select developmental disabilities (autism, attention deficit hyperactivity disorder, and other developmental delays) has increased, requiring more health and education services. Additional study of the influence of risk-factor shifts, changes in acceptance, and benefits of early services is needed.

Related information;

By [Frederik Joelving](#)

NEW YORK | Mon May 23, 2011 2:28am EDT

NEW YORK (Reuters Health) - The number of U.S. children with developmental disabilities has been climbing over the past decade, reaching nearly one in six in 2006 to 2008, a new government report shows. "The take-home message for parents would be to promote early

identification and screening of children," Sheree Boulet, of the Centers for Disease Control and Prevention in Atlanta, told Reuters Health. "These children require more services." Children from low-income families had higher rates of disabilities across the board, except for autism.

Durkin said the reason is unclear, but explained that poorer nutrition, more pre-term births and less intellectual stimulation could be involved. Boulet explained that curbing risk factors like maternal obesity and smoking will help trim the chances of having a child with disabilities.

SOURCE: bit.ly/cxXOG Pediatrics, May 23, 2011.

DIRECTIONS

PRCST SUMMER PROGRAMS!

FREE – NEW WORKSHOP

World Population, Food and the Environment

May 26, 2011 5:00-8:00pm

Three Act 48 Hour

4130 Wesley E. Posvar Hall

University of Pittsburgh

Dinner and Parking Provided

This workshop will address population growth and the challenges it poses – in particular, the challenge of providing everyone with an adequate diet while simultaneously conserving the natural resources on which agriculture and other economic activities depend. Both science and social studies teachers will be able to learn about the environmental issues involved in food systems that impact production, with special attention to population growth and the prospects for environmentally sound agricultural development in Africa, Asia, and Latin America. Speakers will include: Dr. Douglas Southgate (Ohio State University) and Amanda Lavelle - South Butler SD

Teachers will be provided with suggested lesson plans, classroom exercises and other curricular material. This workshop is being offered for 3 Act 48 continuing education credits. Dinner and parking will be provided. This workshop is free.

This workshop is sponsored by the University of Pittsburgh's Global Studies Center and Asian Studies

Center, Global Solutions Education Fund Pittsburgh, and the Pittsburgh Regional Center for Science Teachers (PRCST), an outreach program for the University of Pittsburgh's School of Education.

To register please visit

<https://spreadsheets.google.com/spreadsheet/viewform?formkey=dHYza0RsRDZIUjIMMTZTR3phRVp6UXc6MQ>



NEW FEES

TWO DAY INNOVATIVE SUMMER INSTITUTE

June 21-23, 2011

Two days of outstanding professional development for K-12 teachers!

12 Act 48 Hours All Lunches, Resources, Materials furnished

Fee: \$100/Teacher (Thanks to secured support)

Spend a day at the Pittsburgh Tissue Engineering Initiative and the McGowan Institute for Regenerative Medicine for tours of current research experiences and hands-on activities in Biotechnology. See technology and engineering in action.

Review Energy – A Pennsylvania History: Coal, Oil, Natural Gas, Nuclear. It all began in Pennsylvania. Explore Green Design and materials for conservation and green energy at CCI, Inc. Energy House. See the Green Roof. Then tour a new sustainability installation at Phipps Conservatory.

Outstanding researchers, presenters, tours and activities.

Sponsored by the Pittsburgh Regional Center for Science Teachers (PRCST)

Space is limited!

All workshops will be interactive, interdisciplinary, and include NASA programs and resources.

All Science, Social Studies, Health, Physical Activity, and teachers of other disciplines are invited.

All sessions are aligned with current academic standards and geared to bring current, accurate, and relevant information to teachers for classroom use.

Some scholarship fees may be available later

For reservations and additional information contact:

Jane Konrad

konrad@pitt.edu

412.648.7315



Outstanding FREE workshop

Energy – A PA History

(A two-day workshop July 27-28)

July 27, 2011: Tour the National Technology Energy Lab (NETL) In Bruceton, PA

One of DOE's primary strategic goals is “to protect our national and economic security by promoting a diverse supply and delivery of reliable, affordable, and environmentally sound energy.” NETL contributes to this strategic goal through cutting-edge research and development, focused on the clean production and use of our Nation's domestic fossil energy resources. Advanced technologies provide policymakers with expanded options for meeting vital national energy, environmental, and security needs.

Tour the current research laboratories and learn about new work in the area of energy and power generation.

Scientists will explain their research and there will be resources and presentations on the history of Coal, Oil, Natural Gas, and Nuclear energy in Pennsylvania

July 28, 2011: Explore development of Alternative Fuels: Conducted by Citizen Power

CITIZEN POWER exists to promote public understanding of, and involvement in, socio-cultural, economic and environmental issues and policy development. In furtherance thereof, Citizen Power will conduct research and make available objective, balanced information to all segments of the community, via the distribution of publications and participation in appropriate public fora.

CITIZEN POWER is the outgrowth of 20 years of work for safe, clean and affordable energy. We work to protect the consumer and the environment by influencing public policy through research, education and advocacy. As educators, we disseminate information, in an understandable format, through the media, and by providing direct educational services to requesting organizations. As advocates, we participate in regulatory and legal proceedings at the state, regional and national level that can impact the environment and the regional economy.

Participate in hands-on exploration of Solar and Wind Power.

Extensive resources and equipment provided by Citizen Power

University of Pittsburgh – Posvar Hall Room 5604

12 Act 48 Hours Space Limited

Contact PRCST: Jane Konrad, Ex. Dir. PRCST

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University of Pittsburgh

Pittsburgh, PA 15260

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Game Commission Offers Project WILD Programs For Educators

The Game Commission this week announced a series of upcoming professional development opportunities offered as part of the agency's Project WILD program [in June, July and August](#).

Classroom teachers, early childhood teachers, informal educators, homeschool leaders and Scout and youth group leaders are welcome to participate in these workshops.

"Workshop offerings range from endangered species and wildlife forensics to orienteering and habitat-specific programs, such as 'Wild about Wetlands' and 'Watershed Education,'" said Theresa Alberici, who coordinates the program through the Game Commission's Bureau of Information and Education. "In addition to our species-focused workshops on bear, owls and waterfowl, we've added a 'Wild about Turkey' workshop."

A complete schedule of courses [is available online](#). The listing includes a two-page summary of the courses being offered from June through August in various parts of the state, followed by information on how to register for each of the courses.

Don't Fry Day

EPA Sun Safety Tips

WASHINGTON – The Friday before Memorial Day is “Don’t Fry Day,” a time to remind people at the start of summer about the dangers from exposure to the sun’s harmful rays. Melanoma, the most serious form of skin cancer, is on the rise in America and is the most common cancer among young adults aged 25-29. The U.S. Environmental Protection Agency’s (EPA) SunWise program and the National Council on Skin Cancer Prevention have partnered to provide simple tips on protecting yourself that could save lives.

“Many people still do not realize that unprotected sun exposure can lead to skin cancer and other health problems,” said Gina McCarthy, assistant administrator for EPA’s Office of Air and Radiation. “Simple steps such as using sunscreen, putting on sunglasses or wearing a hat can protect us and our families, while still enjoying the great outdoors.”

**

June 15, 2011

TIME: 8:45 am - 3:15 pm

LOCATION: Frank J. Pasquerilla Conference Center, Johnstown, PA

TO REGISTER: www.francis.edu/stemconference.html

Workshops Available at the Conference

Pro/ENGINEER:

All participants receive \$1 million in Pro/ENGINEER software!

Presenter: Mr. Michael Flowers, Retired Technology Education Teacher, Cumberland Valley High School. Mr. Flowers and his students placed 1st at the Pennsylvania State Level and 3rd at the National Level during the 2009 Real World Design Challenge.

Description: Take advantage of this workshop opportunity available to school districts to gain valuable teacher professional development and nearly \$1 million worth of engineering design software. As a result of efforts through the PA STEM Initiative, teachers throughout the state are eligible to participate in the US Department of Energy's Real World Design Challenge. Pro/ENGINEER software has partnered with the Department of Energy to offer free software licenses to any teacher who attends the training workshop. Each trained teacher receives 300 student licenses (valued at approximately \$1 million), which will not only enable teams from the school to compete in the Real World Design Challenge but also obviously will enhance their curriculum in other areas.

Target Audience: Teachers in high schools in the areas of technology education, physics, math, or engineering.

Workshop Details: The workshop will be held during breakout session III and IV during the Conference. Day 2 of training will be held on June 16 at The Holiday Inn, Downtown Johnstown from 8:00 am to 4:00 pm. The cost for this workshop is \$220 (Conference participants) or \$250 (for those not participating in the full-day Conference).

Engineering by Design™: (Exerpted from Science Matters)

National Geographic - Featured Resource

[Think Green](#)

It's important to protect the environment for future generations. This collection of resources has been designed for families to support learning together about environmental-education topics. Explore activities, articles, maps, and multimedia about the Earth's physical features and human imprint on the planet.

You'll also find stories about inspiring conservationists and a book list with picks from National Geographic Education staff. Get even more materials from our partners in the Thinkfinity Consortium. Think green!

What Is Geo-Literacy?

Geo-literacy is a combination of skills and understanding necessary to make far-reaching decisions in the 21st century. Learn more about geo-literacy and find valuable resources to prepare your students.

DATABASE

The attached safety manual was developed by Michael Baker Jr., Inc.

Moon Township, PA 15108 Contract GTAC5-0-349 for the Department of Environmental Protection. This

manual reviews important safety information you must be aware of and practice. There are abundant references and additional web sites for your information.

Please click link to view attachment: (from Science Matters)

[School_Chemical_Safety_Manual.pdf](#)

Free Safety Publications

The Department of Education has over the past several years produced a variety of free publications on the topic of Safety which we hope will be of interest to you. These publications are currently available to order from the ED Pubs website <http://www.edpubs.gov/> or call Toll free, 1-877-4-ED-PUBS (1-877-433-7827), Monday through Friday, 9 a.m. – 6 p.m. (ET). We look forward to your utilization of the following free publications:

- ED000561P After-School Programs: Give Us Wings, Let Us Fly! Communities And Schools Working Together
- ED001340P Early Warning, Timely Response: A Guide To Safe Schools
- ED001366B Preventing Bullying: A Manual For Schools And Communities
- ED001424B Tips For Helping Students Recovering From Traumatic Events
- ED002182P Success Stories '94: A Guide To Safe, Disciplined, And Drug-Free Schools

New NASA resources

Two award-winning websites for kids have joined forces to further inspire a new generation of explorers.

NASA's science.nasa.gov/kids and spaceplace.nasa.gov have combined to provide several new Web features with interactive graphic design and easy, versatile navigation. The new site includes the extensive and rich science and technology content of the 'old' Space Place with over 50 NASA science missions enriched with content from science.nasa.gov/kids. These sites offer the best of NASA material for elementary school students.

The site includes over 300 separate modules available in English and Spanish. Modules are sorted into menus for Space, Earth, Sun, Solar System, People and Technology, and Parents and Teachers. Information mirrors the missions of the NASA's Science Mission Directorate, as well as the agency's commitment to education and public engagement.

Visitors can filter the menus on subject or type of activity (game, hands-on project, or exploration) and use the search field to produce customized menus. All pages are printer friendly.

The site is available at <http://science.nasa.gov/kids> or <http://spaceplace.nasa.gov>.

Spiders in Space!

The two spiders were successfully transferred from Space Shuttle Endeavour to the International Space Station on Thursday, May 19. Both “spidernauts” are doing fine.

The first photos of the spiders in their new home are now available for viewing and research at www.bioedonline.org

You can also connect with BioEdOnline on [Twitter](#) and [Facebook](#)!

Education in the Age of Globalization

Speaking at ASCD: Yong Zhao presented his research - dually Chinese and American

What we need is a paradigm shift in thinking about education, both what we should teach and how we should deliver it. What does the new paradigm look like, and how can schools and educators work to realize it?

Test bias is a well-acknowledged phenomenon in the education measurement business. Many researchers have shown how IQ tests are biased against minorities because the tests use language and situations that are more familiar to white, middle-class students. However, psychologist Robert Sternberg discovered another type of bias that is perhaps more important in explaining the achievement gaps.

Sternberg proposed that success requires a broad range of abilities, but schools often focus on only one and ignore others. Conventional tests do the same. Following his "triarchic theory," Sternberg and his colleagues at Yale developed the Sternberg Triarchic Abilities Test. The test measures not only conventional abilities—memory and analytical abilities—but also two other types deemed important by Sternberg: creative abilities and practical abilities.

The test was used to select participants for a summer camp program at Yale and was given to high school students nationwide. The participants were then put into five groups: high analytical, high creative, high practical, high in all three abilities, low in all three abilities. The results were surprising:

The high-analytical group looked pretty much like a standard high-ability group: mostly white, middle-class and attending strong schools. But the high-creative and high-practical groups were much more diverse in terms of ethnic, socioeconomic and educational background. In other words, we found we had selected more minority students not through any program of affirmative action but through a program of recognizing and valuing abilities that schools typically neglect, both in their instruction and in their assessments. (Sternberg, 1998)

For those who are especially worried about the United States losing its economic competitive edge because of lower scores of U.S. students, Baker (2007) writes, "In short, the higher a nation's test score 40 years ago, the worse its economic performance" (p. 102). In conclusion, Baker argues:

In the face of such evidence, we can do more than reject the widely held hypothesis that high test scores lead to national success in the future. We can also hypothesize that high test scores are damaging to nations. That the U.S. comes out on top in national success in 74% of the comparisons with higher-scoring nations is statistically significant ($p < .0001$, binomial test). (p. 103)

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Need for a New US Global Health Strategy

New health threats are arising with economic growth. The global middle class is expanding as never before. Rising incomes in China and India dominate the trend, but 20 million individuals join the middle class each year outside these countries, the fastest rate in 30 years. The public health implications are profound. A World Health Organization (WHO) analysis of 24 major, modifiable risks found that hypertension, hyperglycemia, tobacco use, physical inactivity and hypercholesterolemia rank in the top 10 risk factors for death in low-income countries. (excerpted from JAMA, March 23/30 2011-Vol.305, No. 11)

Ed. Note: The PRCST program "Environment and Health: A systems Approach" addresses not only regional and national connections, but international environmental issues – including the Obesity Crisis – Physical inactivity.

Measure Your Nitrogen footprint

There is an online calculator that adds up how much nitrogen pollution each household generates!

Two years in the making for Dr. Beth McGee and the staff at the Chesapeake Bay Foundation, it is posted at

www.cbf.org/yourbayfootprint

Mission Science

A site designed to showcase NASA's educational science resources and encourage students to study and pursue careers in science, technology, and engineering and math, or STEM. For teenagers that want more "class". <http://missionscience.nasa.gov>

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Epigenetic Revolution in Environmental Health – shades of Lamark!

“We now have evidence that our cells detect their environment and tag the DNA in ways that can be understood by the cells of subsequent offspring. It allows cells to adapt very rapidly to their environment and pass that adaptation on to future generations”, says Dr. Thea Edwards, a research associate at the US University of Florida’s department of Zoology.

(<http://healthandenviromentblog.wordpress.com/current-issue/>)

Pollen Photo Gallery - National Geographic Magazine

View great images of pollen. Some of the pollen grains are measured in millionths of a meter!

<http://ngm.nationalgeographic.com/2009/12/pollen/oeggerli-photography>

New Seismic Station - University of Pittsburgh

A seismic station newly installed at the University of Pittsburgh’s Allegheny Observatory revives Pitt’s long-dormant work in seismology. And as the region’s ONLY seismic station, it unites Western Pennsylvania with a global network of scientists aiming to better understand the earth’s structure.

The Global Seismographic Network is a cooperative partnership between IRIS and the [U.S. Geological Survey \(USGS\)](#), coordinated with the international community, to install and operate a global, multi-use scientific facility as a societal resource for Earth observations, monitoring, research, and education. GSN instrumentation is capable of measuring and recording with high fidelity all seismic vibrations from high-frequency, strong ground motions near an earthquake to the slowest global Earth oscillations excited by great earthquakes.

<http://www.iris.edu/hq/>

TII-NASA Free Math Curriculum

“Exploring Space Through Math” is a curriculum aligned with standards from the National Council of Teachers of Mathematics. Portions are available on NASA’s web site

<http://humanresearch.jsc.nasa.gov/education/educationprojects.asp>

Students will be able to design a space capsule and more – learning key math concepts along the way.

Stink Bugs!

Phew –they do STNK! But while they may be merely a nuisance for homeowners, Penn state researchers tell that the brown marmorated bugs are becoming a significant pest for farmers of fruit, vegetable and farm crops. They have caused severe losses in some apple and peach orchards this year. They have also been found feeding on blackberry, sweet corn and soybeans.

They are a native of Asia accidentally introduced into eastern Pennsylvania – recorded in 37 of the 67 counties (but thought to be also in the other counties and in 22 other states).

ento.psu.edu/extension/factsheets/brown-marmorated-stink-bug

www.wtae.com/money/27056729/detail.html

Emerald Ash Borer

The emerald ash borer is a native of Asia and was first discovered in the US in 2002 in Michigan. They have killed tens of millions of trees across the Midwest and East according to the PA Department of Conservation and Natural resources. Ash trees are typically the tallest trees in the canopy here in PA. The trees die in three-four years after they attack a tree. emeraldashborer.wi.gov dnr.wi.gov/forestry/fh/ash

FREE DVD - Viral Outbreak – The Science of emerging Disease

Howard Hughes Medical Institute

Two leading virus researchers explain how they use both simple and sophisticated technologies to detect and fight infectious agents.

Visit www.Biointeractive.org

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SSP Scholarships and Grants

SSP provides funding for these scholarships and grants:

 [2011 Starter Grant](#)

 [High School Equipment Grants](#)

 [College Equipment Grants](#)

 [Pittsburgh Conference Memorial National College Grant – \(PCMNCG\)](#)

 [Elementary School Science Olympiad Program \(ESSOP\)](#)



SACP Scholarships and Grants

SACP provides funding for these scholarships and grants:

 [ES/MS Equipment Grants Program - GRANT RECIPIENTS ANNOUNCED](#)

 [SACP Summer Internship Program](#)

 [SACP College Chemistry Scholarship](#)

 [Undergraduate Analytical Research Program \(UARP\) Grant](#)

 [2011 Starter Grant Award](#)

 [Pittsburgh Conference Memorial National College Grant – \(PCMNCG\)](#)

CALENDAR OF EVENTS



PRCST Programs:

June 21-22 TWO DAY INNOVATIVE SUMMER INSTITUTE

JULY 27-28 FREE - Energy – A PA History -
A Citizen Power hands-on exploration of Solar and Wind Power.

JUNE 6 PAEE and PCEE invite you to join a non-formal

EE certification discussion group near you!

[Download a copy of the Executive Summary of our final survey report.](#)

Northwestern region:

June 6th, 6:30 pm - 8:30 pm

Asbury Woods Nature Center, 4105 Asbury Road, Erie, PA

Contact: Steve Wasiesky, wasesky@mtsd.org

JUNE 15 PSTA - The First Annual Central PA STEM Regional Conference at the Pasquerilla Conference Center in Johnstown, Pennsylvania. Registration is only \$30 and is available via www.francis.edu/stemconference.html

NSTA CONFERENCES:

Oct. 27-29 Hartford, CT. “Science Inspiring Growth”

Nov. 10-12 New Orleans, LA “Eye on Our Future”

Dec. 8-10 Seattle, WA “Science For All, For Now, Forever”

Visit www.nsta.org

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PA DEP Education Grant Office

PA DOE – Office of Environment/Ecology

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Spectroscopy Society of Pittsburgh - SSP

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Western Pennsylvania Unit - Herb Society of America