

**PROST**

**Pittsburgh Regional Center  
For Science Teachers**



Volume 9 Online, Issue 1, Winter 2012

LOCAL ACCESS TO SCIENCE EDUCATION RESOURCES

## **SEVEN BILLION!!!**

**State of the world in October – 7.000.081.570**

### **People and Possibilities**

893 million people over the age of 60 worldwide. By the middle of the century the number will be closer to 2.4 billion. This rapid growth in population has occurred recently. 2000 years ago, the world population was about 300 million. It took over 1,600 years for the population to double to 600 million. Rapid growth started in 1950 leading to the estimated population of 6.1 billion by the year 2000.

The Population Division of the United Nations Department of Economic and Social Affairs, in its *World Population Prospects: The 2010 revision (published in May 2011)* foresees a global population of 9.3 billion people at 2050, an increase over earlier estimates, and more than 10 billion by the end of this century.

*From National Geographic Magazine – “7 Billion: How your world will change”. UNFPA State of the World Population 2011. People and possibilities in a world of 7 Billion.*

The United Nations Population Fund has established “7 Billion Actions” – to inspire change and make a difference by highlighting positive action by individual and organizations around the world.

**What are the challenges and opportunities?**

## SCIENCE SNIPPETS

### EPA Releases 2010 Toxics Release Inventory National Analysis

**WASHINGTON** – The U.S. Environmental Protection Agency (EPA) is releasing its annual national analysis of the Toxics Release Inventory (TRI), providing all Americans with vital information about their communities. The TRI program publishes information on toxic chemical disposals and other releases into the air, land and water, as well as information on waste management and pollution prevention activities in neighborhoods across the country. Total releases including disposals for the latest reporting year, 2010, are higher than the previous two years but lower than 2007 and prior year totals. Many of the releases from TRI facilities are regulated under various EPA programs and requirements designed to limit human and environmental harm.

“We will continue to put accessible, meaningful information in the hands of the American people. Widespread public access to environmental information is fundamental to the work EPA does every day,” said EPA Administrator Lisa P. Jackson. “TRI is a cornerstone of EPA's community-right-to-know programs and has played a significant role in protecting people's health and the environment by providing communities with valuable information on toxic chemical releases.”

Citizens have a right to know what toxic chemicals are being released into their communities. Over the past 25 years, the TRI program has helped citizens, emergency planners, public health officials, and others protect human health and the environment by providing them with toxic chemical release and other waste management data they need to make decisions that affect the safety and welfare of their communities.

TRI data is submitted annually to EPA and states by multiple industry sectors including manufacturing, metal mining, electric utilities, and commercial hazardous waste facilities. Facilities must report their toxic chemical releases to EPA under the federal Emergency Planning and Community Right-to-Know Act (EPCRA) by July 1st of each year. The Pollution Prevention Act of 1990 also requires information on waste management activities related to TRI chemicals.

More on the 2010 TRI analysis and TRI Web-based tools: <http://www.epa.gov/tri>

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**EPA SCIENCE ADVISER LEAVING:** Dr. Paul Anastas, director of EPA's Office of Research and Development and chief science adviser, is leaving the agency in mid-February to return to Yale. He was a professor of chemistry and the environment at the university before coming to the agency in 2009. Anastas is known as the 'father of green chemistry' for coining the term launching EPA's program supporting design of chemical products that reduce or eliminate hazardous substances.

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**[Departing words from EPA's Anastas: We must design chemicals and manufacturing to be 'less toxic and less polluting'](#)**. Paul Anastas, one of the fathers of green chemistry, is leaving his high-ranking post at the U.S. Environmental Protection Agency and returning to Yale University. In a Q and A with Environmental Health News, Anastas said "it's time for me to go home." [Environmental Health News](http://www.environmentalhealthnews.org/ehs/news/2012/2012-0110anastas) <http://www.environmentalhealthnews.org/ehs/news/2012/2012-0110anastas>

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### Toxic releases rose 16 percent in 2010, EPA says

By [Juliet Eilperin](#), Thursday, January 5, 6:37 PM

The amount of [toxic chemicals](#) released into the environment nationwide in 2010 increased 16 percent over the year before, reversing a downward trend in overall toxic releases since 2006, according to a report released Thursday by the [Environmental Protection Agency](#).

The spike was driven largely by metal mining, but other sectors — including the chemical industry — also contributed to the rise in emissions, according to the new analysis from the annual federal Toxics Release Inventory.

Air releases of dioxin, which is linked to cancer as well as neurological and reproductive problems, rose 10 percent from 2009 to 2010, according to the report. Other releases, such as landfill disposal, increased 18 percent.

Dioxins are formed as a byproduct of some processes with intense heat, such as smelting and recycling metals. The 2010 increase stemmed largely from the hazardous-waste-management and mining industries, according to EPA.

Mike Schade — a campaign coordinator for the Center for Health, Environment and Justice — said the fact that emissions are now on the upswing makes it important for the EPA to release a report it started working on in 1985.

“Communities across America have been exposed to dioxin for decades as EPA has continued to work on this study. Every American has measurable levels of dioxin in their body,” Schade said in an interview, noting that most humans are exposed by eating meat or dairy products from animals which have accumulated the chemical in their bodies. “It’s critically important for EPA to finalize this study so the EPA can protect Americans from this toxic chemical.”

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#### **Will Flu Papers Lead to New Research Oversight?**

Martin Enserink *et al.*

At the request of the National Science Advisory Board for Biosecurity, *Science* and *Nature* have agreed to strike key details from papers in press describing how researchers made the deadly H5N1 avian influenza virus more transmissible between mammals.

<http://www.sciencemag.org/cgi/content/summary/335/6064/20>

#### **In the Eye of the Storm, Two Rivals, Two Strategies**

Martin Enserink

The two influenza researchers whose work has triggered a far-reaching debate on the limits of scientific freedom could hardly have handled their publicity more differently.

<http://www.sciencemag.org/cgi/content/summary/335/6064/21>

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#### **Unraveling the Obesity-Cancer Connection**

Gary Taubes

A growing body of research shows that insulin and a related hormone play a key role in fueling tumors. They also may be a link between obesity, diabetes, and cancer.

<http://www.sciencemag.org/cgi/content/summary/335/6064/28>

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#### **Candle Soot as a Template for a Transparent Robust Superamphiphobic Coating**

Xu Deng *et al.*

Coatings that are highly resistant to water and to hydrocarbons can be made starting from candle

soot.

<http://www.sciencemag.org/cgi/content/summary/335/6064/67>

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**Science Podcast**

The show includes the parallel evolution of "supersoldier" ants, Ohm's law at the atomic scale, connecting obesity to cancer, and more.

<http://www.sciencemag.org/cgi/content/summary/335/6064/112-b>

(The above abstracts from Science Table of Contents Text for 06 January 2012; Vol. 335, No. 6064)

By Eryn Brown, Los Angeles Times / For the Booster Shots blog

January 10, 2012, 5:29 p.m.

Two biotechnology firms said Tuesday that they would soon offer machines capable of sequencing a human genome in about a day, at a cost of less than \$1,000. [Illumina Inc.](#) and [Life Technologies Corp.](#) both announced that their new sequencers would come to market in the second half of this year.

Researchers have been waiting for the cost of sequencing a genome, an individual's entire DNA blueprint, to fall to \$1,000 for some time. The conventional wisdom has been that once the price drops to that point, it might become affordable for doctors to deliver "personalized medicine" -- to study patients' genomes to make diagnoses and perfect medical care.

Cheaper access to genomes would also help researchers who are trying to figure out what [genes](#) cause particular traits, and why. One indication that achieving the \$1,000 price tag would be a milestone: The Archon [Genomics X Prize](#) will challenge teams to sequence 100 full genomes for less than \$1,000 apiece during a one-month period next year.

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[Antibiotics breed drug-resistant bacteria in pigs.](#) After giving pigs a low-dose of antibiotics for just two weeks, researchers detected a drastic rise in the number of E. coli bacteria in the guts of the animals. And those bacteria showed a large jump in resistance to antibiotics. [Discovery Channel](#) <http://news.discovery.com/animals/antibiotics-drug-resistant-bacteria-pigs-farming-120116.html>

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The time on the Doomsday clock has moved, and it's in the wrong direction. On Tuesday, the Science and Security Board of the Bulletin of the Atomic Scientists announced that the metaphorical doomsday clock is now at five minutes to midnight, putting humanity one figurative minute closer to catastrophic destruction than it was just two years ago. The Bulletin of the Atomic Scientists was founded in the 1940s by members of the Manhattan Project as a way to educate the public about the dangers of nuclear power. The group debuted the idea of the doomsday clock in 1947, when the time on the clock was set at seven minutes to midnight. They have met every couple of years ever since to discuss the state and fate of the world, and to reset the clock.

This year the board, which includes nuclear and environmental scientists as well as national security experts, cited the failure to act on the Comprehensive Test Ban Treaty by leaders in the

United States, China, Iran, India, Pakistan, Egypt, Israel and North Korea as chief among its reasons for moving the minute hand of the clock closer to doomsday.

"The world still has approximately 19,500 nuclear weapons, enough power to destroy the Earth's inhabitants several times over," the board wrote in a joint [statement](#).

The board also found the disaster in Fukushima, Japan, particularly alarming. "Safer nuclear reactor designs need to be developed and built, and more stringent oversight, training, and attention are needed to prevent future disasters," the members wrote.

And finally, the board expressed grave concern about climate change, writing, "In fact, the global community may be near a point of no return in efforts to prevent catastrophe from changes in Earth's atmosphere."

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## EDUCATION NEWS

Study: Top teachers have a long-term effect on students.

The ability of classroom teachers to raise standardized test scores of their students is tied to teachers as those who raised students' scores on standardized tests -- adding to the ongoing debate over value-added students' long-term success, according to a recent study. Researchers found that elementary and middle-school students taught by high-quality teachers more likely were to go to college and earn higher salaries than their peers.

The study, conducted over 20 years, defined top scores. [The New York Times \(tiered subscription model\)](#)

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### PA Society for Biomedical Research contests...

There is only one month left to submit essay and poster contest entries! The deadline for submissions is February 15, 2012. Information on this contest is on the PSBR website ([www.psbr.org](http://www.psbr.org))

\*\*Please note, our annual awards dinner has been changed to April 17, 2012.

Our annual essay contest is open to all 7-12 grade students in Pennsylvania and Delaware. CASH prizes!! The contest is divided into two separate contests - one for 7&8 graders and one for high school students. The contest recognizes students who demonstrate a superior understanding of bioscience research and the appropriate use of animals in biomedical research, and those who can artfully communicate that understanding in writing. The contest is free to enter. The winners will receive a cash prize and an invitation to attend PSBR's annual awards dinner on April 17, 2012 at the Villanova Conference Center in Radnor, PA. For more information, please visit our website: [www.psbr.org](http://www.psbr.org). Click on Programs>Essay Contest.

New this year is PSBR's first annual poster contest. **This contest is open to all (K-12) students in Pennsylvania** and Delaware. The contest recognizes students who demonstrate an artful way of communicating how animal research benefits our society. The contest is free to enter. This year's themes include Animal Research Saves Lives, Animals Helping Animals, Advancements in Biotechnology, and Careers in Science. The winners will be featured in a 12-month calendar. They will also receive an

invitation to attend PSBR's annual awards dinner on April 17, 2012 at the Villanova Conference Center in Radnor, PA. For more information, please visit our website: [www.psbr.org](http://www.psbr.org). Click on Programs>Poster Contest.

If you have any questions that are not answered on our website, feel free to email us at [psbr@psbr.org](mailto:psbr@psbr.org)

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## National Engineers Week Foundation - Engineers Week 2012

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*The National Engineers Week Foundation, a formal coalition of more than 100 professional societies, major corporations, and government agencies, is dedicated to ensuring a diverse and well-educated future engineering workforce by increasing understanding of and interest in engineering and technology careers among young students and by promoting precollege literacy in math and science. Engineers Week also raises public understanding and appreciation of engineers' contributions to society.*

- **Engineers Week**  
The Foundation's signature program, Engineers Week, celebrates the positive contributions engineers make to society and is a catalyst for outreach across the country to kids and adults alike. Engineers Week is part of many corporate and government cultures and is celebrated on every U.S. engineering college campus. Engineers Week 2011 celebrates its 60th anniversary.
- **Discover Engineering Family Day** (February 19, 2011)  
Held each year at the National Building Museum in Washington, DC, this action-packed event consistently draws 6,500+ attendees. Over 29 exhibitors and 300+ volunteers, kids, and their families build ziplines to safely deliver marbles, explore buoyancy via tinfoil boats, learn about waves via a giant wave tank, and much, much more.
- **Introduce a Girl to Engineering Day®** (always the Thursday of Engineers Week)  
Each year "Girl Day" gives thousands of women engineers, with support from their male counterparts, the chance to directly mentor more than one million girls and young women in grades K through 12. Girl Day celebrates its 10th anniversary this year.
- **New Faces of Engineering**  
Recognizing the accomplishments of young engineers is the goal of this program. Established in 2003, over 450 engineers have been featured in print and online. These engineers, age 30 years or younger, have shown outstanding abilities in projects that significantly impact public welfare or further professional development and growth.
- **DiscoverE Classroom Visits®**  
More than 45,000 engineers work with 5,500,000 students and teachers in elementary through secondary school each year through classroom visits and extracurricular programs, using educational materials provided by the National Engineers Week Foundation.
- **National Engineers Week Future City Competition®** ([www.futurecity.org](http://www.futurecity.org))  
Operating in 35 regions, Future City works with 1,034 schools and reaches 33,000 students in a semester-long program. This engaging program challenges middle school students to design a city 150 years into the future. Starting with just their imaginations and SimCity software, teams of three students, supported by a teacher and an engineer mentor, come up with ingenious solutions they represent in three-dimensional scale models. Each January, thousands of students participate in regional competitions, presenting their designs before a panel of volunteer engineer judges. First-place regional teams win a trip to Washington for National Finals, held each year during National

Engineers Week. The President of the United States recently recognized Future City at the first White House Science and Engineering Fair.

- **Discover Engineering** ([www.discoverengineering.org](http://www.discoverengineering.org))  
This dynamic website is designed to showcase the hows and whys of becoming an engineer to middle school students and educators. The site features an exciting video series and related hands-on challenges, career information, engineer profiles, and links to related educational, professional, and corporate sites.
- **MyDiscoverE** ([www.mydiscover-e.org](http://www.mydiscover-e.org))  
The Foundation's latest offering, this new site is a rich searchable database filled with engineering events, workshops, and camp programs that will become the go-to place for families looking for opportunities in their area.
- **Sightseers Guide to Engineering** ([www.engineeringsights.org](http://www.engineeringsights.org))  
Plan your next trip to visit some of these engineering marvels, or visit all 50 states-while not leaving your house. From the subtle to the spectacular, visitors not only learn more about America's rich engineering feats but are encouraged to submit their own favorites.
- **Global Marathon For, By, and About Women in Engineering®** ([www.globalmarathon.net](http://www.globalmarathon.net))  
Imagine getting the chance to talk to women engineers from around the world for four hours each day over a 6-day period. Women (and men) from North America, South America, China, India, Middle East/Africa, and UK/Europe discuss universal topics-how to encourage girls and young women to consider engineering as a career, advice on career paths for young engineers, achieving a life/work balance, and benefits of networking. The Marathon happens each March via live Internet chats, telephone conversations, and Webcasts.
- **Cyberchase** ([pbskidsgo.org/cyberchase](http://pbskidsgo.org/cyberchase))  
*Cyberchase* is a wildly popular action-packed math adventure for young children produced by WNET-NY (PBS). National Engineers Week Foundation coalition partners receive specially produced resource kits to "join the *Cyberchase*" and make the engineering connection with young children. Previous seasons and materials have focused on inventing, building, and engineering.
- **Design Squad Nation** ([pbs.org/designsquad](http://pbs.org/designsquad))  
Shifting away from the reality competition format of past seasons, coalition partner *Design Squad Nation* sends two new co-hosts, Judy and Adam, across the county and around the world to work side-by-side with kids to turn their dreams into reality—via engineering. The TV show, website, and extensive outreach campaign are sparking kids' inventive spirit to engage them in content-rich engineering challenges.
- **Engineer Your Life (EYL)** ([www.engineeryourlife.org](http://www.engineeryourlife.org))  
The National Engineers Week Foundation is secretariat for Engineer Your Life. EYL is a groundbreaking messaging campaign that is successfully challenging high school girls', teachers', and counselors' outdated stereotypes about engineering. Based on the results of an extensive nationwide survey identifying what girls want-careers that are creative, collaborative, personally fulfilling, and most of all, socially relevant, EYL is making a compelling case to high school girls through a website, promotional materials, and national workshops for engineers and educators.
- **Printed and AV Materials**  
The Foundation prepares and distributes a variety of support materials, including student guidance materials, "how-to" instructions, promotional materials such as buttons and caps, a variety of DVDs and video products and, each year, a new poster to inspire excitement and pride in the engineering profession.

See [www.eweek.org](http://www.eweek.org), email [info@eweek.org](mailto:info@eweek.org), or call (703) 684-2852 for more information on each of these programs and materials to support them.

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## NGA Releases STEM Education Guide

The National Governors Association (NGA) recently released a report, *Building A Science, Technology, Engineering, and Math Education Agenda*, focused on strengthening STEM education. The National Governors Association (NGA) first addressed STEM in its 2007 report, *Building a Science, Technology, Engineering and Math Agenda*. This report updates those recommendations in light of recent state progress to improve education standards and other efforts to advance STEM education. In addition, this report incorporates recent data from studies that make the economic case for pursuing a STEM agenda even more compelling than before.

The report's six brief chapters cover the following issues:

- Goals of the STEM agenda, focusing on specific measures.
- Why STEM is important in terms of jobs, prosperity, and future economic success.
- Where the current system is preventing the graduation of more high school and college students with STEM skills.
- What is being done and can be done to counter these trends.
- Concludes with a look at the work ahead.

Governors, state education policy staff, and state education leaders can use this guide to further the implementation of STEM agendas. For more information on NGA's STEM work, visit [www.nga.org/cms/stem](http://www.nga.org/cms/stem).

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## DIRECTIONS

**Sun-Earth Day workshop** – PA NASA Educator Resource Center (ERC) and PRCST and the Carnegie Science Center. Learn about "Curiosity and the Mars Mission".

### **Congratulations to the Successful Launch of MSL!**

At 10:02 a.m. EST on Saturday, November 26, 2011, NASA began a historic voyage to Mars as the Mars Science Laboratory (MSL) successfully launched from Cape Canaveral Air Force Station aboard an Atlas V rocket in Cape Canaveral, Florida! It will deliver the largest and most advanced rover (named Curiosity) to date to the surface of Mars in August 2012, to investigate Mars' present and past ability to sustain microbial life. The rover's onboard laboratory will study rocks, soils, and the local geologic setting in order to detect chemical building blocks of life (e.g., forms of carbon) on Mars and will assess what the Martian environment was like in the past. Go MSL!

For more information and updates about the MSL mission, go to: <http://marsprogram.jpl.nasa.gov/msl/> and [http://www.nasa.gov/mission\\_pages/msl/index.html](http://www.nasa.gov/mission_pages/msl/index.html) The GRAIL mission will also be presented along with the Lunar Rocks and Meteorites. **GRAIL's** (<http://sse.jpl.nasa.gov/grail/science.cfm>) primary objectives are to help scientists determine the structure of the lunar interior, from crust to core, and to advance understanding of the Moon's thermal evolution.

April

Free NASA Sun-Earth Day Kit – NASA resources.

6 Act 48 Hours; Fee \$25.00

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### PRCST SUMMER WORKSHOPS

Reading and writing have always been fundamental to science—for scientists, teachers, and students alike. In this information age, the emerging synergy between science and language arts can only help prepare students to become better producers and more critical consumers of ideas.

#### PRCST offers two professional development days linking the humanities with science/environment:

LIBERAL ARTS AND SCIENCE: Bringing the A into STEM = STEAM

Day 1 “Reading to Learn the Content” Presented by Dr. Patricia Vathis, Advisor, PA DOE Office for Environment/Ecology

Day 2 “Ballet, Myths, and Physical Fitness – Enhance Science Environment Studies”: Using Ballet to teach math and science concepts – presented by Maria Caruso; Using Classical Myths in Science/Environment education – presented by Jane Konrad; Keeping fit : Let’s Move Initiative – combating childhood obesity.

June 2010 – TBA 12 Act 48 Hours – Fee: \$50

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WATER QUALITY AND MARCELLUS SHALE: A TWO-DAY WORKSHOP

July 11-12 In cooperation with the PA USGS – Washington’s Landing.

PA Geology – stratification – fossil fuels; Impact of extraction of fossil fuels – economic and environmental;

Special focus on Marcellus Shale Drilling including legislative components.

FREE PRCST EHI Water Quality Kit - 12 Act 48 Hours – Fee \$50

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AIR POLLUTION – SOURCES AND SOLUTIONS – A TWO-DAY WORKSHOP

July 25 Air Pollution – Sources: Hopy Post Gazette Air Quality Monitoring report; GASP and monitors lending policy; Air & Waste Management Assn. – Air Quality Environmental Resources

July 26 Solutions to Air Pollution - Wind and Solar energy: presented by Citizen Power

FREE PRCST EHI Air Quality Kit - 12 Act 48 Hours – Fee \$50

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For information and reservations contact Jane Konrad: [konrad@pitt.edu](mailto:konrad@pitt.edu)

## Women for a Healthy Environment

Michelle Naccarati-Chapkis  
Executive Director

We are pleased to announce that Pittsburgh will once again be a viewing party location for **TEDxManhattan: Changing the Way We Eat**. This FREE event is scheduled for Saturday, January 21st from 10:30 am - 5:15 pm (doors open at 9:30 am) at Chatham University's Eddy Theater. You may attend all or a portion of the event.

TEDxManhattan will explore the food system-from what has happened, to where we are, and onto what we are doing to shift to a more sustainable way of eating and farming. The themes for this year's sessions are **Issues, Impact and Innovation**. Speakers include Urvashi Rangan, who leads and directs the Consumer Safety and Sustainability Group for Consumer Reports and Gary Oppenheimer, a CNN Hero who founded AmpleHarvest.org, which works to ensure that there is "no food left behind" by helping America's 40+ million home gardeners who grow food to find a local pantry eager for their excess bounty. For more information about the day's agenda, visit [www.tedxmanhattan.org](http://www.tedxmanhattan.org).

Co-hosts for this viewing party include Women for a Healthy Environment, PA Association for Sustainable Agriculture, and Chatham University's School of Sustainability and the Environment's Food Studies Program. This event is FREE, but we ask that you kindly register in advance by [clicking here](#). We hope you will be able to join us for an informative day!

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## Twitter Chat: eSchool News & ASCD discuss Common Core State Standards

January 19, 2012 at 1 p.m. ET

Join eSchool News and ASCD, the global leader in providing programs, products, and services that empower educators to support the success of each learner, for a Twitter chat about the Common Core State Standards.

ASCD is an endorsing partner of the common core initiative. ASCD believes the newer, higher standards will require schools and communities to better and more comprehensively support student learning if students are to meet these enhanced expectations. ASCD also believes that for the common core standards to succeed and have maximum effect, they also need to be part of a [well-rounded, whole child approach](#) to education that ensures students are healthy, safe, engaged, supported, and challenged.

Join **David Griffith, ASCD director of policy, and Efrain Mercado, lead strategist, Common Core State Standards for ASCD and eSchool News Editor Dennis Pierce** to learn more about:

- Common Core State Standards
- How the Common Core can be used to support the Whole Child
- What is next for Common Core

To participate, send your questions for ASCD and eSchool News to [@eschoolnews](#) and use the hashtag [#esnedchat](#). If you don't follow eSchool News on Twitter, you can do so [here](#).

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### **Dwight David Eisenhower Transportation Fellowship Program**

The U.S. Department of Education is accepting applications for the Dwight David Eisenhower Transportation Fellowship Program. This program provides funding for the pursuit of Masters or Doctorate degrees in transportation-related disciplines. The program is intended to bring innovation and enhance the breadth and scope of knowledge of the entire transportation community. Individual students enrolled in an accredited higher education institution in the U.S. are eligible to apply. The application deadline 10, 2012. For more information, click [here](#).

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### **GLOBE Community**

As a way to properly honor **Earth Day 2012**, the GLOBE Program is hosting a **student video competition**. GLOBE Students from around the world are now invited to submit a short video (2 minutes or less) showing how they are exploring and investigating their local climate using GLOBE protocols and learning activities.

Video entries will be accepted from 15 February to 15 March 2012. The top regional videos will be highlighted on the GLOBE website starting 16 April, and all videos will be featured on Earth Day, 22 April. A set of prizes will be awarded to winners from each GLOBE region.

Prizes include:

- 1st place – A trophy, a GLOBE flag and your video highlighted on the GLOBE website
- 2nd place – A plaque and a GLOBE flag
- 3rd place – A GLOBE flag

All videos will become part of the GLOBE YouTube video collection.

Upload your video to YouTube, TeacherTube, Vimeo, or your favorite video sharing website. Email the link to the video, along with a written transcript, to [climatecampaign@globe.gov](mailto:climatecampaign@globe.gov) by 15 March 2012 5:00 p.m. MT (23:00 GMT/UTC). Full consideration will be given to videos submitted by the deadline.

For more details (including how the videos will be scored), visit the [Earth Day Video](#) web page. Direct your questions to [climatecampaign@globe.gov](mailto:climatecampaign@globe.gov).

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### **Goddard Forum To Focus On Marcellus Shale Drilling Impacts On Forests**

“Oil and Gas Development Impacts on Forested Ecosystems: Research and Management Challenges” will be examined April 9-10 as part of the Pennsylvania State University Goddard Forum, University Park.

The conference seeks to join scientists, managers, conservation organizations, and industry representatives who are working with oil and gas development to share research results and management strategies.

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### **Save the Date: April 26, 2012 1st Annual Steinbrenner Institute Earth Day Expo**

The 1st annual Steinbrenner Institute Earth Day Expo will take place on April 26, 2012 in the University Center on the Carnegie Mellon campus. The expo will offer students, faculty, staff, and campus organizations the opportunity to showcase their environmental exhibits, research and projects to the entire campus community. The Expo will begin at 4pm and run until 6pm, and is intended to be an informal exposition of environmental talent on the Carnegie Mellon campus. A call for exhibitors will be distributed widely in January 2012. Participants from all Carnegie Mellon colleges and departments are welcome! For more information on how to join the Expo email Erika at [elninos@cmu.edu](mailto:elninos@cmu.edu)

### **The Intel International Science and Engineering Fair (Intel ISEF)**

Intel ISEF is a program of Society for Science & the Public, and the world’s largest international pre-college science competition, is coming to Pittsburgh! The global science competition for students in grades 9–12 provides an annual forum for more than 1,600 high school students from over 55 countries to display their independent research. SSP, Intel, and the Pittsburgh Local Arrangements Committee are seeking volunteers to support the Intel ISEF, May 13-18, 2012 at the David L. Lawrence Convention Center.

General volunteers and judges are needed. Judges will interact with student Finalists, judging their projects in 17 scientific disciplines and must have a Ph.D., M.D., or equivalent (D.O., Ed.D., D.D.S., D.V.M., etc.)

OR a minimum of six years related professional experience beyond receiving their B.A., B.S., or Master’s degree. For more information on how to get involved email [ssnyder@societyforscience.org](mailto:ssnyder@societyforscience.org)

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## **WQED PITTSBURGH IS CALLING ALL KIDS FOR ANNUAL WRITERS CONTEST**

***PBS KIDS GO! Writers Contest***  
***encourages children to create original stories and illustrations***

**PITTSBURGH** – WQED Pittsburgh is kicking off the new year with the **PBS KIDS GO! Writers Contest** for students in grades kindergarten through third, a national initiative designed to promote the advancement of children’s reading skills through hands-on, active learning. 2012 marks the eighteenth year that WQED has offered the Contest to the region and the third year that **EQT Corporation** is sponsoring WQED’s contest in partnership with **West Virginia Public Broadcasting** (WV PBS.) Also partnering with WQED this year is **Penn State Public Broadcasting** (WPSU) which serves central Pennsylvania. A central website, [writeonkids.org](http://writeonkids.org), provides information about the Contest and the local enrichment opportunities offered in each station area.

To view the full release go to: <http://www.wqed.org/pressroom/releases/wqed-pittsburgh-is-calling-all-kids-for-annual-writers-contest/>

To schedule an interview please contact: George Hazimanolis at 412-622-1366 or [ghazimanolis@wqed.org](mailto:ghazimanolis@wqed.org)

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## DATABASE

**City of Materials** for Middle level educators – games, resources, career information about materials science and engineering. City Tour – an interactive game and Materials Radio – a collection of audio podcasts. Download materials science learning modules such as The Great Ketchup caper and Solubility of Packing Peanuts. [www.cityofmaterials.org](http://www.cityofmaterials.org)

**Earth exploration Toolbook (EET)** Collection of activities for HS and college learners – how to work with and interpret environmental science data. Ex. My World GIS tool to construct a world map of evidence to support the Dynamic Earth Theory. <http://bit.ly/vlsSvh>????

**Edhead games website** Educational games focused on science, math, and critical thinking – standards based for a range of grade levels and topics. Includes a Teacher’s Guide and glossary. [www.edheads.org](http://www.edheads.org)

### NATIONAL LABORATORIES:

**Fermilab’s Education Office** Classroom units and activities, games, videos, information and images. <http://ed.fnal.gov>

**Berkeley National Lab** LBNL site: virtual frog dissection kit, nuclear science wall chart. [www.lbl.gov/Education](http://www.lbl.gov/Education)

**Lawrence Livermore National Lab** Science on Saturday lectures with demonstrations. Can tour LLNL’s Center for Accelerator Mass Spectrometry <http://bit.ly/ugBjV0>

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### **Take a Ten-Minute Field Trip**

You can go far in a brief period of time when you employ what Helen Ross Russell famously called [Ten-Minute Field Trips](#). As Russell notes, “the trip can be a natural outgrowth of the topic at hand: ‘Let’s go outside and look at the rock outcropping at the corner of our school grounds.’ ‘When the Sun comes out, maybe we could set up a shadow study.’” Download the free sections [“Birds”](#) and [“Animal Tracks”](#) for numerous examples of brief, nearby activities you could incorporate, from observations of birds through the classroom window to looking for animal tracks in snow or mud. For even more ideas for quick outdoor activities close to school, check out [Schoolyard Science](#), [Inside-Out](#), and [Outdoor Science](#).

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## EPA ANNOUNCES HISTORIC RULING TO CURB MERCURY AND OTHER POLLUTANTS FROM COAL-FIRED POWER PLANTS

On Dec. 21, EPA issued the first national standards to slash emissions of dangerous air pollutants (including mercury) from coal-fired power plants. EPA estimates that the new safeguards will not only decrease plant emissions of dangerous air pollutants, but will prevent premature deaths, heart attacks, and respiratory illnesses, reduce exposure to cancer causing toxins, make fish safer to eat, and provide jobs. For more information, go to <http://www.epa.gov/mats/>.

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## EPA RECOGNIZES JANUARY AS NATIONAL RADON ACTION MONTH

Radon is a natural, radioactive gas that can seep into homes from underground and accumulate to levels that can cause lung cancer. As part of National Radon Action Month, EPA suggests Americans take the simple and affordable preventive steps to test their homes from harmful levels of radon gas, and when building a new home, use the safer radon-resistant construction techniques available. For more information on how to test, fix, and obtain a test kit, contact your state radon office: <http://www.epa.gov/radon> or call 1-800-SOS-RADON.

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## CALENDAR OF EVENTS



### **2012: International Year of:**

**Sustainable Energy for All – United Nations**

Alan Turing , commemorating the mathematician, computer pioneer, and code-breaker on the centennial of [Turing's](#) birth

2012 (MMXII) is a leap year starting on Sunday in the Gregorian calendar.  
It is the 2012th year of the Anno Domini or Common Era designation, the 12th year of the 3rd millennium  
and of the 21st century; and the 3rd of the 2010s decade.vvv

Chinese Year of the Dragon

Jan. 28 – The Frame of Civilization – Raccoon Creek State Park in Hookstown. Day-long workshop. \$10;  
call 724.899.3611 or email [paadams@pa.gov](mailto:paadams@pa.gov)

Feb. 24-25 – Keystone Coldwater Conference; PA Council of Trout Unlimited; contact Samantha Kutskel  
814.359.5233 or visit <http://www.outreach.psu.edu/programs/coldwaterconservation/>

Feb. 29 – STEM EDUCATION event – Carnegie Science Center- Free. Contact PRCST [konrad@pitt.edu](mailto:konrad@pitt.edu)

March 4 – Penns Woods West Chapter – Trout Unlimited – Annual Cabin Fever Show fundraiser; Sheraton  
Hotel, Cranberry, PA [www.pwwtu.org](http://www.pwwtu.org); 412.999.8292

March 15- ITEEA Annual Conference, Lon Beach, CA. “Changing the Conversation-:Improving  
Technology and Engineering”

March 24-26 – ASCD Annual Conference, Philadelphia, PA; “ A Collective Call to Action”;

March 29-April 1 NSTA Annual Conference. Indianapolis, IN Visit [www.nsta.org](http://www.nsta.org) for updates

April - SunEarth Day - A PRCST workshop at the Carnegie Science Center. contact [konrad@pitt.edu](mailto:konrad@pitt.edu)

April 9-10 **Goddard Forum** - To Focus On Marcellus Shale Drilling Impacts On Forests

April 21-23 NSBA Annual Conference, Boston, MA – Boston Conference Center

May 17-19 STEM Forum and Expo: “Tools for STEM education for elementary and Middle School  
Educators. Atlantic City, NJ Visit [www.nsta.org/stemforum](http://www.nsta.org/stemforum)

June 11-20 Research Experiences for Teachers: A 6 week research experience. National High Magnetic  
Field Laboratory, Tallahassee, FL Visit [www.magnet.fsu.edu/educaiton/ret](http://www.magnet.fsu.edu/educaiton/ret)

**PRCST Summer Workshops:** (See Directions for details)

June 11 “Reading to Learn the Content”; presented by Dr. Patricia Vathis, Advisor, PA DOE Office for  
Environment/Ecology.

June ? TDA – Linking Liberal Arts and Science: Ballet, Classical Myths, fitness

July 11-12 Water Quality in PA: Geology and Marcellus Shale Drilling. PA USGS Office, Washington’s  
Landing,

July 25-26 - Air Quality: Sources and Solutions, U. Pittsburgh

June 19-22 **National Agriculture in the Classroom Conference:**

JOIN US in COLORADO! The education team at NGA will be presenting GAME: Grow, Ask, Move & Eat—our latest curriculum unit that gets your students working in the garden!

**Looking Ahead – NSTA Area Conferences**

Oct. 18-20 Louisville, KY

Nov. 1-3 Atlanta, GA

Dec. 6-8 Phoenix, AZ

**2013 National Conference**

April 11-14 San Antonio, TX

PRCST thanks those who have supported PRCST Programs:

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*National Energy Technology Laboratory (NETL)*

*PDE Office for Environment/Ecology*

*Pittsburgh Tissue Engineering Initiative*

*McGowan Institute for Regenerative Medicine*

*Moretti Consulting Group*

*Phipps Conservatory and Botanical Gardens*

*Spectroscopy Society of Pittsburgh (SSP)*

*Society for Analytical Chemists of Pittsburgh (SACP)*

*The Pittsburgh Foundation – Nancy Hannon Gordon Fund*

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