

PRCST

**Pittsburgh Regional Center
For Science Teachers**



Volume 7 Online, Issue 1, Winter 2010

LOCAL ACCESS TO SCIENCE EDUCATION RESOURCES

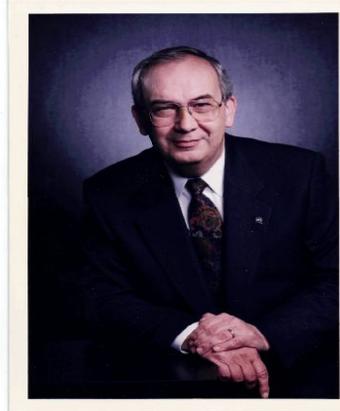
TWENTY FIFTH ANNIVERSARY FOR PRCST!



On October 15, 2009 the Pittsburgh Regional Center for Science Teachers honored the 25th Anniversary of the PRCST record of professional development programs and resources provided for K-12 educators. The all-day conference was held in the Lecture Hall, Carnegie Museum of Natural History. Dr. Devra Davis, renowned environmental researcher and author, was the keynote speaker. She was joined by outstanding presentations from area professional organizations and PRCST participants throughout the morning. During the afternoon attendees were privileged to visit two sections of the Carnegie Museum of Natural History, Entomology and Botany, to view museum collections and current research programs.

Surviving some poor weather and difficulty locating the hall, those attending received an assortment of related educational resources and had time to view poster displays of past PRCST conferences and workshops. A presentation of the establishment and development of PRCST was shown on the large screen prior to the conference. Speakers and long-time supporters were presented with certificates of appreciation and gifts by Jane Konrad, Ex. Dir. And Co-Founder of the Pittsburgh Regional Center for Science Teachers (PRCST).

The most honored guest was E. Kears Pollock, retired executive, PPG Industries, who was a charter Board Member of PRCST.



Other honored speakers were:

President, Dr. Tucker Gordon:

Recognition of PRCST Founder, early Board members and Supporters

Co-Founder, Ron Baillie, Co-Director of the Carnegie Science Center

E. Kears Pollock, Retired Executive, PPG Industries, Inc.

Dr. Indira Nair, Vice Provost-Education, Carnegie Mellon University

Mr. John Varine – SSP/SACP representative

PRCST Programs - Teacher participants and leaders of PRCST workshops

Dr. Pat Bordell, teacher, *First workshop series – Chemistry (now at Duquesne University and SACP Officer)*

Amanda Lavelle, Teacher, South Butler – *PRCST programs, EHI Manual reviewer*

Judy Mack – teacher (retired), Blackhawk SD, Volunteer Project Leader, *VIP Project*

Kathy Kolesar, Teacher, Allegheny Valley SD, *Environment and Health: A Systems Approach*

Education Support:

Dr. Alan Lesgold, Dean, School of Education, University of Pittsburgh

Dr. Indira Nair, Carnegie Mellon University

Dr. Patricia Vathis, Advisor, PDE, Office for Environment/Ecology

Jack Farster, PA DEP Education Grant Office

Dr. Vivian Loftness, FAIA, CMU

Amanda Lavelle and Kathy Kolesar, recently active in PRCST professional development workshops, presented their classroom work, showing the integration of workshop materials and concepts and how this supported the achievement of their students.

DIRECTIONS

March 6-8 **ASCD Annual Conference and Exhibit Show**
San Antonio, TX; www.ascd.org/annualconference; 800.933.27233

March 18-21 **2010 National NSTA Conference**
Philadelphia, PA: Meeting the Unique Needs of Urban and Rural Science Learners
Connecting the Content: Between, Within, and Among Subjects
Closing the Digital Generation Gap Between Teachers and Students
Rekindling the Fires of Science Teaching and Learning

PRCST WORKSHOPS

March 2-30 **An Interdisciplinary Approach to Global Environmental Issues**

A series of five free workshops for K-12 teachers in the disciplines of science/environment, social studies, technology, and language will be offered on Tuesday evenings in March, 2010 at the University of Pittsburgh (Room 4130) from 4:30pm to 8:30pm. This series of workshops will provide 25 Act 48 continuing education hours. Conducted by the University Center for International Study (UCIS) and PRCST.

These workshops will provide a Global view of the world around them and the environmental impacts that affect us daily – the environmental imperative.

The series will focus on the understanding of relationships of environmental impact on world regions (Asia, Latin America, Middle East, Russia and East Europe, and West Europe). They will include an in-depth look at content areas from the point of views and disciplines accompanied by related hands-on activities.

Participants will receive teaching resources related to the content areas. Dinner and parking is provided. Space is very limited and participants must agree to attend all five workshops. Register early! Contact PRCST konrad@pitt.edu

April TBD **Two-day workshop, Clarion University**

Integrating the programs Environment and Health: A Systems Approach, Food-Land-People, and NASA programs and materials. Prepare for "Environmental Day". Many hands-on activities and resources. Dates TBD. Sponsored by the NorthCentral Math/Science Collaborative, PRCST, and the PA NASA ERC. 12 Act 48 hours. Contact PRCST konrad@pitt.edu

April TBD **Green Impact, Phipps Conservatory and Botanical Gardens**

Join this workshop in concert with Environmental Day. Curricular integration, hands-on activities, resources, and a tour of the Phipps LEED certification renovations. 5 Act 48 hours. Contact PRCST konrad@pitt.edu

June 23,24 **Two-day workshop . Elementary GLOBE, Beechwood Farms**

Exploring the NASA Elementary GLOBE Program; hands-on activities, each participant will receive the five booklets in this program. Sponsored by the PA NASA ERC. Dates to be confirmed. 12 Act 48 hours. Contact PRCST konrad@pitt.edu

July TBD Two-day workshop, Exploring Climate Change

These workshops will be held at the Carnegie Museum of Natural History (CMNH) sites, Oakland, PA and Powdermill Nature Reserve. Sponsored by PRCST and DEP Education Grants. TDB. 12 Act 48 hours. Contact PRCST konrad@pitt.edu

The New York Times
The Learning Network
Teaching & Learning With The New York Times



JANUARY 14, 2010, 11:45 AM

5 Ways to Teach About Haiti Right Now

By [HOLLY EPSTEIN OJALVO](#) AND [KATHERINE SCHULTEN](#)

Damon Winter [Go to related slide show »](#)

Five easy ways to use The Times to teach about what's happening as the story continues to unfold:

1. Respond to Photos – Use the interactive features [“A Closer Look at the Destruction in Haiti,”](#) the slide show [“Devastating Earthquake Hits Haiti”](#) and/or the Lens blog photo feature [“Behind the Scenes: There for the Quake.”](#) Then have students respond in writing to the image of their choice, in the form of detailed descriptions, questions or letters to the people pictured. ([Here](#) are more ways to have students write about photos.)

Journalism students might consider the challenges that photojournalists are facing in trying to capture what has happened in Haiti.

2. Understand the Earthquake's Effects – Students look into how and why Haiti was hit so hard by the earthquake. You might do this by using the interactive map with photos and audio, [“After the Haiti Quake,”](#) to see where the devastation in Port-au-Prince is concentrated, or by reading about the [disaster relief efforts underway](#) and about [the human toll](#). Keep up with ongoing news at [The Lede blog](#) and the [NYTimes.com homepage](#).

A quick way to help students understand the basics is to consider the [“Who, What, Where, When, Why and How”](#) of this crisis first, then create [“One Pagers”](#) in response to what they learn.

3. Learn Recent Haitian History – Why does [a Times editorial today](#) say “Once again, the world weeps with Haiti”? How have “generations of misrule, poverty and political strife” as well as recent

natural disasters affected this nation, the poorest in the hemisphere? Students can watch [this video](#) about Haiti's geography and infrastructure, read the short, encyclopedia-like description of the country and its people and politics on the [Times Topics page on Haiti](#) or read an [Op-Ed](#) that provides background on Haiti and explains why the nation is vulnerable.

4. Delve into Earthquake Science – Students seek [information about how and why earthquakes occur](#), focusing on such terms as epicenter, tectonic plates, aftershocks, seismic waves, Richter Scale and Mercalli Scale. They then apply this knowledge to the Haiti earthquake.

5. Discuss What to Do and Why – Everyone wants to help, but how? To whom should you give money? What kinds of aid will help the most now and in the long term? Read the [ongoing discussion on these issues](#) on the Room for Debate blog. Then find out how specific aid organizations, such as [UNICEF](#), [CARE](#), [Doctors Without Borders](#) and the [Red Cross](#), raise money and provide aid for disasters like the one in Haiti as well as provide ongoing support around the world. Students can then [choose one organization](#) and hold a fundraiser to support its relief efforts in Haiti.

Aftermath of Earthquake Disaster in Haiti

On January 12, 2010 the nation of Haiti experienced a massive earthquake centered near its capital, Port-au-Prince. Since then, images of devastation have dominated the headlines, and governments, NGOs, individuals, and communities have contributed to rescue and relief efforts. A wide range of resources and tools to support discussions about the disaster's various dimensions--geological, political, and cultural--and about Haiti's history are available on <http://www.learner.org>

See how earthquakes happen and what they look like as people experience them in program 9. "Earthquakes" of Earth Revealed <<http://www.learner.org/resources/series78.html>>. The program discusses faults, waves, and the transfer of energy from the epicenter, and presents histories of the seismograph and Richter scale. Program 5. "Birth of a Theory" and program 6. "Plate Dynamics," provide history and details of plate tectonics, the geophysical system behind earthquake events.

To better understand how population concentration contributes to the death toll in natural disasters such as earthquakes, review the online text chapter "Urbanization and Megacities" <<http://www.learner.org/courses/envsci/unit/text.php?unit=5&secNum=6>> from The Habitable Planet, unit 5. "Human Population Dynamics."

NASA LAUNCHES WEB SITE FOR TEENAGERS THAT WANT MORE CLASS

WASHINGTON - NASA has launched a new Web site created specifically for teenagers that provides teens access to current NASA spacecraft data

for use in school science projects, allows them to conduct real experiments with NASA scientists, and helps them locate space-related summer internships.

Called "Mission:Science," the site is designed to showcase NASA's educational science resources and encourage students to study and pursue careers in science, technology, engineering and math, or STEM.

"This site will allow teenagers, who have their own unique language and style, to get information faster and have fun at the same time," said Ruth Netting, manager of education and outreach activities in NASA's Science Mission Directorate at NASA Headquarters in Washington. "NASA provides a vast amount of STEM information online for students of all ages, but this Web site boosts the content available for this age group."

The site also features social networking tools, links to enter science contests or participate in a family science night, information about college research programs, and an array of NASA images, animation, videos and podcasts.

NASA's Science Mission Directorate studies Earth, explores the planetary bodies of our solar system, examines the sun and its influence throughout the solar system and scans the universe to gauge its expanse while searching for Earth-like planets. To access the Mission:Science Web site, visit <http://missionscience.nasa.gov> <<http://missionscience.nasa.gov>>

April 11-17, 2010 National Environmental Education Week,
Be Water and Energy Wise: The Water-Energy Connection

Our nation's water and energy resources are increasingly important topics of discussion not just in the news, but in classrooms and homes as well. Recognizing the importance of conserving both water and energy to protect the planet and reduce costs -- and acknowledging the connection between water and energy -- EE Week's 2010 theme is [Be Water and Energy Wise](#). [Register today](#) to participate in EE Week 2010.

In addition to EE Week's library of resources and curricula on water and energy, we have developed a new resource page for educators on [The Water-Energy Connection](#). In the United States, generating power consumes 3 percent of our nation's water annually and 13 percent of the energy produced in this country each year is used to treat, transport and heat our water. Conserving water saves energy and vice versa. The water-energy connection is complex but provides an excellent opportunity to get students thinking about the interrelatedness of ecological and environmental concerns.

Ready to start teaching about the water-energy connection? [Register today!](#)

EARTH DAY – 40th Anniversary

Register for National Environmental Education (EE) Week, April 11-17, 2010

Earth Day Network is proud to be a [continued National Partner of the National Environmental Education Foundation's annual EE Week](#), the nation's largest environmental education event, held each year during the week leading up to Earth Day. EE Week's 2010 theme is Be Water and Energy Wise, and will involve resources, activities and curricula, including several developed by Earth Day Network, focused on the connection between water and energy and the importance of conserving both. When you register for EE Week, you will join a national network of educators dedicated to increasing the environmental literacy of K-12 students. You will also receive certificates of participation, free online resources, information on professional development and funding opportunities, and access to discounts on educational materials just for EE Week participants. Register today at www.eeweek.org/register.

Growing International Partnerships

Earth Day Network is partnering with several other organizations that harness the amazing power of youth to implement change in their environment for Earth Day 2010. Your students can write letters calling for a green future with Global Response, promoting the [Kids for Patagonia Letter Writing Project](#), which aims to galvanize political will and public support for stopping construction on the Patagonian wilderness in Chile. Your school can also join Earth Day Network in supporting the [BARKA Foundation](#), an UN-affiliated NGO based in the U.S. and Burkina Faso, West Africa, to promote the Live Earth's Run for Water and the International Show of Peace, focused on creating clean water accessibility, empowering women and building bridges between the U.S. and Africa. Join students from around the world to be part of 13-year-old Aitan Grossman's international global warming song project, [KidEarth™](#), and add your voice to raise awareness about climate change. Aitan's song is being counted toward the [Earth Day 2010 Billion Acts of Green™ campaign](#). Learn more about these and other exciting worldwide collaborations at www.earthday.net/education.

[The Kids In Micro-g! Web Page](#) has been recently updated with a series of six video modules to help student experimenter design teams with development of their experiments. Hosted by NASA Educator Nathan Lang and NASA Astronaut and former International Space Station Commander Mike Fincke, these brief video modules discuss the ISS and microgravity, considerations for designing a microgravity experiment, the scientific method, and a recap of the Kids In Micro-g! Design Challenge. Bonus videos of microgravity demonstrations onboard the ISS from Fincke and fellow station astronauts Greg Chamitoff and Nicole Stott during their past missions are also included. A matrix of frequently asked questions has also been added as a reference. The FAQ list

will be updated weekly as new questions arrive and are answered.

NASA will be accepting experiment proposals through **Feb. 19, 2010**.

For more information about the Kids In Micro-g! Challenge, visit
http://www.nasa.gov/mission_pages/station/science/nlab/experimentchallenge.html.

If you have any questions about this opportunity, please contact the ISS Payloads Office at jsc-iss-payloads-helpline@mail.nasa.gov or call 281-244-6187.

Announcing the 2010 Classroom Earth National High School Challenge

Apply now for the 2010 National High School Challenge, a program encouraging teachers to incorporate environmental education into all subject areas through innovative teaching strategies. Teachers from around the nation can receive up to \$4,000 to make their ideas become reality.

Teachers from **all** subject areas should apply.

Deadline is Monday February 22, 2010.

Classroom Earth's mission is to increase the ability of high school teachers to integrate environmental education into curricula so that students are prepared to be a part of environmental solutions.

For details and to apply go to: <http://classroomearth.org/challenge/2010>

White House Releases Science and Engineering Indicators 2010 Report

The National Science Board released its Science and Engineering Indicators 2010 report. According to the report, produced every two years, the state of U.S. science and engineering is still strong, but our nation's global primacy in science and engineering has significantly dropped in recent years, largely because of rapidly increasing capabilities among East Asian nations, particularly China. The detailed report also presents information about elementary and secondary science and math education, the science and engineering labor force, and public attitudes and understanding about science and technology, among other things

National Lab Day

Have you heard about National Lab Day? More than 700 NSTA members have already signed up for it.

What is National Lab Day (NLD)? It's more than just a day. It's a nationwide movement to bring together stakeholders in communities of support where science, technology, engineering, and math (STEM) professionals and teachers work together to provide more science experiences to students.

President Obama announced National Lab Day in November as part of the Administration's Educate to Innovate campaign. More than 6.5 million professionals from 200 STEM organizations are being asked to join NLD, which is tentatively set for May 2010.

Science educators will be critical to the success of National Lab Day. NLD projects are teacher-driven. At the NLD website, teachers will be partnered with outside experts to assess current labs, update or refurbish lab equipment, conduct equipment and materials inventory, or clean and repair equipment. Or teachers can elect to have STEM professionals work with them to:

- Implement hands-on projects,
- Start a fund-raising effort to buy needed supplies,
- Help with science fairs,
- Mentor a student,
- Coordinate and host field trips,
- Provide internship opportunities,
- Donate materials, and
- Assist with lesson plans.

Chinese New Year

The Lunar New Year dates from 2600 BC, when the Emperor Huang Ti introduced the first cycle of the Chinese zodiac.

Because of cyclical lunar dating, the first day of the year can fall anywhere between late January and the middle of February. On the Chinese calendar, 2010 is Lunar Year 4708.

On the Western calendar, the start of the New Year falls on **Sunday, February 14, 2010 — The Year of the Tiger**. This year, the date has special significance since it also happens to fall on [Valentine's Day](#) making it a doubly auspicious day to celebrate in the West. *(from the Internet)*

For the tiger in 2010, any recent setbacks or obstacles can be overcome, so look forward to a year in which to really shine, either personally or professionally.

NASA Opportunity

The Environmentally Responsible Aviation project of the Integrated Systems Research Program, Aeronautics Research Mission Directorate, has announced a new student contest. The Green Aviation Student Challenge invites students to propose ideas and designs for future aircraft that use less fuel, produce less harmful emissions and make less noise.

The contest spans a full calendar year, so high school and college students have multiple opportunities to enter. The deadline for the first round for high school entries is **May 1, 2010**. First-round entries from college students are due **Dec. 15, 2010**. The second round deadlines are in December 2010 for high school entries and May 2011 for college entries.

Students are asked to submit a well-documented paper and a short video to explain their ideas. The ERA project intends to reward top-scoring students by airing their videos on NASA Web sites, and students may win a trip to an aviation event. Top college students may also earn a paid internship at a NASA center.

For more information about the high school contest, visit http://aero.larc.nasa.gov/era_high/competitions_high_era.htm.

For more information about the college contest, visit http://aero.larc.nasa.gov/era_univ/competitions_univ_era.htm.

Questions about the contest should be directed to Elizabeth Ward at Elizabeth.B.Ward@nasa.gov.

SCIENCE SNIPPETS

Nature Notes:

River otters have rebounded due to protection and stocking. These excellent swimmers are very playful and fun to watch (if you can spot any). They have been protected since 1952 and a reintroduction program began 30 years ago.

Staying Safe:

Disinfectants may be a double-edged sword in the fight against hospital-borne diseases, say scientists in a study to be published in the monthly *Microbiology*. Slowly introducing higher and higher levels of disinfectants to lab cultures of pathogens, including *Pseudomonas aeruginosa*, the fourth most commonly-isolated nosocomial pathogen accounting for 10.1% of all hospital acquired infections, the pathogen developed a 12-fold resistance to antiseptics.

Lead author Gerard Fleming, National University of Ireland, says, "use disinfectants properly. By misusing them you're making an environment where you've now lost the first and second lines of defense. There's a dangerous tendency toward using disinfectants as a clean-all,

when there is a much more potent, proven remedy to rid oneself of germs. Soap and water: I am not messing with you”, he said.

Making hamburger safe by killing E. coli and salmonella using ammonia injections is faltering. In 2007, the U.S. Department of Agriculture decided this treatment was so effective that they exempted routine testing of (the company) Beef Products used in hamburger (that included fatty trimmings once relegated to pet food and cooking oil).

The federal school lunch program used an estimated 5.5 million pounds of the processed beef last year. Records obtained by the New York Times showed that school lunch testing reveals that E. coli and salmonella pathogens have been found dozens of times. The Dept. said it was revoking Beef Products exemption. But some school lunch officials are still buying from the firm that has “substantially lower than ordinary meat trimming, saving about \$1million a year.”

The firm says it is dedicated to being responsible and is continually refining its operations. The USDA first banned the sale of meat found to be contaminated with the O157:H7 strain of E. coli found 15 years ago after a deadly outbreak traced to Jack in the Box restaurants. (*excerpted from the New York Times, Michael Moss, author*)

Environmental issues:

A revolution in energy production? As a search for alternate fuel sources go forward, drilling in the Marcellus Shale for natural gas has us facing considerable risk to public health and safety from contaminated drinking water and dangerous airborne emissions, including toxic chemicals such as benzene. A 1,000 megawatt natural -gas power plant releases about 5 tons of sulfur dioxides, 21 tones of nitrogen oxides, 1.6 tons of carbon monoxide, and 0.9 tons on particulates daily.

Some 8,000 permits for shale-gas drilling were issued in PA last year and 40,000 new permits are anticipated in the near future. The Safe Water Drinking Act exempted hydraulic fracturing – this allows companies to withhold disclosure of the chemicals they use. A great amount of liquid is used in hydraulic fracturing. Much of it comes back up out of the well. But there are no state mandated procedures for how to dispose for this liquid. Is this “clean energy”?

A qualitative meta-analysis reveals consistent effects of atrazine on freshwater fish and amphibians. [Environmental Health Perspectives doi:10.1289/ehp.0901164s](https://doi.org/10.1289/ehp.0901164s).

Rohr JJ and KA McCoy. Synopsis by [Heather Hamlin](#)

The widely used herbicide atrazine may be responsible for a host of health problems seen in fresh water fish and amphibians, according to researchers who evaluated a group of published studies that examined the chemical's effects. The weed-killer atrazine – in most cases – does not outright kill fish and amphibians in the wild, but it can routinely causes indirect health effects that can alter important life functions in the two groups. A new assessment of previous studies finds that some of the effects were permanent and not seen until months after the animals encountered the chemical.

Exposure to atrazine levels found in the environment reduced immune function, sex organ development and function, and the production of steroid hormones in both groups of animals. The oft times slight changes to these important body systems can affect the timing of metamorphosis in amphibians and behavior in amphibians and fish – changes that could affect an animal's survival.

The study also found that atrazine's effects are often non-monotonic, meaning that lower doses could in fact be more harmful than higher doses. For example, atrazine affected how fish swam in all the studies analyzed. The exposures increased hyperactivity at the lower concentrations reported but not at higher levels.

Atrazine is the second most common herbicide in the US and is used heavily for the production of corn, sugarcane and other crops. The safety of atrazine is currently being re-evaluated by the US EPA because of a growing body of scientific literature that raises concerns about the chemical's safety.

This study, called a meta-analysis, is the first to be conducted by a group that is not funded by the corporation that manufactures atrazine and highlights a growing concern for the heavy use of atrazine in the production of food crops. A meta-analysis combines data from similar types of studies to look for similarities and general impacts to exposures. In this case, researchers used the approach to identify related effects in wildlife from exposure to atrazine levels that are found in the environment.

The authors focused on effects to behavior; metamorphic traits; and immune, endocrine, and reproductive systems in amphibians and fish. Specifically, atrazine consistently increased hyperactivity and slowed escape behavior in both groups, decreased smelling in fish, increased parasite and viral infections in both amphibians and fish and altered development of male sex organs in both groups.

[Toxic ingredient in Botox could become terrorist tool.](#) A speck of botulinum toxin smaller than a grain of sand can kill a 150-pound adult. The multibillion-dollar market for anti-wrinkle drugs has spawned an underground network of online suppliers, who do not ask for prescriptions or identification. [Washington Post](#) [Registration Required]
<http://www.washingtonpost.com/wp-dyn/content/article/2010/01/24/AR2010012403013.html>

Education

From ASCD – Multiple Measures:

In the last 50 years, the United States has descended from viewing tests first as a useful tool, then as a necessity, and finally as the sole instrument needed to evaluate teachers, schools, districts, states, and nations (Bracey, 2009). In a nation where test mania prevails, tests will occupy part of the education landscape until we can dig ourselves out of that 50-year hole. In the meantime, it's interesting to consider what some of the well-known testing programs measure and what their appropriate (and inappropriate) uses might be.

Claims that recent gains in NAEP trends indicate the success of No Child Left Behind have been widely disputed—in fact, it appears that NAEP increases slowed after NCLB came into existence (Fuller, Wright, Gesicki, & Kang, 2007). Such claims would not be valid in any case, because the NAEP was not designed to measure the performance of schools. The assessment attempts to

cover a broad range of knowledge and skills, but it doesn't rest on any specific curriculum or theory of learning. NAEP has nothing to say about education quality at the district or school level and little to say about the smallest reported unit, the state.

Both politicians and the media have relentlessly linked scores on national and international assessments to economic health. Release of the PISA results in 2004, for instance, led to headlines like "Economic Time Bomb" (Kronholz, 2004) and "Math + Test = Trouble for the U.S. Economy" (Chaddock, 2004).

This notion is easily refuted by the example of Japan, which led the world in test scores and economic growth in the 1980s but saw its economy sink into the Pacific in the 1990s. Throughout this period, Japanese students continued to ace tests, but Japan's economy sputtered into the new century and slipped back into recession in 2007.

BLUNT INSTRUMENTS

(This) brief look at several widely recognized assessments demonstrates that none of these tests are useful for comparing the quality of schools or teachers—especially in the United States, with its diverse population, high poverty rates (by far the highest among developed nations), and wide variety of pedagogical philosophies. As former Commissioner of Education Statistics Mark Schneider said, the tests are "blunt instruments. ... A dozen factors could be behind a nation's test score" (Cavanagh & Manzo, 2009, p. 16).

Nations vary greatly in the extent of their efforts to motivate students to do well on the assessments. In Germany, where PISA has likely received more attention than in any other country, PISA-prep books can be found in airports. Observers at a school in Taiwan reported that on PISA testing day, parents gathered with their children on the school grounds urging them to do well. The students then marched into the school to the national anthem and heard a motivational speech from the principal (Sjøberg, 2007).

A Better Way

To be related to school quality, tests must be sensitive to instruction. Most of the tests used for accountability today aren't—in fact, the manner in which they are constructed *prevents* them from being sensitive to instruction. That means that schools under the gun to raise test scores increasingly rely on strategies that get immediate, but short-lived results. Evaluation based on instruction-insensitive tests cannot help but reduce the quality of teaching (and teacher morale).

The best assessment system, but a difficult one to bring off, begins with teachers rather than with external measures that are imposed on them. The state of Nebraska developed such a system—the School-based Teacher-led Assessment and Reporting System (STARS)—based on instruction-driven measurement as opposed to the dysfunctional, measurement-driven instruction that predominates elsewhere. (Alas, it appears to have been almost eclipsed by the statewide program installed to meet NCLB requirements.) It is that kind of system—not NAEP, TIMSS, PISA, or similar tests—that will tell us what we need to know about our schools.

Gerald Bracey is an independent researcher and writer specializing in assessment and policy issues. He resides in Port Townsend, Washington; gbracey@q.com. His most recent book is *Education Hell: Rhetoric vs. Reality* (Educational Research Service, 2009).

Experts: Science instruction should begin in preschool

Some academic experts are recommending that science be taught to students beginning in preschool, and a recent push to promote science, technology, engineering and math education in schools is adding urgency to their cause. Efforts to improve science teaching in preschools include specialized training for teachers and a "Young Scientist" curriculum developed with help from the National Science Foundation that helps teach preschoolers physical-science concepts by building structures and playing with water.

NCLB News

The Obama administration has launched an effort to rewrite the No Child Left Behind law, with a proposed increase in federal spending, a pledge to make the Bush-era school reform program more flexible and an appeal to Republicans for bipartisan cooperation.

To grease the legislative wheels, Education Secretary Arne Duncan said, the administration will reserve \$1 billion to fund programs that may emerge through a revision of the 2002 law. In addition, he said, President Obama is proposing to raise elementary and secondary education spending by \$3 billion in the fiscal year that begins in October.

Overall, Duncan said, the education budget would increase by 6 percent. That would be the most significant annual increase since 2003, not counting the large infusion of funds made last year through the economic stimulus law to prevent teacher layoffs.

With the budget proposal, Obama seeks to turn the page on an era of reform that his predecessor, George W. Bush, defined through a campaign slogan that morphed into a school accountability movement.

No Child Left Behind mandated an expansion of standardized testing to measure progress toward closing student achievement gaps -- and imposed sanctions on schools that fell short. The concept has become ingrained in public education, but many experts say the law is overly punitive and ripe for revision.

"NCLB needs to be fixed right now," Duncan told reporters. "Clearly our goal would be this year."

Enacting a new version of what is formally known as the Elementary and Secondary Education Act would be a heavy lift as lawmakers face midterm elections. The law and the issues involved -- standardized testing, teacher quality and many facets of school reform -- are complex. Congress last tried to rewrite the measure in 2007 but fell short.

ASCD NEWS

"You Can Get Louder, But It's Better to Use Your Evidence"

Teaching leadership skills via the four *Rs*—rigor, relevance, relationships, and results—was the headline on one of [last week's most-clicked ASCD SmartBrief stories](#). But throughout the story on San Francisco's City Arts and Technology High School's ability to build academic futures for its students, debate and civil academic discourse figures prominently as the vehicle that unites these four *Rs*.

A couple of free articles from our archives dig deeper into the power of Socratic inquiry and dialectic discourse in the classroom; check out [What Would Socrates Say?](#) and [Clash! The World of Debate](#).

Do you have your own twist on the four *Rs*? What instructional approaches pair well with your teaching philosophy

DATABASE

Learningscience.org Tools for teaching science, real time data collection, simulations, inquiry-based lessons, interactive web lessons, and micro worlds. Visit www.learningscience.org/index.htm

Fizzy's Lunch Lab Lessons Lesson plans from the web-only series on healthy eating from PBS KIDS at www.pbs.org/teachers/lunchlab

Theoretical Physics Information Materials from Canada's Perimeter Institute. www.perimeterinstitute.ca/en/Outreach/Alice_andBob_in_Wonderland/Alice_and_Bob_in_Wonderland.Nine_60_sec.chalk cartoons posing some weighty science questions to spark class discussion and inquiry.

Connect a Million Minds From Time Warner Cable to connect one million children with engaging out-of-school science, technology, engineering, and math (STEM) experiences. www.connectamillionminds.com

The Secret Life of Trees Animated presentation for grades 3-5 explaining in detail how an acorn becomes a tree. Teacher's Guide included. <http://urbanext.illinois.edu/trees2/02/html>

Thinkgreen K-12 lessons, videos, and interactive tools to help students rethink what they now about waste. Downloadable posters promoting recycling ideas. www.thinkgreen.com
Click on Classroom Tools.

Explore Mars Now For grades 3-12. Students can learn what it is like to visit Mars through an interactive website. www.exploremarsnow.org

NASA Robotics Education Resources including classroom lesson plans, an image gallery, robotics careers, links to NASA robotics websites. www.nasa.gov/education/robotics

Conservation Education USDA Forest Service's Conservation Education website offers links to resources on climate change, water, and wild land fires. Forest Services curricula and more. <http://fs.usda.gov/conservationeducation>

Biology for Kids USGS and the National Biological Information Infrastructure introduce elementary students to environmental issues: stories, games, puzzles, coloring pages. <http://kids.nbii.gov/index.html>

New US Forest Service Conservation Education Web Site

The US Forest Service's new Conservation Education Web site offers conservation educators a number of resources including curricula, multimedia, guidelines for designing and implementing effective conservation education programs and tips on developing materials. Additionally, the Educator Toolbox contains resources, professional development opportunities and materials to help teachers understand and present conservation information to their students. [Learn more](#)

Still Developing the Toolbox: Making EE Relevant for Culturally Diverse Groups

Educators know that learners' cultural perspectives influence the way they learn and interpret information. This article, produced by the Environmental Education & Training Partnership, profiles programs and people connecting with culturally diverse communities through environmental education programs. [Download the PDF](#)

U.S. Fish & Wildlife Service Schoolyard Habitat Project Guide

The Schoolyard Habitat program helps teachers and students create wildlife habitat on school grounds. This guide provides the basic steps needed to restore or create wildlife habitat. The process incorporates critical thinking and decision-making skills while challenging students in reading, writing, science, math and language arts. [Learn more](#)



For K to 12 Programs - SACP/SSP

CALENDAR OF EVENTS

March 6-8 ASCD Annual Conference and Exhibit Show
San Antonio, TX; www.ascd.org/annualconference; 800.933.27233

NSTA CONFERENCES	
March 18-21, 2010	2010 National NSTA Conference

Philadelphia, PA: Meeting the Unique Needs of Urban and Rural Science Learners
Connecting the Content: Between, Within, and Among Subjects
Closing the Digital Generation Gap Between Teachers and Students
Rekindling the Fires of Science Teaching and Learning

2010 Regional Conferences

Oct. 28-30 Kansas City MO
Nov. 11-13 Baltimore, MD
Dec. 2-4 Nashville, TN
Mar. 10-13, 2011 San Francisco, CA – National Conference

Feb. 14 Chinese New Year

March 6-8 ASCD Annual Conference and Exhibit Show
San Antonio, TX; www.ascd.org/annualconference; 800.933.27233

March 2-30 An Interdisciplinary Approach to Global Environmental
Issues. University of Pittsburgh. konrad@pitt.edu

April TBD Two-day workshop, Clarion University
Integrating the programs Environment and Health: A Systems Approach, Food-Land-
People, and NASA programs and materials. Prepare for “Environmental Day”

April TBD Green Impact, Phipps Conservatory and Botanical Gardens
Join this workshop in concert with Environmental Day.

June 23-24 Two-day workshop . Elementary GLOBE, Beechwood Farms
Exploring the NASA Elementary GLOBE Program; hands-on activities, each participant will
receive the five booklets in this program.

July TBD Two-day workshop, Exploring Climate Change
These workshops will be held at the Carnegie Museum of Natural History (CMNH) sites.
TDB. Contact konrad@pitt.edu

September 29 - October 2, 2010

The North American Association for Environmental Education (NAAEE) 39th Annual Conference
Buffalo Niagara Convention Center in Buffalo-Niagara, New York.

Many Thanks to Our Contributors

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