



.....from the Editor  
by Norm Schmidt

**How to be a Green Citizen  
without Breaking a Sweat**

I often wonder why individuals who still smoke often treat the earth as if it were their own personal ash tray. Especially the people who drive and do not want to ash-up the ash tray in their car; "Oooh, it smells bad . . . and it is so easy to open the window and . . . poof, it's gone."

I admit that it is hard to find too much fault with the few people that smoke filterless cigarettes and, if they make sure they are extinguished, toss them away. They will clearly biodegrade in a hurry. But not while driving since it is too easy to get in that bad habit and sometimes it may still be smoldering and start a fire. Besides, they are likely to have a short lifespan anyway.

I do toss apple cores, or peach pits or the like out the window while driving and friends that know my abhorrence of folks that litter from their car are surprised. I do take care to throw the fruity remains off the roadway in order to not tempt critters to investigate something on the pavement.

I also wonder why individuals will throw wrappers and other non-biodegradable stuff on the ground while walking or driving or cruising on the water. It is so easy to save it and put it in the trash-can later.

But these are too obvious. Let me suggest that I am a reasonably green urban dweller

and these are a few of the things that I do on a consistent basis in order to "act locally."

1. Recycle. I am pleased that the city has chosen the area in which I live to provide huge recycle bins and even larger trash bins. I admit to using plastic bags to gather the plastic, glass and metal items for recycling. I wish there were alternate methods but the city does not want us to simply dump everything – uncontained – in the bin. I either tie up (using jute string) or put my old newspapers, magazines and other appropriate paper and cardboard (broken down) in paper bags. I usually get the paper bags as come-ons in the Sunday paper every now and then when some store (Staples) sends a big paper bag and tells you to fill it up at their store and get some discount on all the items inside. I also get some of the paper bags from the store where I purchase alcoholic beverages.....they seem to favor paper over plastic.

When the city did not offer curbside recycling, I would take the recyclables to a local recreation center that had recycling bins in the parking lot. I could usually do this on the way to some place so my trip had multiple purposes.

I live alone so I usually put the recycle bin on the curbside about once a month. The trash goes to the curb about once every seven weeks.

2. Compost. I have two compost tubs in my kitchen next to the sink. One holds about 3 quarts of stuff. The other is much taller **Cont. p 2**

If you weren't at the Fall Conference you can see pictures of some of the folks that were there, inside. Here's Row's opinion of those of you that did not attend:



**President's Column**  
Mark Waner,  
CRCST President

I hope this newsletter finds you enjoying a well deserved break. It is an honor to have begun serving my term as president this past October. After living here for nearly 11 years I continue to be impressed by the range of talent and resources for science education experiences in Northeast Ohio. We have: knowledgeable and talented teachers from early childhood through post graduate studies, world-class museums and informal science education providers and incredible natural resources. We also have a great market for well educated people, with many healthcare and technical job opportunities and multiple institutions of higher education. As I begin serving as president of CRCST I have been trying to formulate some thoughts on what we can do as an organization to extend the reach and impact of CRCST to better serve our **Cont. p 12**

From p.1

and holds about 6 quarts. I used to be very careful about keeping the vegetable material in the tall container and the meat scraps and bones in the smaller container. There are times now when I mix it all together knowing I will get rid of it quickly (I have had the misfortune of forgetting and finding lots of maggots in and crawling out of the tub). Fruit flies are annoying as well but if you empty the containers regularly there is no problem.

I have a spare lot with a small garden and an area where I have a compost pile that rotates every year or two. Throughout the year I tend to have enough leaves and dry vegetable matter in the pile that when I add the fresh (vegetable only) stuff I lift the dry stuff on top and throw the fresh stuff in and cover it again. I dispose of the meat and bones by digging down about a foot either under the compost pile or in an exposed area of the garden and tossing the material in the hole and covering with soil. The upper level of the topsoil is very loaded with insects, bacteria, fungus and other invertebrates that make quick work of the fleshy stuff. The bones break down very slowly but are great for the plants.

In the winter there is sometimes a bit too much snow and frozen ground to accommodate the digging. The vegetable matter can still be put under the top layer of the compost pile using a shovel or spade, but the meat scraps can be a problem. Luckily it is cold out. So, I put the container with meat scraps out on my deck until the snow recedes enough (which it usually does on an irregular basis). I then dig under the compost pile to bury the scraps. As you know the decomposition in the compost produces heat so you can usually dig down, even in cold January, to get rid of the meat scraps and bones.

3. Reusable shopping bags. We all gather cloth or other fabric bags when we go to meetings. You can also purchase a few at your local grocery for a reasonable price. Use them for your groceries and other shopping. If you get in the habit you will not likely forget them very often. You can also reuse the plastic bags that you get at the store.

I have become good at this and now I have to ask some of my friends that accumulate huge stores of plastic bags to give me some for my recyclables.

4. Eschew fire works. I know they look pretty and make a lot of loud (annoying?) noise but they also produce huge amounts of heavy metal pollution and acid-rain-causing chemicals that go into the atmos-

-phere and eventually into the soil and water resources. When given the opportunity, tell others about the good reasons to promote laser light shows instead of the polluting fireworks that we seem to take for granted (like smoking cigarettes and driving cars without catalytic converters and using leaded gas during most of the 20<sup>th</sup> century).

So, these are just a few things that I feel would lead to a cleaner, healthier environment, and really, how hard is this? Join me, and do a little proselytizing as well. Next time I'll tell you about my plan for green burial.

## Science in the News

### Tracking trash

Project aims to raise awareness of how garbage impacts the environment  
from MITNews - July 15, 2009



**First test deployment of a coffee cup in Seattle.**  
Photo / Musstanser Tinali at SENSEable City Lab

What if we knew exactly where our trash was going and how much energy it took to make it disappear? Would it make us think twice about buying bottled water or "disposable" razors?

A team of MIT researchers today announced a major project called Trash Track, which aims to get people thinking about what they throw away. Trash Track relies on the development of special electronic tags that will track different types of waste on their journey through the disposal systems of New York and Seattle. The project will monitor the patterns and costs of urban disposal and create awareness of the impact of trash on our environment - revealing the last journey of our everyday objects.

"Trash is one of today's most pressing issues - both directly and as a reflection of our attitudes and behaviors," says Professor Carlo Ratti, head of the MIT SENSEable City lab. "Our project aims to reveal the disposal process of our everyday objects, as well as to highlight potential inefficiencies in today's recycling and sanitation systems. The project could be considered the urban equivalent of nuclear medicine - when a tracer is injected and followed through the human body.

"The study of what we could call the 'removal chain' is becoming as important as that of the supply chain," the lab's associate director, Assaf Biderman, explains. "Trash Track aims to make the removal chain more transparent. We hope that the project will promote behavioral change and encourage people to make more sustainable decisions about what they consume and how it affects the world around them."

Trash Track will enlist volunteers in two target cities - New York and Seattle - who will allow pieces of their trash to be electronically tagged with special wireless location markers, or "trash tags." Thousands of these markers, attached to a waste sample representative of the city's overall consumption, will calculate their location through triangulation and report it to a central server, where the data will be analyzed and processed in real time. The public will be able to view the migration patterns of the trash online, as well as in an exhibit at the Architectural League in New York City and in the Seattle Public Library, starting in September 2009.

Trash Track was initially inspired by the Green NYC Initiative, the goal of which is to increase the rate of waste recycling in New York to almost 100 percent by 2030. Currently, only about 30 percent of the city's waste is diverted from landfills for recycling. "We hope that Trash Track will also point the way to a possible urban future: that of a system where, thanks to the pervasive usage of smart tags, 100 percent recycling could become a reality," says project leader, Musstanter Tinauli.

"Carlo Ratti and his team have come up with a visionary project to help people take ownership of their pollution," says Roger Highfield, editor of New Scientist magazine, which will be helping to deploy a third batch of tags in London, U.K. "It's all too easy to throw something in the garbage and wash your hands of it if you don't know what effect you are directly having on the environment."

With this project, the MIT SENSEable City Laboratory seeks to couple high-tech, rapidly evolving technology with an everyday human activity: trash disposal. Trash Track builds on some of the lab's previous projects - including Real Time Rome and the New York Talk Ex-

change - gathering, assessing and analyzing real-time data to improve urban functionality.

The Trash Track team at the SENSEable City Lab is composed of Carlo Ratti, Assaf Biderman, Rex Britter, Stephen Miles, Musstanter Tinauli, E. Roon Kang, Alan Anderson, Avid Boustani, Natalia Duque Ciceri, Lorenzo Davolli, Jennifer Dunnam, Samantha Earl, Lewis Girod, Srabjit Kaur, Armin Linke, Eugenio Morello, Sarah Neilson, Giovanni de Niederhausern, Jill Passano, Renato Rinaldi, Francisca Rojas, Louis Sirota and Malima Wolf.

*Thanks to Kathleen Rocco, Cuyahoga County Solid Waste District educator for this article.*



Live music from the Stone Labs exhibitor at the Fall Conference.

### Science In the News - Today's Headlines - November 13, 2009

Sniff Test to Preserve Old Books  
from BBC News Online

The key to preserving the old, degrading paper of treasured, ageing books is contained in the smell of their pages, say scientists.

Researchers report in the journal Analytical Chemistry that a new "sniff test" can measure degradation of old books and historical documents. The test picks up and identifies the chemicals that the pages release as they degrade.

This could help libraries and museums preserve a range of precious books. The test is based on detecting the levels of volatile organic compounds. These are released by paper as it ages and produce the familiar "old book smell."

<http://snipr.com/t7t3q>

**Continued on Page 5**

Fall Conference Photos - Oct. 24, 2009  
at John Carroll University  
Thanks to Phyllis Wilkes



### From Page 3

#### Bird "Sings" Through Feathers from National Geographic News

Solving a longstanding puzzle among bird experts, scientists have found that the sharp, violin-like sounds of a South American songbird come not from the beak but from a suite of specially evolved, vibrating feathers.

A new study offers the first hard evidence that birds use feathers for audible communication as well as for flight and warmth.

In 2005 Kimberly Bostwick theorized that the male club-winged manakin--a tiny bird of the Andean cloud forest--was vibrating a club-shaped wing feather against a neighboring, ridged feather to "sing" when trying to attract females. Proving the feather-song connection, though, would be a huge challenge.

<http://snipr.com/t7t40>

#### Human-Chimp Gene Comparison Hints at Roots of Language from Wired

By comparing how a gene critical for language works in humans and chimpanzees, researchers have identified an entire network of genes involved in the incredible linguistic powers of Homo sapiens.

The findings don't explain how language functions at the biological level, or exactly what changes were needed to put an otherwise unremarkable monkey on its chattering, Earth-dominating trajectory. But they do give researchers a foundation for investigating these questions.

... The target of the analysis was FOXP2, a gene that rose to scientific prominence during the study of a London-based family afflicted by hereditary speech disorders.

<http://snipr.com/t7t4g>

#### Brown Pelican Removed From Endangered Species List

from the Los Angeles Times (Registration Required)  
Reporting from New Orleans -- Federal officials announced Wednesday that they were removing the brown pelican from the endangered species list, capping a century-long recovery that started under President Theodore Roosevelt.

The brown pelican is a fixture in Southern California and along the Gulf of Mexico from Texas to Florida, where Roosevelt established the first national wildlife refuge on Pelican Island to protect the bird from human slaughter.

It is an icon in Louisiana, where it is the state bird and where Interior Department officials assembled

Wednesday at the Big Branch Marsh National Wildlife Refuge near New Orleans to proclaim the brown pelican "fully recovered" and no longer in need of federal protection.

<http://snipr.com/t7t4x>

#### Bug Expert Joe Keiper Uses Insects as Clues from the Cleveland Plain Dealer

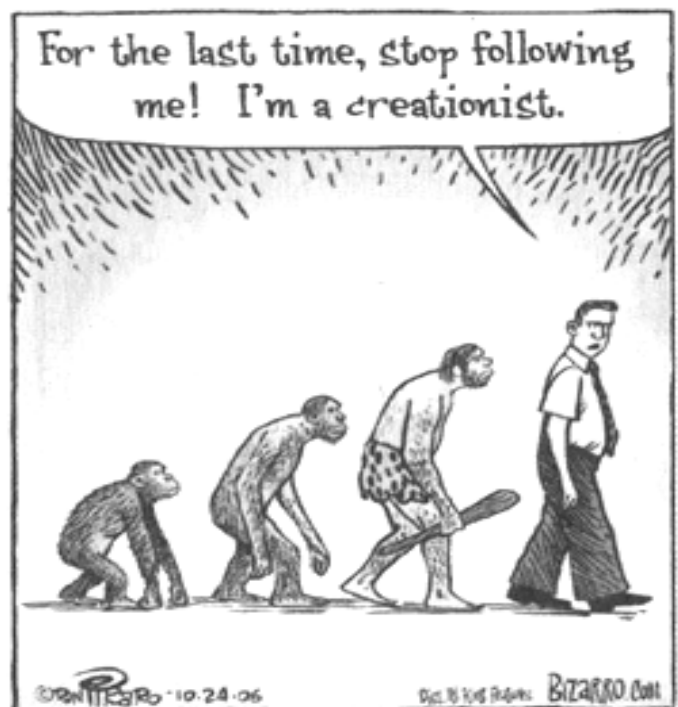
CLEVELAND, Ohio -- On the day before Halloween, as grim-faced detectives and crime scene investigators searched the foreboding house where suspected serial killer Anthony Sowell lived, a man arrived carrying a folded butterfly net and a small blue fishing tackle box filled with glass vials and surgical tweezers.

Joe Keiper spends most of his days in a basement lab at the Cleveland Museum of Natural History, a bright space that holds cabinets stuffed with hundreds of thousands of carefully preserved insects. It's a bug-lover's dream. This afternoon, Keiper descended into a nightmare. In the dank basement, police had unearthed a decomposed body from the dirt floor.

... As one of two dozen or so U.S. entomologists with forensic experience, Keiper occasionally works as a law enforcement consultant. He uses his knowledge of the types of bugs that dead bodies attract, the timing of their arrival, and the rate of their reproduction and growth to judge how long a victim likely has been dead, among other things.

<http://snipr.com/t7t5w>

BIZARRO | DAN PIRARO



### In SUSY We Trust: What the LHC Is Looking For from New Scientist

Any day now, if all goes to plan, proton beams will start racing all the way round the ring deep beneath CERN, the Large Hadron Collider's home on the outskirts of Geneva, Switzerland.

Nobel laureate Steven Weinberg is worried. It's not that he thinks the LHC will create a black hole that will engulf the planet, or even that the restart will end in a technical debacle like last year's. No: he's actually worried that the LHC will find what some call the "God particle," the popular and embarrassingly grandiose moniker for the hitherto undetected Higgs boson.

... Why so? Evidence for the Higgs would be the capstone of an edifice that particle physicists have been building for half a century--the theory known simply as the standard model. ... It is also manifestly incomplete. We know from what the theory doesn't explain that it must be just part of something bigger. So if the LHC finds the Higgs and nothing but the Higgs, the standard model will be sewn up. But then particle physics will be at a dead end, with no clues where to turn next.

<http://snipr.com/t7t6p>

## Opportunities for Educators and Students

**Conceptual Chemistry (Grades 4-9)** will be held at Kent State Stark. Teachers receive FREE 5 hours Grad credit from KSU plus \$850 of classroom materials --FREE + 500 activities (Conceptual Chemistry)--FREE. This is funded by the Ohio Board of Regents. Interested Teachers should apply ASAP. This is pending funding.

Write, call or E-mail for an application from:

Dr. Christopher J. Fenk, CChem 2010, Science and Advanced Technology Center

Kent State University at Tuscarawas, 330 University Drive, NE, New Philadelphia, OH 44663-9403

Phone: 330.308.7467 E-mail: [cfenk@kent.edu](mailto:cfenk@kent.edu)

Include in your request:

Name, Address, City, State, Zip, 10-digit Phone number, E-mail address

or download application at:

<http://personal.tusc.kent.edu/%7Ecfenk/chemistry/ConceptualChemistry.html>

Conceptual Chemistry is funded by the Ohio Board

of Regents' Improving Teacher Quality State Grants Program. The purpose of CC is to assist school districts by providing quality professional development for middle and HS teachers. This program provides free tuition, a \$2,240 value, for participants along with approximately \$850 worth of books and hands-on materials for use in the classroom.

Enhance your understanding of basic chemistry by participating in:

**Conceptual Chemistry!** It's...

Enjoyable, Usable Inquiry Lessons, Down-to-Earth, For the Non-Scientist, Receive ideas and materials to teach your students effectively.

FREE TUITION • FREE MATERIALS

All classes meet at Kent State University Stark  
6000 Frank Avenue NW, Canton, Ohio 44720,  
330.499.9600

Brushfire Science Consultants

Genea nd Linda Easter, 330-928-6691

[gleaster@sbcglobal.net](mailto:gleaster@sbcglobal.net)

540 S. Ridgecliff St. Tallmadge, Oh 44278

**Gr 9-12: USA Biology Olympiad teams are forming**

<http://www.cee.org>

The USA Biology Olympiad, jointly sponsored by the Center for Excellence in Education and Purdue University, is the premiere biology competition in the United States. Starting with almost 10,000 registered students from 41 states in 2009, the competition ultimately selects 4 students as "Team USA" who will represent our nation at the International Biology Olympiad. Last year, for the third year in a row, Team USA returned home from the International Biology Olympiad with 4 gold medals. The team hopes to capitalize on this success in 2010!

Additionally, the USA Biology Olympiad also offers a "Teacher Resource Center" to registered schools to assist teachers. The Teacher Resource Center includes practice exams with answer keys, links to International Biology Olympiad exams, textbook recommendations, links to outside professional development opportunities and study guides, as well as a breakdown of the grading rubric and testing protocol.

The USA Biology Olympiad provides an outstanding forum for aspiring biologists to learn and grow in the discipline through interaction with other likeminded students. Take advantage of this opportunity to challenge your outstanding students. For additional information, the program schedule and online registration visit the URL above. You can also contact Marcy Reedy, Manager of the USA Biology Olympiad, at [mreedy@cee.org](mailto:mreedy@cee.org) or 703-448-9062.

## Application open for global field courses/ Master's degree - 2010 scholarships available

OXFORD, Ohio - Miami University's Project Dragonfly is accepting applications now for its 2010 graduate field courses and master's programs offering international field and conservation studies in Africa, Asia and the Americas.

Each accepted applicant is awarded a tuition scholarship covering 2010 field course tuition, equivalent to \$3,100 in-state and \$7,100 out-of-state. Award recipients are responsible for travel and field costs.

The deadline to apply is Thursday, January 28, 2010.

Created by Dragonfly and the Cincinnati Zoo & Botanical Garden, Earth Expeditions graduate courses and the Global Field Program (GFP) Master's degree bring together graduate students, scientists, educators and community leaders at critical conservation field sites in Belize, Costa Rica, Baja, Trinidad, Mongolia, Thailand, Kenya and Namibia.

New in 2010 are courses in Borneo and the Amazon.

Earth Expeditions courses and the GFP Master's may be completed part-time from anywhere in the U.S. or abroad and are open to educators and other professionals from all settings and disciplines, regardless of academic focus. For information and to apply, visit:

- Earth Expeditions <http://www.EarthExpeditions.org>

- Global Field Program <http://www.MastersGFP.org>

Interested applicants in the Cincinnati, Chicago and Seattle regions may want to visit <http://www.MyMasters.org> for information on Dragonfly's additional master's degrees, including the community-based Advanced Inquiry Program co-delivered with premier learning institutions in select U.S. cities.

CONTACT: Jamie Bercau Anzano; 513.529.5103; [dragonfly@muohio.edu](mailto:dragonfly@muohio.edu)

## Job Opportunity at JCU

The Associate Director of CMSETT (Center for Mathematics & Science Education Teaching and Technology) is responsible for planning and development of high quality professional development opportunities for science teachers K-12. The associate director will also be responsible for grant writing, integrating technology in CMSETT programs, collaboration with area schools and involvement in science

education professional organizations.

## Requirements

A master's degree in education with a strong educational background in science is required. Experience in providing professional development for K-12 teachers is preferred. Excellent communication skills, both oral and written are necessary.

To apply online, go to [www.jcu.edu](http://www.jcu.edu) and follow the link to Human Resources.

## Science Matters to Parents: Awesome Websites and More

NSTA strongly believes that parents can and should play an integral part in their child's science education. Here are websites taken from the NSTA e-newsletter Scientific Principals that parents can use to find out more about science education and engage their children in fun, simple science experiments and activities: <http://www.nsta.org/sciencematters/websites.aspx>



Learning at the Fall Conference



The One-Inch Square Project from the Howard Hughes Medical Institute (<http://www.hhmi.org/coolscience/forkids/inchsquare/>) will nurture students' investigative skills at home. The project is simple, nearly cost-free, and can be repeated again and again in varied situations. Encourage your students to share this activity with their parents, and to visit this web site for more outstanding opportunities to enjoy science together.

### **K-12: SECO Conference registrations are being accepted now**

<http://www.secoonline.org>

The SECO Conference planning team has been hard at work, and the 2010 conference in Columbus promises to be an exciting professional development opportunity for teachers of science from pre-school through college level. Plan now to attend!

There are short courses which can be taken for graduate level university credit or CEU's, and there will be over 100 hour long concurrent sessions to choose from, with presentations on all areas of teaching science. Our Science Consultants from ODE will provide updates on the new science standards, the exhibit hall will have all the newest teaching materials on display, and there will be special presentations from Darwin himself.

The Schedule on Thursday, February 25 will include a special Elementary Science Day, which was very successful and popular at the 2009 NSTA Conference in Cincinnati that SECO helped plan and present.

Complete your registration form and 1) FAX it to: 330-239-1371, or 2) email to: [SECO.conf@gmail.com](mailto:SECO.conf@gmail.com), or 3) send it through the US mail to: SECO Conference 2010, P.O. Box 349, Sharon Center, OH 44274-0349

## **SECO Conference in Columbus**

**February 25, 26, 27, 2010**

<http://www.secoonline.org/>

### **Gr K-6: Nominate educators for science and mathematics teaching awards**

<http://www.paemst.org/controllers/home.cfc?method=view>

Nominations are being sought for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). The award honors exemplary mathematics and science teachers in grades K-12 for their contributions to improving teaching and learning. The National Science Foundation administers PAEMST on behalf of the White House Office of Science and Technology Policy.

This year, the nominations and applications for elementary teachers will be completed online. The nomination deadline is April 1, 2010. Awards alternate each year between elementary and secondary teachers. (Secondary school teachers are eligible to apply in 2011.)

This is an award that opens all kinds of opportunities and doors for teachers and their students, so please look around, and encourage the best elementary teachers of science in your school to apply!

### **Gr PK-3: Need a great site related to electricity for your early childhood students?**

The Museum of Science in Boston features a section called "Engineering is Elementary" with good curriculum and a unit on electricity. Check it out! <http://www.mos.org/eie>

### **Gr 4-12: Get your FREE electrical safety video from AEP**

American Electric Power (AEP) and its operating companies are pleased to announce the availability of a new, free electrical safety video: <http://www.aepohio.com/go/livewire>

We all know that power lines can be dangerous and that electricity can kill, but most of us have probably not experienced an electrical contact or even seen one happen, so the how and why may still be a mystery.

A new educational video titled, "Live Wire," explains not only why electricity can be so dangerous, but also uses different scenarios to graphically illustrate what can happen if contact with live electric wires is made.

The 13-minute video is divided into seven chapters:

- \* Chapter One – Electricity Basics
- \* Chapter Two – Overhead Power Line Safety
- \* Chapter Three – Overhead Power Lines & Equipment Safety
- \* Chapter Four – Underground Power Line Safety
- \* Chapter Five – Downed Power Line Safety
- \* Chapter Six – Electrical Equipment Safety
- \* Chapter Seven – Safety Tips **Cont. on Pg 11**



## Some Great Web-Sites & Film Clips

Children's Misconceptions about science:

<http://amasci.com/miscon/opphys.html>

What is Electricity?

<http://amasci.com/miscon/whatis.html>

RNAi – A recent discovery has huge medical implications:

<http://www.pbs.org/wgbh/nova/sciencenow/3210/02.html>

NASA's Space Place Live animated programs:

<http://spaceplace.jpl.nasa.gov/en/kids/live/#>

Cells Alive: <http://www.cellsalive.com/>

From: Stephen C. Strub

Subject: [ap-bio] Bell Ringers

I like to use an activity that requires students to write something in the first minute of class every day. For 2 years now, I open all of my AP classes with a podcast from "60 Second Science", which I download free through iTunes. The podcasts are probably also available through a website that they (the 60 Second group) have.

There are podcasts to cover most any topic in any science discipline, they are free and they truly are about 60 seconds long. Students keep a journal just for this activity, in which they write the date, title of the podcast and then answer 3-5 questions about the podcast, questions that I project from my computer onto the whiteboard. The questions are mostly fact based and we usually follow up with a very short, targeted discussion of how the podcast is relevant to something we've studied.

Here is one site: <http://www.scientificamerican.com/podcast/>

### TED.COM

Listen to a 15 minute video on a variety of topics given by an "expert" in the area at: [www.ted.com](http://www.ted.com). These talks are good in terms of developing your content knowledge and are often provocative and can lead to good class discussion.

### Frog, Chemical, Water & You

Review this wonderful film online called Frog, Chemical, Water and You. You can see Part 1 (it's in four parts) on the website Terra: the Nature of our World

(which is nice web site, in and of itself).

This is a beautiful film, pitched at the right level for middle and high school students, that does a great job of explaining the way pesticides and pollutants make their way into our water and impact the biosphere - emphasizing frogs, as indicator species.

The film was made by a woman named Jen Grace (who is at Montana State University). It's won a number of awards and was funded by a Smithsonian Women's Committee grant.

Here's the web site for part 1 of the film: <http://www.lifeonterra.com/episode.php?id=175>

### VIRAL Infection Model

This is very simplified, totally lacks biological terminology. So you should be able to pause it and make the students name the structures (e.g., the "pink thingy" referred to in the video is a ribosome). But it's a great visual of the lytic cycle, and is very current with all the concern with H1N1.

<http://www.npr.org/templates/story/story.php?storyId=114075029>



Another idea about the extinction of dinosaurs.



The Cleveland Regional Council of Science Teachers  
Professional Development Opportunity for K-3 Teachers

**"Science + Reading"**

*This PD opportunity is supported by the  
Martha Holden Jennings Foundation and the CRCST GEMS fund.*



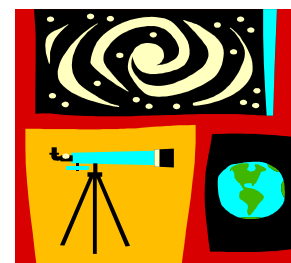
Enhance your skills in teaching science.  
Learn how to integrate literacy & science in your lessons.  
Use exceptional materials (GEMS) that align with state and district standards.  
Become a member of the Cleveland Regional Council of Science Teachers.  
Become a member of the Teacher Resource Center of the  
Cleveland Botanical Garden or the Cleveland Museum of Natural History.  
Earn one hour of non-degree graduate credit from Ashland University (optional)  
*You must be a public school teacher, grades K-3 to be eligible.*

Benefits:

- CBG or CMNH teacher resource center membership - \$35 value
- Two GEMS guide books - \$40 value
- CRCST membership & admission to the Spring Symposium - \$25 value
- Improving your craft – *priceless*

Your cost is only:

\$30.00 (Make check payable to **CRCST**)  
*Additional cost for the non-degree graduate credit.*



The program will begin on Wednesday, February 24, 2010 at John Carroll University from 4:30 to 7:30 (3 contact hours). Participants will be introduced to the course syllabus, GEMS science and reading units and learn the *Angel* web interface used for the online portion of the program. Over the next several weeks participants will work online on class assignments focused on the use of science activities with appropriate nonfiction reading material including the GEMS units *Buzzing a Hive* and *Tree Homes*. Additional hands-on and reading activities focused on plant structures, habitats and growth will be selected by the instructors, Renata Brown (Associate Director of Education, Clara DeMallie Sherwin Chair in Education) and CRCST's GEMS director, Rowenna Collins.

Sessions (2 contact hours each) will be held in March, early April, late April and at the CRCST Spring Symposium. Two of these afternoon sessions will be in University Circle in order to engage participants in an exploration of the resources available at the CBG and the CMNH teacher resource centers. The final online assignments will address remaining questions and draw together the curriculum materials and the local resources. The course will conclude by May 1, 2010. Participants will be online for 7 contact hours. The course will entail a total of 16 contact hours.

Registration Form for Course and CRCST Membership – Register by Feb. 12, 2010.

Name \_\_\_\_\_ Grades Taught \_\_\_\_\_

School \_\_\_\_\_ District \_\_\_\_\_

School Phone # (\_\_\_\_\_) \_\_\_\_\_ Home Phone # (\_\_\_\_\_) \_\_\_\_\_

Cell Phone (\_\_\_\_\_) \_\_\_\_\_ E-Mail \_\_\_\_\_

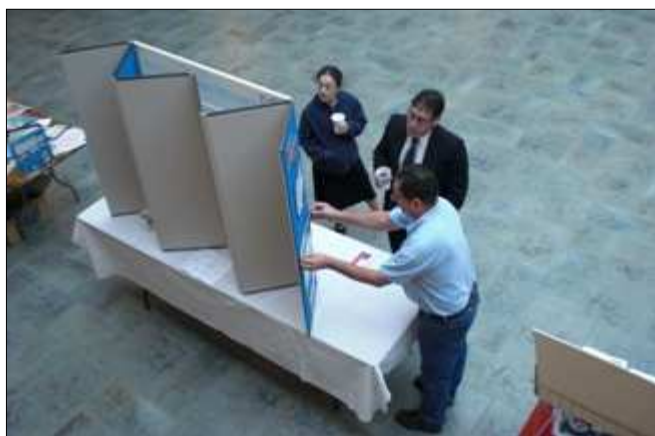
Home Address \_\_\_\_\_

City \_\_\_\_\_ Zip \_\_\_\_\_

**Make check payable to CRCST** Mail to: Mark Waner, Dept. of Chemistry, John Carroll University, 20700 North Park Blvd., University Heights, OH 44118



Networking in the Exhibitor Area  
at the Fall Conference



**From Pg. 8** This video is an excellent educational resource for students in middle and high school as well as adults, and potentially for some upper elementary students. To view or order a free copy of the DVD, simply go to your operating company's Web site and fill out the simple order form. If you have any questions or can't access the video, please email [amkeifer@aep.com](mailto:amkeifer@aep.com)

Thanks to **Kim Faglia** for a **Chi square lab** that all you need is pennies to do:

<http://www.explorebiology.com/apbiology/labs/#genetics>

**National Science Foundation (NSF) News -** Growth Spurt in Tree Rings Prompts Questions About Climate Change:

[http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=115942&WT.mc\\_id=USNSF\\_51](http://www.nsf.gov/news/news_summ.jsp?cntn_id=115942&WT.mc_id=USNSF_51)

Report Says Musicians Hear Better Than Non-

Musicians [http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=115958&WT.mc\\_id=USNSF\\_51](http://www.nsf.gov/news/news_summ.jsp?cntn_id=115958&WT.mc_id=USNSF_51)

### 2010 Bartlett Award Nominations

The Richard C. Bartlett Environmental Education Award honors an outstanding **high school** teacher who has successfully integrated environmental education into the traditional classroom setting and served as an inspiration and model to others. The recipient receives a \$5,000 award and a trip to Washington, D.C. to meet with members of the national environmental education community. Nominate yourself or a fellow educator before the **Jan. 15, 2010** deadline. [Learn more](#)

**Cell size and scale visualization** on the University of Utah site: <http://learn.genetics.utah.edu/content/begin/cells/scale/>

**The Cleveland Geological Society** is housed at the CMNH. This is a great resource for Earth Science teachers and others interested in Geology. Their web site contains lots of good stuff: <http://www.cmnh.org/site/GetInvolved/ClubsandSocieties/ClevelandGeologicalSociety.aspx>

**National Science Foundation (NSF) News -** Learning Computer Science From Scratch. An innovative new computer programming language introduces kids to the possibilities of computing [http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=116070&WT.mc\\_id=USNSF\\_51](http://www.nsf.gov/news/news_summ.jsp?cntn_id=116070&WT.mc_id=USNSF_51)

### Build your own smartboard

Here is the software as a refined product. The trial version is free, full cost for the registered version is \$29.99.

<http://www.smoothboard.net/>

The Smoothboard software supports up to two Wii remotes. By using two remotes, blind spots are eliminated, even when the speaker stands by the screen.

The lightpens are widely available from sources such as:

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

The bluetooth USB adapter, which is needed for laptops that do not have integrated bluetooth, is also available from the above source. A complete setup guide is also on the above site.

The Wii remote is available from numerous

sources for \$20 to \$40. For example, at Walmart:

[http://www.walmart.com/catalog/product.do?product\\_id=8070470](http://www.walmart.com/catalog/product.do?product_id=8070470)

Note that this product is actually superior to a Promethean Board in some ways:

- (1) It is highly portable
- (2) there is no fragile screen to damage

**President's Column - From p 1** ... members and the larger community. While CRCST has reached out and included folks from across the science education spectrum, I don't believe our membership is as large and representative as it might be. Don't get me wrong, we currently have a great membership base and are in solid financial shape, but could we do more? As we approach the end of the calendar year and the middle of our academic year, I ask you to consider helping our organization in any or all of the following:

1. Personally invite at least one new member to join CRCST, and perhaps CRABS as well!
2. Engage with your CRCST colleagues:
  - Help in planning the Spring Symposium, planned for mid-April or early May.
  - Help in planning the Fall Conference, planned for October 2010.
  - Consider running for a spot on the CRCST Board. Elections are held at the Fall Conference. I'm sure Ray Patacca would love to have people step forward to help him put together the slate of candidates.

If you weren't able to attend one of the Focus Groups on the draft of the new State of Ohio Science Standards, provide your feedback directly to ODE through their website:

<http://www.ode.state.oh.us/GD/Templates/Pages/ODE/ODEDetail.aspx?Page=3&TopicRelationID=1696&Content=76764>

This is a great opportunity to have some input into this important document.

3. Recently attendance at the Spring Symposium has been quite low. Last year we tried holding two symposia and to include events that would engage families as well as science teachers, but we had to cancel for lack of registrants. Please plan to attend. If you haven't attended because it is at a bad time, not relevant or interesting, see 2 a above!
4. In an effort to reach out to early childhood folks, acknowledge the connection between success in science and in reading, as well as offer professional development in a face-to-face and distance

learning hybrid we secured funding from the Martha Holden Jennings Foundation for the Science + Reading program (see the flier on page 10 in this newsletter). Please pass the word to your colleagues in grades K-3. A good opportunity to fulfill challenge #1 above!

5. Let myself or a board member know how CRCST might better meet your needs as a professional science educator. [mwaner@jcu.edu](mailto:mwaner@jcu.edu)



I think this is the critter that has invaded my bird-feeder. Or maybe this one:



.....so be good for goodness sake.....

Norm Schmidt, Editor  
1790 West 57th Street  
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