



The CRCST Quarterly

Volume LXVI No. 4

66 Years

Winter 2010 - 11

.....from the Editor

Norm Schmidt

Evidence of angels?

I have a natural fence on my "spare" lot next to the lot on which my house stands. I planted some White Pines when I moved here in 1983. Over the years the pines have grown and other trees also took hold.

A few weeks ago, after a Thursday evening of high winds, one soft wood Tree-of-Heaven broke off at the base and leaned into the Black Locust tree on my neighbors tree lawn. It looked like it could easily, with wind assistance, end up on my neighbors house. I sent out a plea to my nephews, much younger and stronger than myself (and one has a chain saw and pole trimmer), to come and help out their 'favorite' uncle.

Luckily the one with the chain saw and pole trimmer made the trip on Saturday. We decided to try trimming the branches to free up the tree and strategically bring it down away from the house.

We brought down one branch and all the rest ended up binding the pole saw when the cut was part way through due to . . . well, gravity.

Tim (my nephew) and I decided we needed rope to tie to the tree and then to other trees in order to keep it from falling into the house as we used the chain saw to shorten it from the bottom up.

We went to the local lumber



Outgoing Prez Mark Waner and Treasurer Mary K Evans share a moment at the Fall Conference Registration Table

yard and found some wimpy nylon rope and since it was all that was available bought three coils. We took it home and tied up the tree and scratched various parts of our respective anatomies and realized the rope would be no help if the tree started heading for the neighbors house.

As we hemmed and hawed, a neighbor who I had never seen before walked up and with a strong Spanish accent suggested that he might help. His day job was tree trimming. Being a cynical city guy, I figured he was looking for a payday. But, we needed help. He asked if we wanted his help and we agreed that, indeed, we did.

He left and came back with two very thick nylon ropes and a friend. He was Jonathon and his friend was Edgar. We took the wimpy rope off, tied up the appropriate rope and pulled according to Jonathon's directions while he cut from below with the chain saw.

The tree came down without destroying the neighbors house. Tim cut it up into manageable size and

with much help from Edgar, we loaded it into my truck while Jonathon coiled up his ropes. When he finished he said, "Glad I could help, neighbor," and he and Edgar headed down the sidewalk. I have not seen Jonathon nor Edgar since. Angels or good neighbors?...or are they the same? **Enjoy the Season!**



Presidential Column

Vicki Searles, President

As I sit here all snug in my kitchen on this cold winter evening, I feel so lucky to have a job that allows me to see excitement in kids' eyes when they realize they can enjoy the wonders of science and nature. Don't you absolutely love when a student figures out that when he or she asks a question about their environment, that they have the power to question, observe, evaluate data and maybe answer their own question all on their own?

Those occasional moments that I live for - when I see a light bulb turning on in their brain, or when I see that one of my students realizes that they have the power to be a scientist makes all the day-to-day hassles worthwhile.

Well adults need to have those same experiences in order to keep science alive for the kids. That's why I am so pleased to be the new president of the Cleveland Regional Council of Science Teachers, a group dedicated to the advancement of science educators.

I am also happy to be supported by an incredible board. We are hard at work developing ways to improve

the member experience in 2010-2011. Following are three directions we will travel in this effort. I invite you to jump on board and assist us. We can use the help.

1. We will develop and implement a plan for increasing membership. Mark Waner, our immediate past president and coordinator of membership, tells me that we currently have 308 members on our roster, but 136 are due to renew their membership. I sincerely hope that each of you who is contemplating renewing your membership this month has enjoyed your benefits this year.

Part of the effort to increase membership to a target of 450 science educators will include the CRCST Board evaluating all our activities and maximizing their value to you, the members. Be sure to attend the spring symposium in April and get involved in the fall conference by attending or by presenting one of your successes to the attendees. Keep an eye open and look for information on other chances to gather with fellow educators throughout the year. We have taken steps to become more accessible in the last couple of years so go to our new website, find us on Facebook or follow us on Twitter: @CRCSTeachers.

Many of our members educate at museums, botanical gardens, zoos, parks, nature centers and other top-notch informal science education organizations and are always looking to share their programs and experience with science teachers. There are limitless opportunities to remind yourself why you chose science as your career.

Ask a friend or two to join with you this year. If you are able to recruit two new members to join CRCST before March 1, you will be entered in a drawing to win a family membership to Cleveland Metroparks Zoo, The Cleveland Botanical Garden, Lake Farmpark or The Cleveland Museum of Natural History just in time for spring break! Just send in the two new memberships together with either your renewal or a note designating that you have already renewed your membership for 2010-11, and you'll be entered in the drawing.

2. We will review our professional development programs and revise them to optimize their usefulness to members. Have you attended a CRCST spring symposium, fall conference, the Science + Reading class we offered last spring or attended other professional development opportunities that you were made aware of through the newsletter or the regular emails we send? The most recent fall conference held at Cleveland Metroparks Zoo included fantastic opportunities for science educators to share their best

ideas and learn new. Seventy-nine members registered for that conference, a small number compared to how many we were hoping to see. We want to know why more educators don't participate. Please drop us a note, or send us an email or message via Facebook. The Cleveland Regional Council of Science Teachers is here for your benefit.

3. We hope to increase the amount of scholarship dollars allocated to graduating high school seniors, CRCST members and NEOSEF entrants. In the recent past we have been able to help out at the NEOSEF Science Fair by judging and providing \$600.00 in prizes to the 7th and 8th graders that we judge to have very creative projects. We also contribute \$500 for half of a scholarship for a graduating high school senior at the CTSC banquet each spring. If our membership were to reach the goal of 450, we would be better able to assist young people in reaching their dreams of being scientists. We would also be able to support members attending the NSTA summer congress, and the SECO Conference .

Well...what do you think? Will you join us? Stay warm. Cheers.

A new professional development opportunity for K-6 teachers of science and mathematics:

Science and Mathematics Data Analysis (SAMDA)

Four full days of instruction from veteran teachers who are also excellent presenters.

The class will be held at St. Ignatius High School on the West side of Cleveland. Tentative dates/times are June 20 - 23 from 8:15 to 3:45 daily.

Learn science activities that will engage your students in data gathering and analysis. You will be provided with the skills that will allow you to provide your students with the opportunity to do real science and the methods to validate the results.

The cost will be \$30 and optional graduate credit for an additional fee. More information will be forthcoming as we firm up the details

Science in the News

[Special Report: Water vs. Energy](#)

Without water, we'd have practically no energy. Without energy—and therefore cars, planes, laptops, smartphones, and lighting—we wouldn't be doing much. Almost everywhere you look, water and energy are inseparable. *IEEE Spectrum* has traveled around the globe to see where these competing needs come into conflict and what technology could help—or hurt—the situation.

Read more. (<http://spectrum.ieee.org/static/special-report-water-vs-energy>)

The Intelligent Designers are back in the news. As the Louisiana State Dept. of Ed. began deliberations over a new life science text for public schools statewide, the folks that believe equal time be given to the intelligent design idea in the science classroom began to make big noise. Thankfully the decision to purchase texts that were based on scientific evidence was passed...but not unanimously. The vote was 8 to 4 in favor of the texts and against the inclusion of disclaimers included in the books stating that evolution was "just a theory". More information about the issue is available at the *Education Week* web site: http://blogs.edweek.org/edweek/curriculum/2010/11/textbook_battle_brewing_in_lou.html

Related to the above, if you would like to be part of the national pastafarian movement and learn to honor the omniscient and powerful FSM The one and only Intelligent Designer, check out: <http://www.venganza.org/>

[In Feast of Data on BPA Plastic, No Final Answer](#)

from the *New York Times* (Registration Required)

The research has been going on for more than 10 years. Studies number in the hundreds. Millions of dollars have been spent. But government health officials still cannot decide whether the chemical bisphenol-A, or BPA, a component of some plastics, is safe. The substance lines most food and drink cans, and is used to make hard, clear plastic bottles, containers and countless other products. Nearly everyone is exposed to it.

Concerns about BPA stem from studies in lab animals and cell cultures showing it can mimic the hormone estrogen. It is considered an "endocrine disruptor," a term applied to chemicals that can act like hormones.

But whether it does any harm in people is unclear.

Where science has left a void, politics and marketing have rushed in. A fierce debate has resulted, with one side dismissing the whole idea of endocrine disruptors as junk science and the other regarding BPA as part of a chemical stew that threatens public health.

[Genetically Modified Salmon Safe to Eat, FDA Report Says](#)

from the *Los Angeles Times* (Registration Required)

The effort to win federal approval of genetically engineered salmon received a major boost Friday when the Food and Drug Administration released an analysis that deemed the fish safe to eat and unlikely to harm the environment.

AquaBounty Technologies Inc. of Waltham, Mass., has invested more than 14 years and nearly \$60 million developing and seeking approval of its AquaAdvantage salmon. The company says its fish look and taste like non-engineered North Atlantic salmon, consume up to 25% less food, and reach market weight in half the time.

If approved, the fish would be the nation's first genetically modified animals produced commercially for food. ... The FDA's Veterinary Medicine Advisory Committee held public meetings Sept. 19-20 to review the analysis.

[Forget What You Know About Good Study Habits](#)

from the *New York Times* (Registration Required)

Every September, millions of parents try a kind of psychological witchcraft, to transform their summer-glazed campers into fall students, their video-bugs into bookworms. Advice is cheap and all too familiar: Clear a quiet work space. Stick to a homework schedule. Set goals. Set boundaries. Do not bribe (except in emergencies).

And check out the classroom. Does Junior's learning style match the new teacher's approach? Or the school's philosophy? Maybe the child isn't "a good fit" for the school. Such theories have developed in part because of sketchy education research that doesn't offer clear guidance.

... In recent years, cognitive scientists have shown that a few simple techniques can reliably improve what matters most: how much a student learns from studying.



Board members Jo Ann Lane & Maureen Wahl enjoy a visit with a furry critter



A popular session with a live reptile at the Fall Conference held at the Zoo



Past CRCST Prez, Becky Kapley, leads her session about creating a Marine environment in the classroom at the Fall Conference



Past Presidents Connie Kowalski and Margaret O'Reilly do science while board member Kathleen Rocco observes



Ken Street presents his session on Spectroscopy



Past Presidents Connie Kowalski and Margaret O'Reilly do science while board member Kathleen Rocco observes



Keynote Speaker, Tim Harrison discusses the challenges of escaped exotic pets (below)

Mary K and Mark welcome the Keynote Speaker Tim Harrison and his friend (above),



Following his talk, Tim Harrison signs his books in the Zoo's Education Building Lobby (Left).



Exhibitors discuss opportunities for teachers and their students at the Fall Conference (right).



[Finding New Weapons to Kill Bedbugs](#)

from the *Washington Post* (Registration Required)

The brown bugs, each about half the size of a pencil eraser, lie in glass Petri dishes--a few on their backs, legs in the air. They died within seconds of scurrying across a piece of paper containing drops of a chemical. The next step is to find out whether that same piece of paper will kill insects that crawl over it two, three or four months from now.

This lab is the front line in the federal government's chemical warfare on a scourge that has become resistant to many insecticides and is raising anxiety--and welts--in bedrooms, college dorms and hotel suites across the country: bedbugs.

Among those leading the attack is Mark F. Feldlaufer, an entomologist at the Invasive Insect Biocontrol and Behavior Laboratory on the Agriculture Department's sprawling research center in suburban Maryland. His mission is to find compounds that kill the bloodsuckers ...

[Lake Michigan's Ecosystem Facing Collapse](#)

from the *Christian Science Monitor*

An invasive species of mussel called quagga has recently begun eating its way through the phytoplankton population of Lake Michigan, which could have dire effects on the lake's ecosystem, scientists now warn.

A giant ring of phytoplankton ... was discovered in Lake Michigan in 1998 by Michigan Technological University biologist W. Charles Kerfoot and his research team. The "phytoplankton doughnut" is formed when winter storms kick up nutrient-rich sediment along the southeastern shore of the lake. The disturbed sediments begin circulating in a slow-moving circle with the lake's currents, which provides a massive supply of food for phytoplankton.

... This doughnut, in turn, feeds the entire lake. Zooplankton, tiny animals that feed on phytoplankton, thrive there. The seasonal bloom helps them survive winter. The zooplankton are then eaten by small fish, which are eaten by large fish, and so on--thus the doughnut helps maintain the entire food web. But almost as soon as it was discovered, the doughnut ... started to disappear.

NSTA Position Statement:

Teaching Science and Technology in the Context of Societal and Personal Issues **Introduction**

From health to climate change and from bioethics to energy, a myriad of personal and societal issues requires citizens to make informed decisions based on science and technology. These issues provide a rich and motivating context in which students can learn the principles and practices of science and technology. Science and technology influence every aspect of our lives, and in turn, we influence the direction and use of scientific and technological endeavors (Roberts 2007). In addition, science and technology are central to our well-being and success as individuals, as members of society, and as members of the global community. Therefore, NSTA advocates that K-16 science and technology instruction be provided within the context of personal and societal issues.

NSTA strongly promotes the education of a citizenry that is scientifically and technologically literate as defined in the National Science Education Standards (NRC 1996). This requires that we not only know, understand, and value scientific and technological concepts, processes, and outcomes, but that we are able to use and apply science and technology in our personal and social lives (Zeidler 2003). While both science and technology are human endeavors and involve similar basic procedures, science involves exploration of the *natural world* seeking explanations--based on evidence--for objects and events encountered, and technology focuses on the *human-made world*.

There is a national consensus about the central role that science and technology play in our society and its connection to our nation's competitiveness and future economic prosperity (Business Roundtable 2005). However, we have yet to ensure all students have the ability to use what they have learned when making decisions about what is appropriate in personal, societal, and global situations involving science and technology, and to value these endeavors (Abd-El-Khalick 2003).

The purpose of understanding science and technology is not solely for the sake of learning, but rather to enable and motivate citizens to contribute to and engage in society (DeBoer 2000). Therefore, NSTA sets forth the following declarations to promote the teaching of science and technology within the context of personal and societal issues.

Declarations

Regarding what students should be able to know and do in science within the context of societal and personal issues, NSTA recommends that students

- know the major concepts, hypotheses, and theories of science and be able to use them;
- include knowledge of science concepts and practices of science in making responsible everyday decisions;
- understand that the generation of scientific knowledge depends upon inquiry processes and upon conceptual theories;
- understand that the invention and improvement of technologies depends on the technological design process;
- understand that science and technology are products of human creativity and imagination, subject to verification and rigorous tests;
- recognize that scientific understanding is subject to change as evidence accumulates, or old evidence is re-evaluated;
- distinguish between scientific evidence and personal opinion;
- understand how society influences science and technology and how science and technology influence society;
- understand and weigh both the benefits and burdens of scientific and technological developments;
- be able to consider the trade-offs among alternative solutions when considering decisions that involve competing priorities;
- recognize that scientific and technologic advances may have unanticipated consequences, which only become apparent over time as the application or technology becomes more pervasive or more powerful;
- recognize that many decisions are global in nature and that people in other parts of the world are affected by our decisions and faced with similar decisions and issues themselves;
- understand how sustainable solutions to societal issues are those that meet the needs of the present without compromising the ability of future generations to meet their own needs;
- recognize how scientific and technologic advances may affect the environment positively or negatively;
- appreciate the value and role of research and processes of technological design; and
- know reliable sources of scientific and technologi-

cal information, how to access them, and how to use these sources in the process of decision making.

Regarding how science instruction should occur within the context of societal and personal issues, NSTA recommends that science instruction

- incorporate scientific issues that are personally and socially relevant, and developmentally appropriate, as a way to generate interest in and motivation to engage in relating science to personal and societal issues;
 - focus as much as possible on scientific and technological issues that are identified by students;
 - incorporate the practices and understanding of scientific inquiry and technological design;
 - provide multiple learning opportunities that encourage the study of science in personal and societal contexts;
 - provide an authentic learning context by examining the societal dimensions of scientific issue, such as political, economic, and ethical considerations;
 - approach decisions in an open unbiased way, respecting and acknowledging different perspectives, views, beliefs, and other ways of knowing;
- prepare students to become future citizens who

Share Your Good Ideas

Don't delay—submit a session proposal for NSTA's 2011–2012 conferences today!

Our 2011–2012 conferences include:

- Hartford, Connecticut (October 27–29, 2011)
- New Orleans, Louisiana (November 10–12, 2011)
- Seattle, Washington (December 8–10, 2011)
- Indianapolis, Indiana (March 29–April 1, 2012)

Deadlines for submissions are **January 15, 2011**, for the 2011 area conferences, and **April 15, 2011**, for the Indianapolis National Conference. Info at www.nsta.org

- are scientifically and technologically literate and willing to engage in making responsible and informed decisions.

—Adopted by the NSTA Board of Directors
November 2010

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[Does Differentiated Instruction Work?](#)

In a recent *Education Week* [commentary piece](#), education consultant Mike Schmoker argued that, despite the claims of its adherents, in practice differentiated instruction tends to "complicate teachers' work" and dumb down instruction. Nor, he added, is it supported by empirical research.

In a [response](#) published this week, Carol Ann Tomlinson, often cited as the "architect" of differentiated instruction, charges that Schmoker mischaracterizes "the basic tenets of the model he is criticizing." In fact, she says, when "implemented with fidelity"—that is, when grounded in instructional best-practices, rigorous goals, small-group instruction, formative assessment, student engagement, and strong student-teacher connections—differentiated instruction is an effective pedagogical method that is well-supported by research from numerous fields.

What's your view? Does differentiated instruction work in your classroom? How difficult is it in practice?

What challenges or opportunities does it present?

[Share your experiences](#)

[CRCST Board Member & Perry Middle School Teacher Pat Betteley](#)

will be doing research in Antarctica. She will be blogging and welcomes teacher's and student's input and participation:

<http://frozenfly.edublogs.org/>

[Leaking Siberian Ice Raises a Tricky Climate Issue](#)

from the *San Diego Union-Tribune* (Registration Required)

CHERSKY, Russia -- The Russian scientist shuffles across the frozen lake, scuffing aside ankle-deep snow until he finds a cluster of bubbles trapped under the ice. With a cigarette lighter in one hand and a knife in the other, he lances the ice like a blister. Methane whooshes out and bursts into a thin blue flame.

Gas locked inside Siberia's frozen soil and under its lakes has been seeping out since the end of the last ice age 10,000 years ago. But in the past few decades, as the Earth has warmed, the icy ground has begun thawing more rapidly, accelerating the release of methane—a greenhouse gas 23 times more powerful than carbon dioxide—at a perilous rate.

Some scientists believe the thawing of permafrost could become the epicenter of climate change. They say 1.5 trillion tons of carbon, locked inside icebound earth since the age of mammoths, is a climate time bomb waiting to explode if released into the atmosphere.

[Feds' Transgenic-Salmon Review Ignores Big Picture](#)

from *Wired*

When the Food and Drug Administration announces the fate of the AquAdvantage salmon, the first genetically modified (GM) animal ever considered for commercial consumption, they may have considered only a fraction of their decision's consequences.

So far the FDA has focused on whether or not the salmon are safe to eat or might escape and breed with wild fish. They haven't yet considered how GM salmon could affect, for better or worse, public dietary habits or the fallout of a boom in fish farming." The way they're defining safety is overly narrow," said Martin Smith, an environmental policy analyst at

Duke University and co-author of a Nov. 18 commentary in the journal *Science*, of the FDA's approval process.

[Haitians Plunge Into Muck to Stem Cholera](#)

from the *New York Times* (*Registration Required*)

PORT-AU-PRINCE, Haiti -- Duquesne Fils-Aimé, stripped to the waist, stepped gingerly into the canal, drawing stares of astonishment from the spectators above. When he ducked his head under the water--if one could call it that--an audible gasp rose from the crowd.

Plastic bottles and bags, shredded underwear, shoes and endless globs of unidentifiable black muck bobbed like a fetid tarp around Mr. Fils-Aimé and his colleagues as they started another shift--cleaning out the canal by hand.

On and on they worked in the drink, making little progress but at least a little cash in a Sisyphean battle against the squalor that chokes the canals and ditches passing as sewers, causes floods of wastewater and helps spread the cholera epidemic now gripping more than half the country.

[Discussion: Global Fisheries in Decline](#)

from PRI's *The World Science*

According to a new report by the World Wildlife Fund and the Zoological Society of London, 70% of the world's commercial marine fish stocks are on the decline. Some are on the brink of collapse.

"It's mainly the demand for fish that's driving this [decline]," says fisheries economist Dr. Rashid Sumaila, who directs the University of British Columbia's Fisheries Center. That means consumers can play a big role in solving the problem, he says.

There's a growing number of resources that consumers can use to buy sustainably harvested fish. But can consumer awareness alone stop overfishing and protect the livelihoods of millions of fishermen around the world?

[Designing Life video clip from recent "60 Minutes":](#)

<http://www.cbsnews.com/video/watch/?id=7076435n&tag=contentMain;contentBody>

[Large Hadron Collider \(LHC\) Generates a 'Mini-Big Bang'](#)

from *BBC News Online*

The Large Hadron Collider has successfully created a "mini-Big Bang" by smashing together lead ions instead of protons. The scientists working at the enormous machine on Franco-Swiss border achieved the unique conditions on 7 November. The experiment created temperatures a million times hotter than the centre of the Sun.

... Up until now, the world's highest-energy particle accelerator--which is run by the European Organization for Nuclear Research (CERN)--has been colliding protons, in a bid to uncover mysteries of the Universe's formation. Proton collisions could help spot the elusive Higgs boson particle and signs of new physical laws, such as a framework called supersymmetry.

But for the next four weeks, scientists at the LHC will concentrate on analysing the data obtained from the lead ion collisions.



Webmaster & past president Rowenna Collins spends some time with a furry friend held by one of the Zoo's curators.

[Caribbean Coral Die-Off Worries Scientists](#)

from *Scientific American*

Unusually warm ocean temperatures in the summer and fall of 2005 caused a mass die-off of Caribbean corals that is the worst ever recorded there, according to new research published yesterday in the online journal *PLoS ONE*.

More than 80 percent of corals bleached and over 40 percent died at many sites in the Caribbean and Gulf of Mexico that year, Continued on page 14

Thank You, Bill Badders

by Jane Stange

Science education in my elementary classroom has definitely evolved. My wish is that other educator's who set policies in the schools would embrace the inclusion of science teaching in the primary classroom.

As a pre-service teacher I do not remember taking a science methods class. I had no clue about what constituted the teaching of good science and ironically, after 25 years, my classroom science center still looks about the same. Very early in my teaching career it seemed enough to get kids to marvel at the wonder of artifacts from nature. So I would set aside an area in the classroom to display interesting things from the natural and the technological world. Tree cookies (cut sections of a tree that encourages kids to count the rings), pinecones, spiders or beetles in a bug box, magnifying glasses and tons of cool looking rocks, pussy willows and cattails, fungi or mushrooms, a cactus plant, maybe some magnets, kaleidoscopes, nuts and screws and bolts of various sizes. My goal was to make kids wonder about these objects and begin to ask wondering questions.

Then I met Bill Badders. He was part of an initiative called CREST (Cleveland Revitalizes Elementary Science Teaching) in the Cleveland Public Schools. Bill began by modeling lessons for groups of teachers and we were required to journal about the lessons. He provided opportunities to test out science inquiry materials from various science publishers. My peer teachers wanted a textbook to use and so we talked about what such a textbook should provide. I just rolled with whatever was given to me by Bill. Back in my classroom, I really liked the springboard of questions that would ooze from the students. Some of my preparation time was spent in search of poems and books that reinforced the hands-on topics being presented.

I really wanted to foster the metacognitive ability of my students; that they could become self-learners because I definitely did not have the knowledge to teach it all, nor the time. I was asked to become a GEMS facilitator, or I think I was asked. That is also one of Bill's great leadership qualities, he invites you to become involved in activities and programs that improve your craft in a very natural (sneaky?) way, but I digress.

GEMS (Great Explorations in Mathematics

and Science) was developed at the Lawrence Hall of Science in Berkeley, California. It was through GEMS that I began to truly understand the importance of integrating science with literacy. Unfortunately most of the integration was with fictional stories and poems. I needed non-fiction materials that my students could read. When I would search the library for nonfiction materials they were always too hard for my students to read and I began teaching them how to use the pictures and charts and diagrams to glean knowledge.

Luckily, GEMS developed a program focused on my exact problem called *Seeds of Science/ Roots of Reading*. The developers of GEMS also found the need to have high quality, nonfiction books in the hands of students. In order to function as scientists, the students needed to be reading for research. The *Seeds* program saved me from going to the library searching for books on various science topics. I would never have known about inquiry science or GEMS or *Seeds* if it weren't for my mentor, Bill Badders.

This one person lit the spark within me to be, not only, an advocate for science teaching but to want to teach science well. Whenever I run into a former student who praises me for my teaching, I say a silent thank-you to Bill for helping me to grow into the science teacher I am today.

As far as my science center goes, these days I still have the same types of specimens and have added more, but now I have the kids write about what sparked their interest in the items, what "I wonder" questions do they still have and where do they think they can learn more. I read the student responses and gain insight into the thinking of my students so as to steer them to further study. Kind of what Bill did with the teachers in CREST. Beyond learning about the standards we considered how the knowledge builds and how to motivate our students to construct their own concepts.

Again, I must praise Bill's initiatives in fostering the desire in me to teach inquiry science as well as wanting to give back to the next generation of teachers. I hope that I too, am able to plant the seeds to grow good science teachers. I challenge other teachers to begin to plant the seed of teaching good science in our classrooms on a daily basis.

{ Bill Badders is currently Director and PI, Cleveland Mathematics and Science Partnership (MSP) for the CMSD. He was a presidential awardee in 1992 and co-president of CRCST in 1998. Ed. }

Opportunities for Teachers and Students

As you're preparing your classroom and lesson plans for another school year, don't forget to reserve your spot for a diorama of a Sharp-shinned Hawk subduing a Warbler, or a Beaver proving itself as an incredible ecosystem engineer, or even the life-size skeleton of North America's only marsupial!

Let me introduce myself. My name is Marty Calabrese and I'm the new Science Resource Center Coordinator at the Cleveland Museum of Natural History. I have been with the Museum since 2006, serving our Wildlife Resource Center and Perkins Exhibit featuring native Ohio plants and animals. Many of you know Kati Hanimagi from your last visit to the SRC. Kati remains the SRC Assistant and you'll likely run into her again if she's not too busy showing me the ropes!

The Museum has LOTS to offer all classroom teachers, home school educators, and non-traditional educators such as park naturalists and your students, so I encourage you to visit and learn about all of the wonderful resources made available to you as an educator.

For details, check: <http://www.cmnh.org/site/ClassesandPrograms/ScienceResourceCenter/OpenHouse.aspx>

The SRC schedule for the 2010-2011 School Year is as follows

Monday - Friday, 3 to 5 pm
 Saturday: 9 am to 1 pm
 Sundays: Closed
 (All other times by appointment only)

Please visit our webpage at <http://www.cmnh.org/site/ClassesandPrograms/ScienceResourceCenter.aspx> to learn more about what materials we have available for loan (i.e. Dioramas and Thematic Teaching Kits), teacher workshops, professional development and SRC Membership.

Encyclopedia of Life Podcasts

One Species at a Time is the name of this series

which is targeted at students ages 9-13, each five-minute podcast links to content from the *Encyclopedia of Life* and includes a Meet the Scientist feature page. This season the podcasts explore things that flutter, wriggle, burrow, blossom and hop - everything from bacteria to gorillas. Visit: <http://education.eol.org/podcast>

Single Use Packaging Lessons

The Foodservice Packaging Institute (FPI) has an educational kit for students in grades 7 & 8 that examines how single-use foodservice products affect our natural resources and daily lives. The kit includes lessons such as "To Burn or Compost? That is the Question;" and interactive game; a glossary; and a bibliography. Visit: <http://bit.ly/cm2ZVF>

Don't miss the SECO Annual Professional Development Conference **John S. Knight Center, Akron, OH** **February 10 - 12, 2011**

We invite you to join your colleagues in Akron. The conference is focused on the following strands:

- Engaging Students to Aspire to STEM Careers
- Building Excellence in Standard-based Education through Integration, not the addition, of technology
- "Going Green" - What Does it Mean?
- Transforming Science Teachers into Science Education Leaders

Registration Form

The Registration Form can be accessed on the SECO Website at: www.SECOonline.org

Learn about 21st Century technological careers, and the skills they entail, in this collection of media resources.

Adapted for use by high school students and teachers, these resources have been developed in collaboration with Centers and Projects in the National Science Foundation's Advanced Technological Education program.

<http://www.teachersdomain.org/special/ate/>

Earth Expeditions from Miami University

OXFORD, Ohio - Applications are being accepted for 2011 summer/fall graduate field courses and a master's program that offer international conservation studies in 12 countries throughout Africa, Asia, Australia and the Americas. New in 2011 are courses in Australia and Guyana.

Created in 2004 by Miami University's Project Dragonfly and the Cincinnati Zoo & Botanical Garden, Earth Expeditions graduate courses and now the Global Field Program (GFP) master's degree bring together graduate students, scientists, educators and community leaders at critical conservation field sites worldwide.

In addition to Australia and Guyana, sites for 2011 include the Amazon, Baja, Belize, Borneo, Costa Rica, Kenya, Mongolia, Namibia, Thailand and Trinidad.

Tuition for seven graduate credits and all basic in-country expenses are covered in the \$1,250 course costs. Accepted students are responsible for airfare.

Earth Expeditions and the GFP, which can be completed part-time from anywhere in the United States or abroad, are open to educators and other professionals from all disciplines and settings, regardless of grade level or academic focus. For information and to apply, please visit:

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

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

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

Project Dragonfly reaches millions of people each year through inquiry-driven learning media, public exhibits and graduate programs worldwide. Dragonfly is housed at Miami University, a state university in Oxford, Ohio, established in 1809 and listed as one of the eight original Public Ivies.

CONTACT: Connie Malone 513.529.5103

EarthExpeditions@muohio.edu

Project Dragonfly, Miami University, Oxford, Ohio 45056

Video On Demand from the Zoo

We are looking for science teachers who would like to participate in our asynchronous programs utilizing our Zoo created Wikispace site.

This year, Cleveland Metroparks Conservation Education Division has added Video-On-Demand for grade levels 6-12. Learn about conservation and science topics within your classroom, which best fits, your schedule. Utilize video-on-demand to guide through lessons and post responses on our Zoo-created wikispace.

Current Offerings:

Ohio Wetlands: Trumpeter Swan Reintroduction

Can the reintroduction of an animal increase the level of conservation for both a habitat and a species? Learn how this effort increased biodiversity.

Race Around Africa Game

Students save their favorite African animals using their knowledge of African animals, geography, history and more. Let's hope everyone who plays stays one step ahead of the poacher.

More programs will be added this spring: Elephants, Migratory Birds and Bushmeat.

Please visit us at www.clemetzoo.com and look for VOD under the distance learning topic.

Cathy Ryan-Smith, Education Specialist/Distance Learning, Cleveland Metroparks Zoo
216-661-6500 Ext. 4479
<mailto:cmr@clevelandmetroparks.com>

Teachers are invited to get and use free products from Zero Landfill.

Once you get put on their mailing list, you hear from them often about all of their activities.

<http://zerolandfill.net/aboutus>

Toyota TAPESTRY Program Now Accepting Entries for 21st Annual Science Grant Competition

Celebrating its 21st anniversary, the Toyota TAPESTRY Grants for Science Teachers program, the largest science teacher grant program of its kind in the nation, is now accepting entries for the 2011–2012 program year.

Sponsored by Toyota Motor Sales, (TMS) U.S.A. , Inc., and administered by NSTA, the program offers \$10,000 grants to K–12 teachers for innovative science projects that enhance environmental science education in their school and/or district over a one-year period.

Fifty \$10,000 grants totaling \$500,000 will be awarded this year. Applicants must either be an ele-



Learn some exciting, simple, low-cost experiments to engage your students!

Attend a one-week training next Summer – FREE!

ASM MATERIALS CAMP® 2011

Who: High school general science, chemistry, physics, math and technology teachers; middle school science teachers.

What: A one-week workshop to show you how to use low cost / no cost, simple labs and experiments using everyday materials that can be integrated into your existing lesson plans.



Why: To engage and excite young people in science and math!

Where & When:

Several ASM Materials Camp-Teachers locations throughout the U.S. and Canada. Please visit <http://www.asmfoundation.org/> to view the schedule.

Program Fees: None—program includes lunch and supplies; transportation and other costs are your expense.

Credit: 2 graduate credits available for an additional cost of about \$200.

Housing: Housing for non-local participants will be provided (applies to residential camps only).

Schedule: This is a full day (8:00 to 5:00 PM) 5-day long workshop. (Note: Possibility of late afternoon/evening in the event of fieldtrips scheduled.)

Faculty: Primary faculty are two experienced high school “Master Teachers” who have taught materials science courses for many years and helped develop this innovative approach to hands-on learning of applied science principles.

How to apply: [Schedule](#) and [online application](#).

For more information, please visit <http://www.asmfoundation.org/> or contact: Jeane Deatherage, Administrator of Foundation Programs at (<mailto:jdeather@asminternational.org>).

Pergentina L. Deatherage, Administrator, Foundation Programs, ASM Materials Education Foundation
Materials Park, OH 44073, jeane.deatherage@asminternational.org 800-336-5152, ext. 5533

Mission: *"To excite young people in materials, science, and engineering careers"*

<http://www.asminternational.org/portal/site/www/foundation/about-the-foundation>

mentary teacher who teaches science in the classroom or a middle or high school science teacher, with a minimum of two years teaching experience. Individual science teachers or a team of up to five teachers can submit proposals.

Since the program's inception in 1990, Toyota TAPES-TRY grants totaling more than \$9.2 million have been awarded to science teachers across the country.

For more information about the Toyota TAPESTRY Grants for Science Teachers program or to learn how to apply, visit the [TAPESTRY website](#). Applications must be submitted no later than **February 23, 2011**, to be considered.

Check out the new Life Science Investigation

pages at Ideastream's web site. Engage your students in an investigation around the Asian Carp! Click the link below. www.wviz.org/ljsi

Airships for the 21st Century

They're based on the same flight principles that have governed airships since the 1800s, but these future commercial and military vehicles break from tradition. They will lift heavy payloads, remain aloft for months at a time, and fly without pilots—all while expending far less energy than a conventional airplane or unmanned aerial vehicle. [Read more and watch the video.](#)

From Page 9 the study says, arguing the 2005 event will have long-term consequences for the health of reefs. Such events are also likely to become more common as global warming continues, concludes a team of

65 authors in 22 countries. They predict "a troubled future for tropical marine ecosystems under a warming climate." Lead author Mark Eakin, who coordinates the National Oceanic and Atmospheric Administration's Coral Reef Watch, said the new paper presents the "first time there's been a full analysis of what happened across the Caribbean in 2005."

'Fishing Down Food Chain' Fails Global Test from *Nature News*

A tenet of modern fisheries science may be unfounded, suggests a study of how catches are affecting marine ecosystems. The finding has sparked a heated debate about how best to measure humanity's impact on the ocean.

A landmark study in 1998 found that we are 'fishing down the food chain' worldwide--in other words, exhausting stocks of top predators such as cod before switching attention to smaller marine animals. This has since become accepted wisdom. But a study published in *Nature* suggests that the indicator on which this claim is based--'mean trophic level' or MTL--is severely flawed.

FDA, FTC Crack Down on Caffeinated Alcoholic Drinks

from the *Washington Post* (Registration Required)

Federal officials began a crackdown on potent alcoholic drinks that contain caffeine, warning companies that market the increasingly popular but dangerous beverages that the products are illegal.



Margaret O'Reilly & Connie Kowalski browse the Growing Up Wild materials



New Prez, Vicki Searles, leads a tour of the new African Elephant Exhibit at the Fall Conference