

Connecticut Science Supervisors Association



Newsletter

November/December, 2009

Volume XIX, Number 2

President's Message

Harry Rosvally

rosvah@danbury.k12.ct.us

Please join me in welcoming a new officer on the CSSA Board of Directors – Melinda Meyer has agreed to serve as Vice-President for the remainder of this year. With Bruce Faitsch's resignation last June, I became president and Fred Myers (Past President) became the Vice-President until Melinda's appointment at the November board meeting. Melinda will also maintain her role as Membership Secretary until a replacement can be found. Bruce is busier than ever in his role with Project Opening Doors. I think Fred is relieved to be back in his advisory role as Past President.

The beginning of the school year has flown past and the beginning of the calendar year is swiftly coming upon us. Both are times of fresh starts when people make resolutions. "I resolve to stick to my exercise regimen" or "I resolve to hold more joint meetings with the middle and high school science teachers" or "I resolve to go into an elementary classroom once per month to observe or model a science lesson".

Why not resolve to make full use of your CSSA membership this year? Our annual membership fee is among the lowest for any organization. Our regularly scheduled dinner meetings receive generous sponsorship from our valued vendors so that the facilities expenses do not need to be passed along in the dinner price. For that dinner price, we provide world-class speakers to engage and inspire us. The pre-dinner workshops are included. This year, we took on an ambitious action research project to provide additional professional development workshops on the "off months" when we do not have a dinner meeting. We put out the invitation to "Come and join a learning community" as we use the collective experience and wisdom of the group to

learn from one another about what makes 'Effective' Professional Development. Our recent "off month" workshop was held at Wesleyan University (thanks to Mike Zearth and Bob Borello of PIMMS for coordinating the facility for us - PAC Building/Harriman Hall Rm 421) and we had a lively discussion about starting with a Needs Assessment. We also laid out the topics for upcoming workshops. Our pre-dinner workshop on December 9th is focused on evaluating on-line PD sources. These include on-line courses, webinars, and videos (e.g., from the Annenberg CPB site). The January 13th session will provide an opportunity to apply new learning and sit down and write a needs assessment (that suits your school/district's needs). The February 10th session will focus on the actual delivery of effective PD. The March 3rd and April 14th sessions will focus on assessing and soliciting feedback on PD. This whole series on professional development came about because of a

(continued . . .)

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Needs Assessment that CSSA put out last spring for our members. This was near the top of most people's lists! Oh, did I mention that the "off month" sessions are FREE? Because of when we scheduled them (4:30-6:30pm), we even provided free refreshments (sandwiches, soda, salad, and cookies!) I'd like to say something clever and catchy, like "Membership has its privileges", but I think that line is already trademarked.

I resolve to attend each of the PD sessions offered by CSSA this year. I always come away having learned something new, and I always make connections with my colleagues around the state - they become my resources whom I phone when a new challenge crosses my desk. You may feel isolated in your role in your district (like when you personally have to perform a chemical inventory in the middle of the year and

you realize what a liability some of those excess chemicals have become), but you are part of a network that is over 100 members strong and spread across the state of Connecticut. That's worth far more than the price of membership. As an organization, we have resolved to be responsive to the needs of our members. As president, I want to hear from you when you feel there is something that we could be doing (or doing better) to meet your needs.

Finally, in your role as a science supervisor or a science teacher, you are in a position to support and recognize the contributions of your colleagues. Nominate someone for an award. Information about the Presidential Awards for Excellence in Math and Science Teaching (PAEMST) and other awards are available on our website (<http://cssaonline.net/awards.htm>).

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Pre-dinner professional development

Explore and Evaluate Online PD sources. The professional development subcommittee whose members include: Harry Rosvally, Melinda Meyer, Holly Harrick, Tammy Mockus, Marilyn Odell, and Sandy Justin will facilitate this afternoon's workshop.

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About Tonight's Speaker

Kenneth R. Miller is Professor of Biology and Royce Family Professor for Teaching Excellence at Brown University. A cell biologist, he serves as an advisor on life sciences to the NewsHour, a daily PBS television program on news and public affairs, and is a Fellow of the American Association for the Advancement of Science (AAAS). Miller is coauthor, with Joseph S. Levine, of five different high school and college biology textbooks used by millions of students nationwide. In 2005 he served as lead witness in the trial on evolution and intelligent design in Dover, Pennsylvania. His popular book, *Finding Darwin's God: A Scientist's Search for Common Ground between God and Evolution*, addresses the scientific status of evolutionary theory and its relationship to religious views of nature. His latest book, *Only a Theory: Evolution and the Battle for America's Soul*, addresses the continuing struggle over how evolution is to be understood in American society. His honors include the Presidential Citation of the American Institute of Biological Science (2005), the Public Service Award of the American Society for Cell Biology (shared with Dr. Barbara Forrest in 2006), and the Distinguished Service Award of the National Association of Biology teachers (2008). In 2009, Miller was honored with the AAAS Public Understanding of Science and Technology Award (2009), and with the Gregor Mendel Medal (2009), presented by Villanova University.

Visit Ken's website at: <http://www.millerandlevine.com/km/>

Editor's Corner: Developing your Personal Learning Network

Frank LaBanca

labancaf@oxfordpublicschools.org

<http://problemfinding.labanca.net>

As practicing professionals who strive for continuous lifelong learning, we often recognize that adult scholarship takes different forms. We appreciate that our learning is not just what we read in books, view on the Internet, or hear from an expert presenter. More importantly, we recognize that we construct our knowledge through the social-cognitive interactions that occur with our colleagues. Many of us choose to belong to organizations like CSSA to nurture these relationships with our peers, which, in turn, promote our own individual professional growth. We talk with each other in person, by phone, by email, or by whatever means necessary to collaborate. This is a Personal Learning Network (PLN). As individuals, we count on others with similar goals, visions, and ideas to validate or even challenge our conceptions so we can grow individually while also building capacity with our constituents.

So how do we develop these Networks, nurture them, and keep them thriving? Certainly our face-to-face interactions are critical, but today's technology offers us more options and power to communicate with others. Many web-based tools are specifically designed with interactive features. Sometimes dubbed Web 2.0 or the read/write web, these sites allow simple production and the ability for others to provide reactions or comments. Blogs, wikis, podcasts, and discussion forums allow individuals to produce original work, publish it online, and solicit feedback from others. Knowledge flow can occur in two directions. Individuals become not only consumers but producers of information.

Those wishing to integrate Web 2.0 interactive technology into their Network do not have to be savvy at programming. Rather, the web tools are menu driven, object-oriented, and often have interfaces that look like common word processing software packages. This is important because it allows educators to focus on content, concepts, and ideas, *not* the distracting minutia

of web coding. It's not about the technology, but rather the people that the technology connects.

For example, I maintain a blog (problemfinding.labanca.net). I started the blog as part of my dissertation work, but continue to use it both for my own reflection of educational issues and as an instructional tool with graduate students with whom I work. A blog, or weblog, is a personal chronological online journal record of thoughts, beliefs, and activities that has interactive commenting features for both the writer and readers. I personally enjoy writing, but I find that the asynchronous responses I get from other thoughtful professionals help me professionally develop more.

Why share this? Apart from some shameless self-promotion of my own work, I find that the interaction that takes place between my readers and me, help to challenge my own thinking. What's new is that these challenges and discoveries, by their own nature, caused a feedback loop of new ideas and thought that each lead to some new thought. However, when I started reading the blog postings of other educators, and began posting responses to their writing, I began to understand the importance of the Network. The Network consists of people I personally know, and others that are just cyberspace compatriots. My face-to-face and digital PLN partners help me do my job better, because they expand my mind, challenge my thoughts, and provide me with perspectives that I may have never considered.

Will you become a part of and help me to continue to develop my PLN? I will cross-post this article on my blog: <http://problemfinding.labanca.net>. Please come for a visit, and more importantly, *leave a comment*. That's how the Network builds its capacity! Collectively we can continue to develop and improve the educational enterprise by applying novel, collaborative, and innovative strategies to our own learning

Safe Science: Be Protected!

Dr. Ken Roy

Director of Environmental Health & Safety
Glastonbury Public Schools
Glastonbury, CT 06033-3099

Safety Compliance Consultant
NSTA, NSELA, ICASE
Fax 860-652-7275

Email: Royk@glastonburyus.org

Elementary Science Safety!

I. GOOD NEWS! BAD NEWS!

Elementary or primary level educators are finally doing more hands-on science over the past decade. General curriculum and instruction has moved once again from memorizing by reading about science to learning by doing science. Science education curriculum and instruction – especially at the elementary level, tends to rise and fall like the ocean tides! Given the high tide of hands-on science is in, what is the bad news? With the resurrection of students doing science, few elementary educators are prepared safety-wise. What then are some areas which should be addressed for a safer approach to elementary science?

II. MAKING ELEMENTARY SCIENCE SAFER!

How can we help make hands-on elementary science safer for both students and teachers? There is no magic bullet but there are some basic areas of focus. Consider addressing the following safety items to help make the hands-on science experience for students an enriching and rewarding learning experience:

- A. Safety Training: No matter what level students are at grade-level wise, safety training is crucial. It sets the tone and expectations for appropriate best behaviors. Look at safety protocols for all elementary level science hands-on activities – be it working with soil or using a hot water.
- B. Acknowledgement Form: Share those safety expectations with both the students and parents/guardians with a written acknowledgement form. The acknowledgement form lets the student and parents know hands-on science activities are fun but also need to address safety issues. This differs from a contract which is not legally binding for young students. The acknowledgement form lets the students and parents know there are best practices which must be followed in order to make it safer in the classroom. This protects not only the students but also the teacher from a legal perspective.
- C. Reinforcement: Throughout the school year, before each hands-on activity is performed, teachers should review and reinforce safety. It should not be a drive-by experience once a year but an ongoing reinforcement opportunity.
- D. Age-appropriate Science Activities: Make sure hands-on activities are age appropriate for students. Can they developmentally handle both the concepts, content, application and safety behaviors required?
- E. Keep it simple and organized: Young students learn the best by making things simple, not complicated. Simplify activities by make providing few steps in the process with reinforced summaries and assessments.
- F. Provide appropriate supervision: If possible, try to secure volunteers to work with your students on about a 1: 5 ratio. This allows all students to be involved – and to stay involved in the learning experience.
- G. School Health & Safety Protocols: Make sure you have reviewed all relevant health and safety protocols required by your school – e.g., evacuation, lock-downs, use of fire extinguishers, etc.
- H. Housekeeping: Remember to remove all trip/fall and slip/fall hazards from the work area when doing science activities. This includes things such as back packs, books, clothing, spilled liquids on the floor, etc.

- I. Food and Drink Prohibition: Science work areas should be void of food and drink during any hands-on activities. Once completed, work tables should be washed with soap and water. Floors should be swept and in some cases washed.
- J. Personal Protective Equipment (PPE): Yes – even at the elementary/primary level, there are some types of activities which required PPE! Examples are safety glasses which using solids, projectiles, etc. Indirectly vented chemical splash goggles which using hazardous liquids – this even includes vinegar or acetic acid solutions. On occasion, hand protection may be required – gloves and clothing protection or aprons.
- K. Security: Make sure all chemicals, equipments, etc. are secured under lock and key. There could be legal issues for teachers if a student take science materials out of the classroom and get hurt in the process of using them.
- L. Practice Make Perfect: The teacher should have done the hands-on activity prior to having students doing it. This goes for all activities including commercially prepared kits, journal activities recommended by peers, etc.
- M. Hygiene: Remember – no matter what the activity, students should wash their hands with soap and water upon completion of the class. This is appropriate whether gloves are used or not.
- N. Equipment: Be very careful in what equipment is used at the elementary/primary levels – especially if it is hand-me-downs from the middle or high school. Also watch for donated equipment. Heat sources are especially problematic. Under no circumstances should alcohol lamps be used, save the few that are designed with safety in mind. Gas burners are another faux pas. Hot plates under adult supervision may be used. In some cases candles could also – again under adult supervision in the upper elementary grades.
- O. Flora and Fauna: Caution must be exercised when bring plants or animals into the elementary classroom. Never bring in animals caught in the wild! They may have disease that could challenge both the health of students and teachers. Be sensitive to students with allergies – especially respiratory. Know your plants – especially those which may be poisonous or toxic.
- P. Blood and Body Fluids: Never use any blood or body fluids. This includes cheek cells and blood typing. The risk to bloodborne pathogens is too high!
- Q. Hazardous Chemicals: Make sure you have reviewed the material safety data sheet or safety data sheet in making judgments about chemical use. This includes alcohols and other flammables, indicators, vinegar and other acids, and other chemicals.
- R. Fungi, Molds, Bacteria, Other Microbes: Given the rise of MRSA in the 1960's, Strep bacteria, molds, etc., teachers should not involve students with any activities requiring the culturing of microbes. Use preserved slides or bacteria slides made from live yogurt or kefir cultures. Again, the risk is too high, especially with the potential for immune suppressed students on board.

FINAL THOUGHTS!

In summary, the items listed above are only an outline for making the science experience safer at the elementary level. Make use of peers, professional conferences, publication articles/safety columns and safety training to enhance your effectiveness in the classroom or as an elementary supervisor.

Live Long & Prosper Safely!

RESOURCES:

Elementary Science Classroom (U.S.A.): <http://www.nsta.org/elementaryschool/?lid=hp>

Science Central.Com: <http://www.sciencecentral.com/category/9822/index4.html>

Science Lesson Plans K-8 (Canada):

http://canadaonline.about.com/od/sciencelessonplans/Science_Lesson_Plans_K8.htm

U. K. Elementary Science Resources (U.K.): <http://www.iss.k12.nc.us/tech/jparker/elemscites.htm>

News Briefs: STEM Education and the White House's "Educate to Innovate" Program

EDUCATE TO INNOVATE (edited from:
<https://www.whitehouse.gov/issues/education/educate-innovate>)

What is Educate to Innovate

President Obama has launched an "Educate to Innovate" campaign to improve the participation and performance of America's students in science, technology, engineering, and mathematics (STEM). This campaign will include efforts not only from the Federal Government but also from leading companies, foundations, non-profits, and science and engineering societies to work with young people across America to excel in science and math.

What We Must Do

- Through "Educate to Innovate" and other efforts, we must:
- Increase STEM literacy so that all students can learn deeply and think critically in science, math, engineering, and technology.
- Move American students from the middle of the pack to top in the next decade.
- Expand STEM education and career opportunities for underrepresented groups, including women and girls.

As part of the campaign, this Administration hopes to do a series of events, announcements and other activities that build upon the President's "call to action" and address the key components of national priority.

WHITE HOUSE PUSHES SCIENCE AND MATH EDUCATION (edited from:

<http://www.nytimes.com/2009/11/23/education/23educ.html?pagewanted=all>)

By Kenneth Chang; November 22, 2009

To improve science and mathematics education for American children, the White House is recruiting Elmo and Big Bird, video game programmers and thousands of scientists.

President Obama will announce a campaign Monday to enlist companies and nonprofit groups to spend money, time and volunteer effort to encourage students, especially in middle and high school, to pursue science, technology, engineering and math, officials say.

The campaign, called Educate to Innovate, will focus mainly on activities outside the classroom. For example, Discovery Communications has promised to use two hours of the afternoon schedule on its Science Channel cable network for commercial-free programming geared toward middle school students.

Science and engineering societies are promising to provide volunteers to work with students in the classroom, culminating in a National Lab Day in May.

The White House has recruited Sally K. Ride, the first American woman in space, and corporate executives like Craig R. Barrett, a former chairman of Intel, and Ursula M. Burns, chief executive of

Xerox, to champion the cause of science and math education to corporations and philanthropists.

Dr. Ride said their role would be identifying successful programs and then connecting financing sources to spread the successes nationally. "The need is funding," she said. "There is a lot of corporate interest and foundation interest in this issue."

Some of the initiatives were already in the works and would have been rolled out regardless of the administration's campaign. "Sesame Street" already planned to incorporate nature into this year's season, but has now decided to add discussions of the scientific method in next year's episodes.

"We've really never kind of approached it that way before," said Gary E. Knell, president and chief executive of the Sesame Workshop.

Time Warner Cable had already decided to devote 80 percent of its philanthropy efforts to science and math education before Mr. Obama's speech in April. But the company adjusted its project to fit in with the others.

"Being part of a bigger effort," said Glenn A. Britt, the chief executive, "increases the chances that the effort will be successful."

PRESIDENT OBAMA LAUNCHES "EDUCATE TO
INNOVATE" CAMPAIGN FOR EXCELLENCE IN
SCIENCE, TECHNOLOGY, ENGINEERING & MATH (STEM)
EDUCATION (edited from: <http://thepage.time.com/background-obamas-educate-to-innovate-initiative/>)
November 23, 2009

Nationwide effort includes over \$260 million in public-private investments to move American students to the top of the pack in science and math achievement over the next decade

President Obama today launched the "Educate to Innovate" campaign, a nationwide effort to help reach the administration's goal of moving American students from the middle to the top of the pack in science and math achievement over the next decade.

Speaking to key leaders of the STEM (Science, Technology, Engineering & Math) community and local students, President Obama announced a series of high-powered partnerships involving leading companies, foundations, non-profits, and science and engineering societies dedicated to motivating and inspiring young people across America to excel in science and math.

"Reaffirming and strengthening America's role as the world's engine of scientific discovery and technological innovation is essential to meeting the challenges of this century," said President Obama. "That's why I am committed to making the improvement of STEM education over the next decade a national priority."

Special thanks to tonight's sponsor:



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CONTACT INFORMATION FOR THE CT REPRESENTATIVES ARE AS FOLLOWS:

John Landers

Public 6-12 Fairfield, Litchfield and New Haven Counties
john.landerson@pearson.com

MaryAnn O'Hagan

Public 6-12 Hartford, Tolland, New London, Windham and Middlesex Counties
maryann.ohagan@pearson.com

Merrill Beckett

Private and Parochial 6-12 for all of Connecticut
merrill.beckett@pearson.com

Melinda Meyer
P.O. Box 7282
Wilton, CT 06897

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