

28th Annual Eastern Section STANYS Siena Conference

Siena College, Loudonville, NY

Friday, October 16, 2009

Agenda:

- 3:00-4:10 pm Exhibitors, refreshments, registration Sarazen Campus Center
- 4:10-4:25 pm Welcome, presentation of Service Award Sarazen Campus Center
- 4:30-5:20 pm Session I
- 5:40-6:30 pm Session II
- 6:45-7:45 pm Dinner, Serra Hall
- 7:55-9:00 pm Door Prizes and Keynote Speaker

Session I: 4:30-5:20pm

- A. The Changing Faces of Vitamin D.** *Daniel Wulff, University at Albany.* Vitamin D is needed for bone health, immune function, and colon cancer prevention. A majority of Americans, especially in northern climates, have insufficient vitamin D. Biology/General.
- B. Assessment Strategies for the Secondary Science Classroom.** *Joan Wagner.* This workshop will focus on a proactive approach to assessing students. In education terminology, we call it formative assessment. This can be done formally or informally. The presenter will share some effective approaches she has used. MS / HS.
- C. Teacher Generated Materials and Free Resources from the Howard Hughes Medical Institute on the Brain, Memory and Nerve Cell Communication.** *Bud Bertino, University at Albany, and Patti Bertino, retired, Howard Hughes Medical Institute.* Join us for this year's program on brain research, view animations, film clips and receive free DVDs, posters and our teacher-generated materials on the science of the brain. Biology/general.
- D. Keeping our Earth Green: EE in the Classroom.** *Nancy Castaldo.* Just back from speaking at the World Congress of Environmental Education, author Nancy Castaldo will present topics from her recent book, Keeping Our Earth Green. Elem./MS.
- E. Incorporating Nanotechnology into your Class.** *Paul Federoff and Dr. Chang Ryu, SAR Physics – Burnt Hills- Ballston Lake, and RPI.* A brief and general overview of nanotechnology with specific examples of current projects at RPI. Hands-on-classroom activities for high school curriculum. HS.
- F. GPS (Geographic Positioning System) for the Classroom.** *Jeffrey Zipkin, Waypoint Technology Group.* We will discuss four main topics: What is GPS? How does it work? How can one bring GPS learning into the classroom? What are real world applications?

Earth Science, High School and Middle School.

- G. Take Elementary Science to a New Level.** *Brenda Brooks and Robert Cook, HF Intermediate School.* Learn how to take elementary science to a new level of student interaction by developing a hands on, experienced based, lab centered program. Elementary.
- H. The Audubon Experience.** *Pam Musk, Audubon, NY.* Learn about Audubon's programs and nature centers. You will find out what is available to teachers and make suggestions to help us better support you and your curriculum. Elementary
- I. River Edge-Hudson River Dredging Project- The Grade 5-8 component.** *Tracy Jameson, WSWHE BOCES.* The River Edge 5-8 curriculum was written and plotted by a team of Social Studies/English/Science/Spec. Ed. /Media specialist. Art/Career teachers. After writing the curriculum the team piloted and adjusted lessons accordingly. The beauty of the curriculum is that it can be used as a theme/team unit. Environmental/intermediate.
- J. A Mine is a Terrible Thing to Waste.** *Paul H. Griggs, Griggs-Lang Consulting Company.* Mines are absolutely essential and environmental concerns no less so. Can the two ever be compatible? There is more to the story than a knee jerk response. Gen./Environmental Science/Earth Science.
- K. Astrobiology and the Science Curriculum.** *Prof. John W. Delano, PH.D., SUNY Albany.* Can astrobiology, a multidisciplinary field seeking to constrain the origin and distribution of life in the galaxy, be infused in the high school science curriculum, be aligned with the NYS learning standards, and promote student learning? NASA thinks so. HS-all areas.
- L. Physics Laboratory with EXCEL.** *Brian Lovelace, Greenville HS, SUNYA.* The presentation demonstrates techniques in using EXCEL to perform data analysis in physics experiments. Experiments to be discussed include: the Pendulum, Hooke's law, the Inclined Plane and Free Fall. HS Physics.
- M. A Forensic Toolmark ID Lab -- Simulating Head Wounds Using Pumpkins.** *Barbara Brabetz, Natural Sciences Department, SUNY Cobleskill.* Hard on the outside, soft & squishy on the inside, a pumpkin is a good simulation of a human skull. Learn how to identify toolmark patterns made by striking or stabbing simulated soft tissue in an exercise for middle- and high- school students. The activity supports the concepts of pattern recognition and scientific method development. Forensics, General.
- N. 50 Tips for New Teachers.** *Becky Remis and Tom Shiland.* Come hear our tips or bring your own. This session will help newbies with strategies for review, notetaking, literacy, labs, demos, and classroom management, all while keeping your sanity! All.
- FF. Heifer International Global Science Curriculum.** *Dr. Kari Murad, The College of Saint Rose.* Come and explore an integrated global science curriculum based on sustainability, science, and civic engagement. We will review the educational resources of Heifer Education provided by Heifer International and offer you ways to better understand how issues of global hunger and poverty can be discussed in your elementary/middle school science curriculum. You will leave with many lesson plans, ideas, and a re-energized determination to be part of the solution to world poverty and environmental sustainability. Elementary and General

GG. Teaching Science to Students with Disabilities. *Christine Jacobia, Employment Specialist and former science teacher.* Learn techniques that can make teaching science easier and more fun for students with a variety of learning disabilities in your classes. Techniques will help with all students and focus on a variety of learning styles and issues which are seen in regular education classes or integrated classes. Middle and High School, Elementary

Session II: 5:40-6:30pm

- O. Medical Mystery.** *Joyce Valenti, Windham-Ashland-Jewett Central School.* Explore a real-life case study about a cholera epidemic. Why are people who have been vaccinated against cholera getting sick? Hands-on activity. Resources provided. HS – Biology.
- P. What makes a Good Magnifier.** *Debbie Valerio and Alan Seidman, Windham-Ashland-Jewett Central School, Margaretville Central School.* Participants will use several different methods to collect data in order to determine the best magnifiers. Liquids as well as various glass objects will be used. Elem./Gen.
- Q. Rekindling the Fires of Science Teaching and Learning using Rube Goldberg: A Project-Based Learning Experience for ALL!** *Steve Fielman, Ichabod Crane Middle School, DAL Intermediate.* Experience the challenge of a hands-on Rube Goldberg Project that connects even your most “unique” learners to the wonderful world of PBLs. Intermediate/Physical science.
- R. If I Only Knew Then What I Know Now.** *Sherry Riese and Theresa Newkirk, Saratoga Springs HS.* A question and answer session: Hear from a newly tenured teacher and a veteran teacher. Learn tips that can make the first years of teaching to go more smoothly, including pitfalls to avoid. This is for pre-service or non-tenured teachers. General.
- S. The Earth, Moon, and the other Moon** *Dr. E Stander, SUNY Cobleskill* Why do we have two tides a day when we only have one Moon? What effect does the tidal cycle have on Earth? All shall be fully revealed. General, Earth Science
- T. Why Do Some Gain More Weight Than Others?** *Daniel Wulff, University at Albany.* Three hypotheses will be discussed, namely the leaky proton gradient hypothesis, the sluggish reward circuitry hypothesis and the eat more-twitch more hypothesis. Biology/Gen.
- U. Let’s get Literate!** *Joan Wagner, Focus on Learning.* Using literature to teach science can be very motivating to the learner. Children read stories, answer questions and learn environmental concepts in science. Make a working model of a bald eagle and read some mythology. Use Dr. Seuss’ classic story of the Lorax to teach important environment concepts. Play the Lorax game; view the movie about the Lorax. Elementary.
- V. Forensic Glass Analysis.** *Bud and Patti Bertino.* Learn how glass analysis is used to solve crime. Participants will examine glass fracture patterns, the Becke line, density and use refractive index of glass samples to match suspects to crime scenes. Handouts provided. General, HS Forensics.
- W. Insight on Renewable Energy from GE Global research.** *Kevin Lang, GE Research.* Renewables represent the smallest but fastest-growing piece of the world’s electricity

generation portfolio. Learn what General Electric is doing with wind, solar, and other technologies, and how they fit into the big picture of energy and climate change.

- X. I'm Never Going to Need to Know This!** *Paul Federoff, SAR Physics, Burns Hills- Ballston Spa.* Sure, athletes, artists, and our future engineers need to know physics, but what about everyone else? We will discuss specific common situations where we will all need, yes need to know physics. HS Physics, General.
- Y. Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS).** *John S. Quinlan, National Weather Service.* CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation (rain, hail, and snow) . HS Earth Science.
- Z. Energy Education with a Jolt of Solar.** *Jamie Joanethis, NYSERDA.* Are your students (and teachers) energy smart? Solar savvy? Our highly interactive hands-on lessons show energy efficiency, economic impact solar power. Come, engage, and get free examples. K-12, general.
- AA. Using ChemMatters in the Classroom.** *Ron Geuther and Maria Russo, Cohoes HS.* Participants will receive copies of articles from this ACS publication that can be used in the classroom to accompany a lesson, a lab activity, or that could be used as emergency lesson plans. HS, Chemistry/Physics.
- BB. Earth Science Share-A-Thon and Rock Swap.** *Paul Nooney, SAR Earth Science.* Share all your greatest activities and labs with fellow Earthies. Bring several copies of the activities. Also bring any rocks/minerals to swap with other participants. Earth science, MS, HS, Elem.
- CC. Connect Four: Physical activities, Food, Technology, and Mental Constructs.** *Elisabeth Milot and Lynn Nardacci, Ichabod Crane.* Helping students make connections at the intermediate level through the use of physical activities, incorporating food, manipulatives, toys and technology allowing students to create mental constructs of abstract concepts. MS/Gen.
- DD. Creating a High School Nanotech Curriculum.** *Tania Cabrera, Schenectady Community College.* Join the presenter for a session on creating a nanotechnology curriculum at the high school level. HS/General
- EE. Wind Energy Intro: from windmills to wind turbines, history, usage, and issues.** *Linda Armour, Duanesburg Elementary School.* KidWind Power Point presentation on the history of windmills, different windmill designs, modern wind turbine technology, wind use in the US, and issues facing wind energy. All/general

**Keynote address
7:55-9:00 pm
Sarazen Campus Center**

“Rapid Global Warming 55 Million Years Ago: The Paleocene/Eocene Thermal Maximum”

**Dr. Miriam Katz
Earth and Environmental Sciences
Rensselaer Polytechnical Institute**

This is the best example of an extreme rapid global warming event in the geologic record, at rates comparable to today. I include diverse geologic evidence, which is fun- from isotopic mass balances that indicate 5-8 O C T rise in a few thousand years, to stomata densities in fossil leaves that indicate dramatic increase in atmospheric carbon dioxide, to evidence for ocean acidification (a concern facing today’s marine carbonate organisms). It also shows the progression of scientific ideas over 10 years – with proposed causal mechanisms including a Caribbean super volcano, comet impact, massive methane gas hydrate release, and more.