

Eastern Section of STANYS
29th Annual Siena Conference
Friday, October 15, 2010
3pm-9pm

Registration: 3-4pm, Sarazen Campus Center Lobby, Refreshments and Exhibitors

Welcome: 4:10-4:20pm, Sarazen Campus Center, large room

Session I: 4:30-5:20pm, various workshop locations

Session II: 5:40-6:30pm, various workshop locations

Dinner & Collegial Exchange: 6:45-7:45pm, Serra Hall

Keynote Address: Sarazen Campus Center, large room

Session I: 4:30-5:20pm

- A. Inquiry Activities, Intermediate Style** *Joan Wagner, STANYS* The presenter will share some activities she has developed for her classroom. Participants will have the opportunity to try out some of the activities. (Intermediate, Physical Science, and Living Environment)
- B. Exploring Biodiversity: The Search for New Medicine** *Bud and Patti Bertino, Howard Hughes Medical Institute* Learn how biodiversity among venomous snails and bacterial communication has led to new medical discoveries. Receive FREE HHMI DVD's, virtual lab CD's, and materials developed by teacher-presenters. (Biology, General, MS, HS, College)
- C. Hands-on Physics** *Paul Federoff, SAR Physics, Burnt Hills-Ballston Lake* Create, construct, and compete in some low cost, high entertainment physics activities that can be incorporated into any level physics course. (Physics, all levels)
- D. Pi Day** *Linda Armour, retired elementary teacher* Hang a-"round" for this one! Enjoy some great hands-on manipulative activities to address Science and Math measurement skills. Measure diameter and circumference, discover patterns, explore ratios, find your birthday in Pi, etc, all with inexpensive and/or recycled and found materials. (Elementary)
- E. Leap Into Space** *Nancy Castaldo, Taconic Schools* Leap into space with author Nancy Castaldo. Enjoy hands-on activities and a multi-media presentations. Engage your science students through art. (general, grades 1-6)
- F. Curriculum Mapping in Chemistry-an Introduction** *Maria Russo, SAR Chemistry* Introduction to curriculum mapping: why it is important, when to start, and resources for teachers. (HS, chemistry)
- G. Lights, Camera, Earth Science!** *Paul Nooney, SAR Earth Science, Section Vice-Chair, Tamarac Schools* Don't wait until the day after tomorrow. Come and learn about the basics of incorporating Hollywood movies into the ES curriculum. Popcorn not included. (General, Earth Science)
- H. Connect Your Classroom to the International Space Station** *Charles Kuenzel, Heidi DeBlock, and Charlotte Naples, Challenger Learning Center* Learn how to be part of a live downlink with the ISS during the 2010-2011 school year. The Challenger Learning Center will show you how it can support this activity. Same as Session II: U You can sign up for either session. It is not a double session. (General, Earth Science)
- I. Yes Elizabeth, You Can View Sunspots Safely!** *Janie Schwab, Dudley Observatory* Participants will use a Sunspotter for SAFE solar viewing, to observe sunspots. Once trained, teachers may borrow equipment for classroom use. Digital camera applications of collected data and classroom analysis uses will be discussed. (General, Elementary, MS, HS)

- J. Hands-on Technology** *Elisabeth Milot, SAR Intermediate Level, Ichabod Crane Middle School* This workshop focuses on integrating technology into the intermediate science classroom. Using SMARTboards, glogs, streaming videos, webquests, etc, to enhance instruction and prepare students with 21st century skills. (General, upper elementary, MS)
- K. Ya Gotta Reach 'em to Teach 'em** *Colette McCarthy, Schenectady High School* At a loss to reach the growing number of non-motivated students? Come look at a myriad of strategies to engage all students in literacy, introduce curriculum and study skills for class and lab. (General, biology, HS)
- L. Population Growth Amongst the Yahoos** *Dr. Ed Standler, SUNY Cobleskill* The presenter will show an easy way to follow the population of yahoos as they procreate their way to over and underpopulation. (Biology, Environmental Science)

Session II: 5:40-6:30pm

- N. Traveling with your Students** *Debbie Valerio, SAR Elementary, Windham-Ashland-Jewett Central School* Travel with students can be a wonderful and rewarding experience. Presenter has traveled near and far with grades 4-12. Come get some valuable information and travel, travel, travel! (General, all levels)
- O. Making Connections to the Living Environment for Pre-service/Beginning Biology Teachers** *Joyce Valenti, SAR Biology, Windham-Ashland-Jewett Central School* Teaching the Living Environment for 4 years or less? Pre-service? Workshop showcases sampler of engaging activities for your immediate implementation to meet specific major understandings of the Living Environment Core. Limited to 16 participants with 4 years of experience or less. (Biology, MS, HS)
- P. Forensic Pollen Analysis** *Bud and Patti Bertino, Howard Hughes Medical Institute* Pollen can be used in forensic analysis. View a Power Point, learn about the history and sources of pollen and engage in easy to prep, hands-on activities you can use with your students. (Biology, General, MS, HS)
- Q. A Toolbox for Assessment** *Joan Wagner, STANYS* The presenter will share strategies that will provide teachers with a toolbox to adjust their teaching to optimize student learning. (General)
- R. Building Big Bridges** *Dr. Brian Lovelace, University at Albany* Build bridges the way engineers do. This workshop presents project based learning where students design, build, and test their own bridge designs using simple materials that fit any classroom budget. Students apply simple forces of compression, tension and shear to design complex bridge structures which distribute the weight carried by the bridge. Teaching materials will be distributed and weight testing of a sample weight testing of a bridge will be demonstrated. (MS Physical Science, HS Physics, engineering, science honors)
- S. Science Assessment Through Poetry** *Linda Armour, retired elementary* There once was a workshop to choose. If you took it, how could you lose? Link science and rhyme, and have a good time. Then go home with new tools to use. Use a variety of poetry forms to develop and assess science content knowledge. The structure of several forms of poetry will be discussed, and examples of each will be shared. Bring a copy of the Standards and/or concepts/vocabulary from one of your units to practice writing. (Elementary)
- T. Local Geological Resources for Outdoor Classrooms** *Paul Griggs, Griggs Lang Consulting Geologists* New York is the birthplace of geology in North America and is home to many fascinating resources that are available for school field trips. (General, Earth Science)
- U. Connect Your Classroom to the International Space Station** *Charles Kuenzel, Heidi DeBlock, and Charlotte Naples, Challenger Learning Center* Learn how to be part of a live downlink with the ISS during the 2010-2011 school year. The Challenger Learning Center will show you how it can support this activity. Same as Session I:H You can sign up for either session. It is not a double session. (General, Earth Science)

- V. Models and Misconceptions** *Becky Remis, Membership Chair, Schalmont Schools* We use them all the time, but do we really understand them? Uncovering a model's strengths and weaknesses helps in understand the concept or process it represents. Bring a classroom model for discussion. (MS, HS, Earth Science)
- W. Community Collaborative Rain, Hail and Snow Network (CoCoRaHS)** *John S. Quinlan, National Weather Service, Albany, NY* CoCoRaHS is a unique, non-profit, community-based network of volunteers of all ages and backgrounds working together to measure and map precipitation. (General, Earth Science)
- X. Let's Have Fun with Newton's Laws!** *Steve Fielman, Eastern Section Chair, DAL Intermediate Science, Ichabod Crane MS* Understanding Newton's Laws can be both fun and interesting! We'll use basic materials to give students hands-on fun to learn about Newton and his 3 Laws! (General, MS)
- Y. Diseases, Disasters & DNA: Using Case Studies in Biology** *Kelly Ryan, Conference Registrar, Shaker High School* Use cases such as the 1918 Influenza pandemic, the Boy in the Bubble, the incredible story of Phinneas Gage's brain injury and more to engage your biology students. (Biology, MS, HS)
- Z. Learning from Student Responses to the June 2010 Regents Chemistry Exam** *Tom Shiland, Saratoga Springs High School* Results of a workshop analyzing student responses from the June 2010 Regents chemistry exam will be discussed with implications for instruction. Bring your own ideas and concerns as well. (HS, Chemistry)

Keynote Address

The Firefly satellite Mission:

Understanding Earth's Most Powerful Natural Particle Accelerator

Lightning discharges represent the release of enormous amounts of energy and are associated with familiar and powerful manifestations near the Earth's surface: thunder, a bright flash, and a powerful current that can shatter trees and turn sand to glass. Lightning may also give rise to x-ray and gamma-ray bursts, and unlike the well-known flashes of light and claps of thunder, these energetic rays are channeled upward and can be detected only from space. A new small satellite mission, called 'Firefly,' sponsored by the National Science Foundation will explore the relationship between lightning and these bursts of radiation called Terrestrial Gamma Ray Flashes (TGFs). TGFs are of inherent interest, as they result from the most powerful natural particle acceleration process on Earth, in which thermal electrons are energized to tens of millions of volts in less than 1 millisecond. By studying TGFs, we can learn fundamental physics critical in understanding not only lightning, but also solar flares, cosmic shocks, black holes, and even dust storms on Mars. Firefly is a small satellite (4.0 kg, 10x10x34 cm), that will be designed, built, tested, and operated on-orbit as part of this project. The Firefly team is collaboration between Siena College and NASA. Students at all levels (grade-school to college) are involved in all aspects of the project, from design and development to mission operations and data analysis.

Dr. Weatherwax is a Professor of Physics and the Associate Dean of Science at Siena College, in Loudonville, New York. He received his Ph.D. in physics from Dartmouth in 1995 where he studied natural auroral radio emissions, radiowave propagation, and wave-particle interactions. Following graduate school, he joined the faculty at the University of Maryland's Institute for Physical Science and Technology. He also served as a visiting professor of physics at Washington College. In 2002, he joined the Department of Physics at Siena College.