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# ***Welcome***

Welcome to the 2011 Pennsylvania Science Teachers Association (PSTA) Convention! The fact that you are here tells everyone that you are dedicated to science teaching and committed to learning new ways to communicate with today's students at all levels.

This year's Convention theme is Science: the Essence of STEM. STEM stands for Science, Technology, Engineering, and Mathematics, a seamless integration of the disciplines that shape our world as we know it. With the recent storms across our state, many of us learned how critically we depend on the developments made possible by STEM. We truly stand on the shoulders of those who went before us, and our job now is to teach and lead those students who will take our places and build for the generations to come.

Enjoy the many different offerings at the Convention, from the great diversity of talks by practicing teachers to the Exhibit Hall where vendors are ready to show off their new wares. Take time to network, to chat, to explore new topics, and to breathe in the atmosphere of being surrounded by like-minded, equally dedicated science teachers.

And don't forget, if you see someone with a Convention Committee Member streamer on his or her registration badge, or if you see a PSTA Executive Board member or your regional representative, give them a hello and a thank you. They devote many hours of time over the year, making this event possible. Enjoy!

2011 Convention Chair and PSTA President-Elect,

Kathleen Conn, Ph.D., J.D., LL.M.  
Associate Professor  
Neumann University  
Aston, PA 19014

## **Convention Committee**

Bill Ayers.....	Troubleshooting Registration/Financial
Helen Ayers .....	Troubleshooting Registration/Financial
Kathy Blouch .....	Science Leadership Dinner
Doug Brandt .....	Audio Visual
Keith Butler .....	PSTA President Troubleshooting
Kathleen Conn.....	PSTA President Elect Conference Chairperson
Patty McGinnis.....	Act 48
Herb Crawford.....	Non-PSTA Awards On-site Registration
Mike Cullin .....	Exhibits
Cheryl Hollinger.....	Act 48
Kathy Jones .....	Science Store
Don Keys .....	Treasurer
Don Kline.....	Program Contract Negotiations
Nancy Krablin .....	Evaluations
Wendy Martin .....	Banquet Program
Ed Owens .....	Registration/Credentialing
Debbie Johnson.....	Volunteers
Christine Royce .....	Executive Secretary Program Contract Negotiations
Ruth Ruud .....	Recording Secretary Awards Banquet/Meals
Steve Sexsmith .....	On-site Registration
Cathy Stephenson .....	Corporate Sponsorship
Joyce Hubert-Theriot .....	Hospitality and VIPs
Patti Vathis.....	PDE
Carli Yeager-Hall.....	PSTA Awards Past President Onsite Registration

## ***Conference Information***

### ***Registration Hours***

The registration area will be open during the following times to pick up your registration materials.

Wednesday, November 30, 2011

7:00 p.m. -10:00 p.m.

Thursday, December 1, 2011

7:30 a.m. – 3:00 p.m.

Friday, December 2, 2011

7:30 a.m. – 12:00 p.m.

### ***Meeting Rooms***

All sessions will be held at the Hershey Lodge and Convention Center. Meeting rooms are found on the Main Level and the Lower Level. Maps are provided for your convenience. Conference attendees are asked to utilize the maps provided throughout the hotel and conference center or ask any of the volunteers at the conference for directions.

### ***Session Times***

Sessions may run between one and three hours depending upon the request of the presenter. Session times can be found in the session section of this booklet. Some sessions have a limited number of seats at the request of the presenter.

### ***Exhibit Hall***

Part of the PSTA Convention features an exhibit hall representing over 60 vendors of science education materials. Under one roof, you will have the opportunity to view the latest in textbooks, audiovisual equipment, software, scientific equipment, and other science classroom materials. This is also the location of the NSTA Science Store in a Box. The Exhibit Hall is open on Thursday, December 1, 2011 beginning at 9:00 a.m. through 5:00 p.m. There will be a Grand Opening of the Exhibit Hall at 9:00 a.m. on Thursday. It is open again on Friday, December 2, 2011 from 8:00 a.m. through 3:00 p.m.

### ***Information Booth***

An Information and Trouble Shooting Booth is provided for your convenience. General convention questions can be answered. This booth is located across from the Blue Room Section of the Exhibit Hall.

### ***Meal Functions***

The Science Leadership Dinner and Awards Banquet have tickets available for purchase at the Registration Booth.

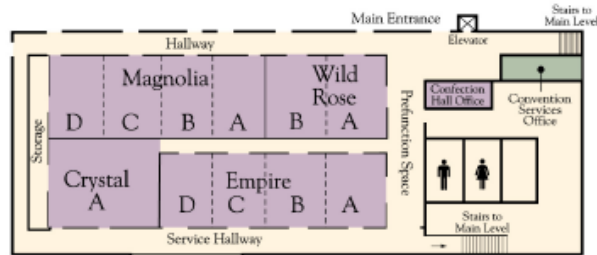
# Floor Layout/Map of Hershey Lodge

## Tower Level

## Main Level



## Confection Hall Level



## ***Business Meetings and Functions***

**Thursday, December 1, 2011**

**3:30 -4:30 p.m.**

**#1- Magnolia C**

**PSTA Board of Directors Meeting**

**Presiding: Keith Butler, PSTA President**

Panel/Discussion – All Levels – Other

The convention business meeting of the governing body, as are all PSTA Board Meetings, is open to any member wishing to attend. If you have considered running for a position but would like to see this body in action first, this may be a great opportunity. Brief reports will be presented by committee chairs as well as association business that needs to be addressed will be handled at this meeting.

**Friday, December 2, 2011**

**12:45-1:45 p.m.**

**#2- Magnolia C**

**PSTA General Membership Meeting**

Panel/ Discussion – All Levels – Other

**Presiding: Keith Butler, PSTA President**

As designated in the PSTA Constitution, each year one General Membership Meeting is to be held and presided over by the President. The purpose of this meeting is to gather input from the membership at large, summarize activities of the organization for the year, and act on any business requiring action of the membership. Your attendance and input are encouraged.

**Friday, December 2, 2011**

**7:00 – 8:00 a.m.**

**Past President's and Fellows Breakfast**

All past presidents and PSTA Fellows are encouraged to join their colleagues at this breakfast meeting. Come spend some time discussing the past, sharing stories, and looking toward the future.

## ***NSTA Science Store in a Box***

The NSTA Science Store in a Box will be back at the PSTA Convention this year to provide literature and resources to help our Pennsylvania Science Teachers stay on the cutting edge. Covering all aspects of science as well as pedagogy, the NSTA store is a valuable resource for you. So take some time to browse the resources we have to offer. We hope you will come by and see us in the Exhibit Hall during your stay at the PSTA Convention. Books will be available for review and ordering. Sorry, no purchase orders can be accepted at the NSTA Science Store. Cash, credit cards, and personal checks will be accepted for your convenience.

## ***Act 48 Credit at the PSTA Convention***

Act 48 attendance verification will once again be available at the PSTA Convention. PSTA is not an approved Act 48 provider and thus cannot offer official Act 48 credit. PSTA will, however, provide you with verification of attendance at conference sessions. If you intend to use your attendance at the convention for Act 48 credits, it is your responsibility to make sure your district accepts your convention attendance as part of their approved program.

You will find an Act 48 verification record page in your convention program. This page will consist of a grid where you can place session attendance verification labels. At the end of each breakout session, PSTA personnel will distribute a self-adhesive label which must be applied to this verification form. The labels will only be distributed to those persons who have attended the entire session and are present at the end of the session. If you enter the session late or leave early, you will not receive verification. Verification labels will only be available at the session location. Lost verification sheets cannot be reconstructed by convention officials.

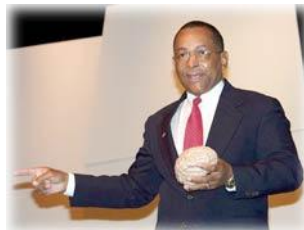
# ***Science Leadership Dinner***

*Thirteenth Annual Leadership Dinner and Roundtable Discussion*

Wednesday, November 30, 2011—Nigerian/Trinidad Room

5:30 – 9:30 p.m.

## **Brain STEM: The S.T<sup>2</sup>.R.E.A.M Model for Learning**



**Dr. Kenneth Wesson**

Dr. Kenneth Wesson delivers keynote addresses on the neuroscience of learning for educational organizations and institutions throughout the United States and overseas. His audiences range from pre-school and early childhood specialists to college and university-level administrators and faculty members. He has spoken to educators from six of the world's seven continents and can be seen on PBS and other special programs on brain development. Wesson regularly addresses educational organizations, counseling associations, school districts and civic groups, as well as parenting organizations on establishing "brain-considerate" learning environments. In addition to his speeches on the neuroscience of learning, Wesson also speaks on the subjects of early brain development, emotional intelligence, the neuropsychology of prejudice, contextual learning, diversity in learning, design and engineering, and curriculum development. Dr. Wesson has been recognized by the National Science Teachers Association (NSTA) and Shell Oil Company as a "Shell Science Scholars" and has presented numerous times at NSTA conferences.

5:15 pm	Registration (ACT 48 hours – make sure you have your ID#)
5:30 pm	Meet and Greet
5:45 pm	Welcome and Introductions: Dr. Kathy Blouch
6:00 pm	Dr. Patricia Vathis, Environment and Ecology and Acting Science Advisor
6:15 pm	Dinner Served
7:00 pm	Keynote Speaker - Dr. Ken Wesson "Brain STEM: The S.T <sup>2</sup> .R.E.A.M Model for Learning"
8:00 pm	Move to Breakout Sessions

***Sponsored by  
Office of Environment and Ecology, PDE, Delta Education and  
Continental Press.***

# ***Annual Banquet and Awards Recognition***

*Thursday, December 1, 2011 – 6:00pm – 8:30pm – Aztec/Nigerian Ballroom*

## **Finicky Females and Macho Males: The Science of Sexual Selection**



*Speaker*

**Vikram K. Iyengar, Ph.D.**

**Associate Professor of Biology, Villanova University**

Dr. Vikram K. Iyengar is a professor in the Biology Department at Villanova University, where he teaches undergraduate and graduate courses in ecology, entomology, and animal behavior. Vik received his bachelor's degree from Stanford University in 1993 and his doctorate from Cornell University in 2001, and he traces his interest in behavioral ecology back to formative outdoor experiences in high school. His research involves studying the reproductive biology of insects and other arthropods, with an emphasis on the evolution of exaggerated male traits and female mating preferences. Vik has received grants from the National Science Foundation and the U.S. Department of Agriculture, and his research has led to 15 publications in peer-reviewed journals including *Nature* and *Evolution*. The breadth of his interests is well-represented in his current projects, which include a laboratory project regarding pheromones and chemical defenses in a brightly-colored moth, a local field project investigating the role of interspecific male aggression in reproductive isolation of two damselfly species, and a marine project studying the harem mating system of an amphipod found in Washington.

### **Dinner**

Field Greens with Cocoa Toasted Cashews, Blue Cheese, Raspberries, Chocolate Balsamic Vinaigrette  
Merlot Breast of Chicken  
Chef's Choice of Potato and Seasonal Vegetable  
Hershey's Hugs and Kisses Cake  
Coffee and Tea

The following will be recognized:

### **PSTA Awardees**

Dr. G. Kip Bollinger  
Andrew Blass

### **2010 PAEMST Elementary Awardee**

Mrs. Phyllis (Penny) Glackman

### **2011 PAEMST Secondary State Finalists**

Arlynn Adamerovich  
Catherine Laguna  
Richard Schmidt

# Thursday Sessions

## Thursday, December 1, 2011 – 8:00-9:00 a.m.

- #44 Developing 21<sup>st</sup> Century Skills for Students through District-wide Collaborative Implementation of Guided Inquiry Elementary Science Curriculum  
Room: Empire A  
Presenter: Paul Joyce and Bill Vossburg, West Chester Area School District, West Chester, PA  
Demonstration—K-4—Other  
Elementary science leadership team implements guided inquiry science curricula utilizing kits, customized texts, non-fiction readers, library connections, on-line resources and science notebooks; a four year process involving elementary teacher leaders as the principle trainers and building level implementers of change.
- #84 “Time” 4 Science!  
Room: Empire C  
Presenter: Angela Hoover, Independent Consultant, Lebanon, PA  
Instructional strategies will be presented to elementary teachers that focus on how to use the elementary curriculum creatively to make time for engaging, inquiry-based science that is relevant and standards based.
- #4 Earth and Space Science Misconceptions Held by Pre-service Teachers  
Room: Empire B  
Presenter: Christine Anne Royce, Shippensburg University, Shippensburg, PA  
Future elementary teachers completed a series of Formative Assessment Probes where they were asked to examine their understanding related to earth and space topics, explain their reasoning and then reflect on where they think they learned the information. Results of research will be shared.
- #49 Introduction to Wisconsin Fast Plants  
Room: Magnolia A  
Presenter: Carolina Teaching Partner, Carolina Biological Supply Company, Burlington, NC  
Hands-On—Other—Biology  
Study complete life cycles in less than 40 days with Wisconsin Fast Plants! These quick-growing plants are ideal classroom tools for exploring genetics, life cycle, symbiosis, and environmental effects, Participants work hands-on through several activities. Free materials and samples provided.
- #27 Raising the Bar on 4-8 Guided Inquiry  
Room: Empire D  
Presenter: Bill Metz, Science Education Consultant  
Hands-On—5-8—Inquiry  
This interactive 4-8 workshop will examine ways to enhance the inquiry level of selected FOSS lessons through student centered applications. These modifications turn more of the responsibility for learning to the shoulders of the students. Program sponsored by Delta Education.
- #100 A Greener Chemistry Program – Understanding one part per Million  
Room: Crystal A  
Presenter: Linda Culpepper, John Allen, Lab Aides, Ronkonkoma, NY  
Hands-On—9-10—Chemistry  
In this workshop we will explore how to teach core chemistry concepts using a new chemistry program, A Natural Approach to Chemistry. We will carry out an inquiry based laboratory investigation that is designed to show students what one part per million actually is. Dilute concentrations are measured

using an RGB spectrophotometer. Our data will be used to determine an unknown, and to frame a discussion about why small quantities are important in our environment.

#94 Become An Environmental Investigator Using Environmental Literacy  
Room: Magnolia B  
Presenter: Ruth Ruud, PSTA President  
Hands-On—Other—Environmental  
Come; participate in a journey through trade books that lead you and your students to understanding environmental stewardship. Investigate environmental issues using hands on interdisciplinary activities. This session will utilize fiction/non-fiction children's books to present strategies to teach environmental stewardship.

#87 Continuing Education Requirements for Young Teaching Professionals  
Room: Magnolia C  
Presenter: Jerry Falco, Graduate Admissions, Lock Haven University, Lock Haven, PA  
Lecture—Other—Other  
Attendees will receive detailed information on the PA Department of Education's continuing education requirements including those for Level II Certification, Highly Qualified Teaching Status, and the PA Inspired Leadership Standards. A question and answer prior will be provided.

**Thursday, December 1, 2011 – 8:00-10:00 a.m.**

#62 MAKE-IT AND TAKE-IT: The Unseen World of Macro  
Room: Wild Rose B  
Presenter: Mitch Batoff, Professor Emeritus, New Jersey City University, Jersey City, NJ  
Hands-On—Other—Other  
In this NEW hands-on workshop you will go beyond the naked eye to explore an amazing world that few people experience and take samples of your work back to your classroom. You need to bring a digital camera, and, if possible, the instruction booklet. Fascinating workshop. Limited to first 20 people. Useful handouts. Please bring your digital camera and the instruction book (if you have it).

**Thursday, December 1, 2011 – 10:00-11:00 a.m.**

#7 Use of Metacognition as an Assessment Tool: I Failed the Test....Now What??  
Room: Empire B  
Presenter: Jeremy Wolf, Todd Kellman, and Jaime Guthier, Palisades High School, Kintnersville, PA  
Lecture—11-12—Pedagogy  
Metacognition, or the ability to think about one's own thinking, is a valuable way of developing and confirming understanding. Learn how we have taken our students beyond a re-test, to true remediation of understanding of science concepts.

#16 Sing a Little, Play a Little, Learn a LOT!  
Room: Empire A  
Presenter: Robin Zecca and Christy Ware, Delaware County Christian School, Newtown Square, PA  
Lecture—5-8—Other  
Middle school teachers: Join us for a lively and interactive presentation with classroom-tested activities and projects for Earth, Life and Physical Science topics. Lots of copy-ready handouts will be provided.

#21 New TI-Nspire Data Collection Solutions  
Room: Empire C  
Presenter: Bruce S. Karpe, Swenson Arts & Technology High School, Philadelphia, PA  
Demonstration/Hands-On—9-12, College—Other

See the latest data collection technology from TI. An opportunity to explore the new TI-Nspire, which features a backlit screen, rechargeable battery, and built-in Vernier DataQuest App. Wireless networking will also be demonstrated. Software trial CDs will be distributed to attendees.

- #58 Do You Have What it Takes?  
Room: Magnolia A  
Presenter: Patty McGinnis, Arcola Intermediate School, Eaglesville, PA  
Lecture—Other—Other  
Interested in becoming a National Board Certified Teacher? A national board certification will take you through the ultimate professional development experience and may increase your salary; many districts reward NBCTs with stipends.
- #71 EACAP: Promoting Environmental Awareness and Social Responsibility in an Environment Science Course for Pre-service Teachers and Non-Science Majors  
Room: Magnolia C  
Presenter: Mahsa Kazempour, Penn State Berks, Reading, PA  
Lecture—College—Environmental  
The session will describe the Environmental Awareness and Community Action Project (EACAP) in which students researched an environmental issue and took actions to combat the problem. Students selected issues, actions, and reflections on the impact of EACAP will be discussed.
- #72 You Can Be a Presidential Awardee  
Room: Empire D  
Presenter: Patti Vathis, Harriburg, PA  
Panel/Discussion—K-4—Other  
Attend this session to find out how you can earn this prestigious award which includes a check for \$10,000 and a visit to Washington, DC. Patti Vathis, Pennsylvania State Coordinator for Presidential Award in Excellence in Science Teaching, will lead the discussion accompanied by former Presidential Awardees. You will learn firsthand what you need to do to complete the application by going through an application on-line. You will receive tips on what makes a good application and things to avoid. The 2012 program is for elementary teachers.
- #110 The S.T<sup>2</sup>.R.E.A.M. Model for Learning  
Room: Crystal A  
Dr. Kenneth Wesson  
Science, Technology, Engineering and Mathematics, the components of “STEM” are most effectively delivered in learning contexts where they merge into the S.T<sup>2</sup>.R.E.A.M. model for student learning. When Science, Technology, Thematic Instruction, Reading/Language Arts, Engineering, Art (visual/spatial thinking – VST), and Mathematics converge in a manner similar to the various layers of a hologram that collectively produce a single cohesive image, in this case “human knowledge.”
- #99 Putting LIFE in the Life Sciences Classrooms  
Room: Magnolia D  
Presenter: Zach Barton, York County School of Technology, York, PA  
Lecture—Other—Biology  
Explores the possibilities and benefits of maintaining living specimens in the classroom and how to connect them to curriculum. Appropriate to all grade levels, the presenter will offer advice and resources of how to overcome obstacles that inhibit the use of real organisms.
- #86 The Electromagnetic Spectrum  
Room: Wild Rose A  
Presenter: Sonya Williams, NASA, Greenbelt, MD  
Hands-On—5-8—Earth Science

Light that we see, visible, represents a small portion of the electromagnetic spectrum. Developing the technology to detect and use other portions of the EM, the invisible light, has had a tremendous impact on our daily lives; i.e., radio, microwave, oven, remote controls & x-rays. Tools, materials and hands-on approaches will be provided.

- #90 Teaching Science in an Urban Setting Using a PDS Model  
Room: Magnolia B  
Presenter: Dr. Mark Twiest, Indiana University of PA, Indiana, PA  
Panel/Discussion—College—Pedagogy  
Indiana University of Pennsylvania has had a very successful model where education majors from rural area can become fully immersed in an urban student teaching experience, thus preparing them for teaching positions in cities where demand is high for teachers. Come share your own experience and see how we have accomplished this at our university.

**Thursday, December 1, 2011 – 11:15 a.m. -12:15 p.m.**

- #19 REALLY EASY Physical Science using RED Probeware Technology  
Room: Empire D  
Presenter: Julia Gooding, Hopewell High School, Aliquippa, PA  
Hands-On—5-8—Physical Science  
Learn how to integrate the RED units into your classroom/laboratory. Hands-on activities include: – Buoyancy using the force probe – Friction using the force probe – Centripetal force using the force probe – Pressure in a Column Inquiry activity.
- #37 Build a Human Body and Create Greater Understanding of Anatomy  
Room: Empire B  
Presenter: Chuck Roney, Eastern Camden County High School, Retired 6/11, Voorhees, NJ  
Hands-On—11-12—Biology  
This workshop will provide educators with a new method of teaching anatomy. Through building body systems in clay, students understand the size, shape, location, purpose, and function of everything they build. Learn tips and techniques to implement this hands-on curriculum.
- #39 Nanoscale Modeling using Bubbleology Techniques  
Room: Empire A  
Presenter: Joyce Hubert-Theriot, Rustin High School, West Chester, PA  
Hands-On—9-10—Physical Science  
Student utilization of bubble plating in order to understand the interaction of nanosized materials has been successfully implemented from elementary activities to complex high school labs. Participants will actively use materials, review nanoscale models and connect curriculums, (Packets, & electronic access provided).
- #60 STEM: Humpy Dumpty Fell off the Wall  
Room: Empire C  
Presenter: Carla Johnson, PASCO Scientific, Roseville, CA  
Hands-On—Other—Physical Science  
Experience one of PASCO's new STEM Modules using probeware. Walk through the process of designing a solution to a problem, testing it, analyzing it and sharing the results. Lab activity is aligned to State and National Standards.
- #66 Super Park!  
Room: Magnolia A  
Presenter: Kent Brusstar, Lebanon Valley College-MSE Program, Annville, PA

Imagine that you have been asked to design a theme park based on a world biome. Which biome would you choose? What rides would you have? To design the park, produce an advertising brochure and model, students must become experts on the biome they selected as their theme.

- #73 Social Bookmarking Using Diigo  
Room: Crystal A  
Presenter: Michael F. Ruffini, Viola Supon, Bloomsburg University of Pennsylvania, Bloomsburg, PA  
Demonstration—Other—Other  
Social bookmarking in the science classrooms is a popular tool for locating and managing information on the Internet. This presentation focuses on the features and benefits of using Diigo, relative to student motivation, enthusiastic discussions, and concept attainment.
- #76 Genetics: Crazy Traits and Adaptation Survivor  
Room: Magnolia C  
Presenter: Lisa Bowman, CPO Science, Nashua, NH  
Hands-On—9-10—Biology  
Students learn new vocabulary when they study genetics such as: traits, alleles, and genotypes. How can you predict the traits offspring when you know the genetic makeup of the parents? These ideas will come alive when you create crazy creatures using a unique kit and study the resulting population.
- #91 Development of the Science and Outdoor Learning Center at IUP  
Room: Magnolia B  
Presenter: Dr. Meghan Twiest, Indiana University of PA, Indiana, PA  
Lecture—College—Pedagogy  
Join us to see how IUP has taken a small area of lawn and created an outdoor learning space where education majors can experience teaching environmental concepts to local school children. The area has blossomed into a wonderful teaching setting, that can be used by students, faculty, and the community.
- #85 Thorium Energy  
Room: Wild Rose A  
Presenter: Dr. Michael Cullin, Lock Haven University, Lock Haven, PA  
Lecture—11-12—Physics  
In this session, participants will learn about the potential of using the naturally radioactive and relatively abundant element Thorium as a replacement for Uranium in nuclear reactors Numerous resources for learning more about Thorium Energy will be provided.
- #95 Using science notebooks in a college laboratory to enhance understanding of NOS and POS and to improve critical thinking and writing skills  
Room: Wild Rose B  
Presenters: Alyssa Towarnicki, and Stephan Marvel, Lock Haven University, Lock Haven, PA  
Hands-On—Other—Other  
This hands-on session will explore using science notebooks in a college level inquiry into Biology course designed for Pre Service elementary and early childhood teachers. It is imperative for future teachers to have real life experiences and learn how to construct science notebooks and evaluate their contents.
- #96 The Effective Use of Technology in the Science Classroom  
Room: Magnolia D  
Rosella Reyes-Odrodsky, McGraw Hill Companies-School Education Group, Columbus, OH  
Demonstration—9-10—Other  
Technology is an ever increasing topic in education and many teachers feel they are behind where they should be in terms of using technology effectively in the classroom to actually enhance student education. This session will look at a variety of ways to use technology themselves to enhance their teaching and will

look at a variety of means to actively involve students in technology that will challenge their learning. The session will look at web use, presentation tools, data collection, blogging, classroom management software, and simulation and animation usage in very practical ways. They will also leave with a variety of websites and software resources for their use.

**Thursday, December 1, 2011 – 1:00-2:00 p.m.**

- #10 Removing the Mask of Inquiry  
Room: Empire B  
Presenter: Barbara Lorenzon, Delaware Valley Science Fairs, Inc., Philadelphia, PA  
Hands-On—Other—Inquiry  
Teachers attending this workshop will experience science through Inquiry discussion and hands on experiences to see and evaluate what true Inquiry in the classroom looks like. This workshop is designed as a vehicle for stimulating interest in Science, Technology, Engineering and Mathematics (STEM).
- #13 Developing Skepticism as an Essential Strategy for Science  
Room: Empire A  
Presenter: Julia Gooding, Hopewell High School, Aliquippa, PA, Bill Metz, Science Education Consultant  
Thinking critically in science is an essential process for crafting higher level questions and drawing reasonable conclusions. This workshop will demonstrate approaches and strategies used in advertising and their use for increasing the questioning skills and skepticism of school students.
- #40 Extra, Extra, Read All About It! Taking Biology from the News to the Classroom  
Room: Empire C  
Presenter: Dr. Stephen Nowicki, Duke University, Raleigh, NC  
Lecture—9-10—Biology  
Join Holt-McDougal Biology author, Dr. Steve Nowicki, in an interactive session as he presents a variety of strategies for bringing the real world into your classroom. Session will focus on using a full range of media resources to connect events, recent scientific discoveries, and fun quirks of nature with your biology classroom and the everyday lives of your students.
- #42 Metacognitive Strategies to Foster Deep Understanding  
Room: Empire D  
Presenter: Joyce Hubert-Theriot, Rustin High School, West Chester, PA  
Demonstration—9-10—Physical Science  
Students need to explain, demonstrate, and connect what they are thinking in science. Metacognitive frames used this year have been more productive simple tests or quizzes. Participants will experience metacognitive strategies and models applied in physical science and chemistry classes, (packets provided).
- #43 The Myth of the Super Moon  
Room: Magnolia A  
Presenter: Christopher Palma, Penn State University Astronomy, University Park, PA  
Hands-On—5-8—Other  
In this session we will investigate the Moon's appearance in Earth's sky using a kinesthetic demo and a software simulation. We will compare the results of these investigations with claims from March 2011 about the appearance of the "Super Moon".
- #70 Science Demonstrations: A Presentation by Millersville University Students  
Room: Crystal A  
Presenter: Nanette Dietrich, Millersville University of Pennsylvania, Millersville, PA  
Demonstration—9-10—Other

Come enjoy the show as Millersville University Students present their best science demonstrations. MU pre-service teachers will provide each attendee with complete instructions and student guides for each demonstration.

- #75 Subseafloor Research – How Science is Done There and How to Connect Your Students to It.  
Room: Wild Rose A  
Presenter: James Ringlein, North Museum of Natural History and Science, Lancaster, PA and Sharon Cooper, Deep Earth Academy  
Demonstration—Other—Other  
During the summer of 2011 I joined several educators aboard the research vessel Atlantis carrying the underwater ROV Jason. This session describes the science done on this mission to the Juan de Fuca ridge flank, and the resources available to teachers who want to connect with this cutting edge ocean research.
- #102 Power up with Electrochemical Cells  
Room: Magnolia D  
Presenters: John Allen, Linda Culpepper, Lab Aids, Ronkonkoma, NY  
Hands-On—9-10—Chemistry  
In this workshop we will explore how to teach core chemistry concepts using a new chemistry program, A Natural Approach to Chemistry. In this workshop you will have the opportunity to engage in inquiry-based laboratory investigations that teach the relationship between electrons, electricity, and chemistry. How do chemicals store energy? Each group will investigate the various parts of the lemon battery and the galvanic cell. After observing, we will discuss the related chemical reactions and electrochemistry. We will conclude with a brief discussion about how these ideas fit into our curriculum as a whole.
- #105 Engaging Discrepant Events and the 5E model for Learning  
Room: Magnolia B  
Presenters: Kathleen Blouch, Ashley Huttenstine, Colby Miller, Quynhnhu Nguyen, Elizabethtown College, Elizabethtown, PA  
Demonstration—9-10—Other  
A discrepant event is an event that surprises or astonishes the observer and can motivate the learner to want to know why it happened. Come and see how they can be used throughout the learning cycle.

**Thursday, December 1, 2011 – 1:00-2:30 p.m.**

- #68 Common Objects to Teach Physics Principles  
Room: Magnolia C  
Presenter: Fred Pidgeon, STANYS President, Rensselaer, NY  
Hands-On—9-12—other  
Through the use of playground balls (baseballs, softballs, etc.) and marbles we will construct and use these materials to understand potential and kinetic energy.

**Thursday, December 1, 2011 – 1:00-4:00 p.m.**

- #56 LIGHT, COLOR, AND SPECTROSCOPY FOR KIDS  
Room: Wild Rose B  
Presenter: John A. Varine and Hubert C. MacDonald, Spectroscopy Society of Pittsburgh, Pittsburgh, PA  
Demonstration—K-4—Physical Science  
Teachers will receive instructions and the necessary materials to perform a variety of fun-filled, intellectually-stimulating, exciting lecture/demonstrations in the fundamentals of light, color, and spectroscopy. Workshop aligned with PA Science Standards. Limited to 15 teachers.

**Thursday, December 1, 2011 – 2:15 p.m. -3:15 p.m.**

- #11 Inquiry Project Lesson Plan: Steps in Doing a Science Research Project  
Room: Empire B

- Presenter: Barbara Lorenzon and Dick Close Delaware Valley Science Fairs, Inc., Philadelphia, PA  
Hands-On—Other—Other  
Teachers will be taken through the process of using inquiry to design a lesson plan for students to complete a science research project. This workshop is designed as a vehicle for stimulating interest in Science, Technology, Engineering and Mathematics (STEM).
- #20 Photography without A Darkroom  
Room: Crystal A  
Presenter: Bruce S. Karpe, Swenson Arts & Technology High School, Philadelphia, PA  
Demonstration/Hands-On—K-12, College—Other  
Explore a historical method of alternative process photography – cyanotypes. The technique uses inexpensive, readily available materials. We will discuss chemicals, digital negatives, paper selection, exposure methods, development, and toning effects. A hands-on opportunity to try it out yourself.
- #26 REALLY EASY Middle School Science using RED Probeware Technology  
Room: Empire D  
Presenter: William Metz, Science Education Consultant  
Hands-On—5-8—Other  
Learn how to integrate the RED units into your classroom/laboratory. Hands-on activities include: – Cooling water activity using the temperature probe – Cartesian Diver activity using the gas sensor – Pressure in a Column Inquiry activity.
- #38 Earth and Space Science Web-Based Resources for Pennsylvania Educators  
Room: Magnolia A  
Presenter: Cecelia Merkel, Penn State, University Park, PA, Dr. Laura Guertin, Penn State Brandywine  
Demonstration—Other—Earth Science  
The Pennsylvania Earth Science Teachers Association (PAESTA) is working to advance excellence in Earth and Space Science education. This session will feature web-based resources available on the PAESTA website (<http://www.paesta.psu.edu>) to teach Earth and Space Science content, from elementary grades through college.
- #48 Collaboration with Researchers: Our “SAVE Science” Experience  
Room: Empire A  
Presenter: Uma Natarajan, Temple University, Philadelphia, PA  
Lecture—5-8—Inquiry  
This presentation will be about sharing our experience as a teacher community collaborating, designing and implementing inquiry-based lessons and activities in science. The experience evolves as part of our participation in a technology-based university research project called SAVE Science.
- #59 Using Models and Movements to Effectively Teach Mitosis  
Room: Empire C  
Presenter: Nicole Stants, Punxsutawney Area Middle School, Punxsutawney, PA  
Hands-On—9-10—Biology  
Mitosis is particularly difficult for students because it is a nearly invisible phenomenon. Participants will learn visual and kinesthetic strategies to make this concept concrete. This included creating mitosis models and learning a cheer about the steps of mitosis.
- #106 EE Resources for the K-4 Teacher  
Room: Magnolia B  
Presenter: Kathleen Blouch, Ed.D., Elizabethtown College Early Childhood Methods Students, Elizabethtown, PA  
Demonstration—K-4—Other

Come see how the Project Learning Tree for Early Childhood from PDE and the Growing up Wild Resource from the PA Game Commission were used to develop interdisciplinary units for Children for a Come into the Wild Event.

- #103 Exploring Wet Cell Batteries – 8<sup>th</sup> Grade Energy – PA  
Room: Magnolia D  
Presenters: John Allen, Linda Culpepper, Lab Aids and SEPUP, Ronkonkoma, NY  
Other—5-8—Physical Science  
Teacher experience a hands-on opportunity while designing a wet cell battery. You will produce electrical energy through the reaction of different metals. This is an activity you will be able to take home with you.
- #111 Reading to Learn the Content through the Environment and Ecology Standards:  
Room: Wild Rose A  
Presenter: Patti Vathis, PDE Environment and Ecology  
Audience K-4 teachers  
Join the Environmental Curriculum Advisor for the Department of Education and see firsthand how reading can play a key role in teaching environmental concepts like terrestrial and aquatic ecosystems and what lives there, Renewable Resources, etc. Be immersed for a short while in the world of nonfiction books and what they have to offer. Make the connection with the Common Core Standards and content. Receive a sample of materials.

**Thursday, December 1, 2011 – 3:30 p.m. -4:30 p.m.**

- #1 PSTA Board of Directors Meeting  
Room: Magnolia C  
Panel/Discussion – All Levels – Other  
The convention business meeting of the governing body, as are all PSTA Board Meetings, is open to any member wishing to attend. If you have considered running for a position but would like to see this body in action first, this may be a great opportunity. Brief reports will be presented by committee chairs as well as association business that needs to be addressed will be handled at this meeting.
- #14 Moving from Misconceptions to Conceptual Change  
Room: Empire A  
Presenter: Julia Gooding, Hopewell High School, Aliquippa, PA, Bill Metz, Science Education Consultant  
Hands-On—Other—Pedagogy  
Misconceptions are personal notions that we create in an effort to make meaning of our world. This workshop investigates how student misconceptions might occur and what strategies teachers might employ to help students move toward conceptual change.
- #18 Forensic Toxicology: An interdisciplinary approach to enhance understandings in biology  
Room: Empire C  
Presenter: Alexis A. Bizzaro, Franklin Towne Charter High School, Philadelphia, PA, Kristen Harris, Charles Carroll High School, Philadelphia, PA, Diane Welsch, Ridley High School, Folsom, PA  
Hands-On—11-12—Inquiry  
This professional development will present activities that will enable teachers to provide students with unique opportunities to explore forensic toxicology. Teachers will explore ways to incorporating case studies and the use of Process-Oriented Guide Inquiry Learning (POGIL) into their lessons.
- #34 Partnerships between Industry, Universities and Schools  
Room: Empire D  
Presenter: Kenneth Francis, Program Director – SAE International, Warrendale, PA  
Lecture—5-8—Physical Science

The presentation will describe an initiative between industry, universities and schools to promote engineering education. This collaboration has seen very positive impacts for students in the classrooms that participated. The opportunity to be involved in 2011-2012 will be presented.

- #45 Scavenger Hunts with GPS and Google Earth  
Room: Magnolia A  
Presenter: Laura Guertin, Penn State Brandywine  
Demonstration—9-10—STS  
GPS and Google Earth are tools that can be used with students to increase geographic and geospatial literacy. Learn how your students can engage with GPS technology outdoors or through Google Earth for interdisciplinary challenges.
- #51 New Tools for STEM Education from Carolina Curriculum  
Room: Empire B  
Presenter: Carolina Teaching Partner, Carolina Biological Supply Company, Burlington, NC  
Hands-On—Other—Other  
Explore new STEM resources including STC Secondary Building Blocks of Science kindergarten units, and the elementary math intervention program, Math Out of the Box. Participants will complete hands-on activities and leave with lessons to take back to their classrooms.
- #64 Team Building Challenges: Making it fun to work together!  
Room: Crystal A  
Presenter: Audrey Preston, South Mountain YMCA Camps, Wernersville, PA  
Hands-On—5-8—Inquiry  
Do you have students who are great thinkers, but struggle on group assignments? This workshop guides you through games and activities to build teamwork skills and motivation to work with others. (Even works with adults!) Be prepared to move and play!
- #80 Science Communication Skill Development Exercises  
Room: Wild Rose A  
Presenter: James Ringlein, North Museum of Natural History and Science, Lancaster, PA  
Demonstration—Other—Other  
The Portal to the Public project is an award winning program designed to improve research scientists' informal communication skills. We have found that the programs exercises are actually beneficial for all types of science communicators. Come to learn about the project and experience one of these exercises!
- #97 Temple University's TUTEACH...Not Your Ordinary BS  
Room: Magnolia D  
Presenter: Marlene Hilkowitz, Temple University, Philadelphia, PA  
Lecture—11-12—Other  
Learn how TUTEACH students graduate with a bachelor of science in their chosen math or science field as well as the academic and experiential qualifications necessary to earn a middle or high school teaching certificate. Find out how your students can benefit.

# Friday Sessions:

## Friday, December 2, 2011 – 9:00-10:00 a.m.

- #5 Scale the Universe  
Room: Empire A  
Hand-on – 9-10 – Earth Science  
Presenter: Christine Royce  
This cross-curricular activity will give participants a method by which to demonstrate to students orders of magnitude and how science deals with extremely large and extremely small numbers.
- #8 Previewing Science Vocabulary  
Room: Empire B  
Presenter: Kelly Fringer, Dauphin County Technical School, Harrisburg, PA  
Hands-On—9-10—Chemistry  
Research states students need to write, read, and communicate with peers to improve literacy skills. This interactive workshop shows teachers how to improve literacy through: word splash, list-sort-group, and work attack. Teachers should bring vocabulary words for an upcoming unit.
- #24 REALLY EASY Life Science using RED Probeware Technology  
Room: Empire D  
Presenter: Patricia McGinnis, Arcola Intermediate School, Eaglesville, PA  
Panel/Discussion—5-8—Biology  
Learn how to integrate the RED units into your classroom/laboratory. Hands-on activities include: – Phototaxis in animal behavior using a light sensor – Muscle fatigue using a gas sensor.
- #46 What Can Today’s Teachers Learn from Sir Isaac Newton’s Education?  
Room: Magnolia A  
Presenter: Helen E. Martin, NBCT, Consultant  
Lecture—Other—Other  
Newton, one of the foremost scientists of all times, had a classical education, supplemental with books, and modeling activities. This Keynote presentation with over 100 original photographs prepares the teacher for the next Newton who be in his/her classroom.
- #65 Reebop Genetics  
Room: Empire C  
Presenter: Kent Brusstar, Master of Science Ed. Program, Lebanon Valley College, Annville, PA  
Hands-On—Other—Biology  
Reebops are imaginary creatures made of marshmallows and a few household items. Though imaginary, their genes work like real genes. A new baby Reebop is about to be born! Students show their understanding of genetics principals to make a unique Reebop with “inherited” traits. All materials provided.
- #67 Biomedical Research in the Classroom  
Room: Magnolia B  
Presenter: Paula Clifford, Camp Hill, PA  
Lecture—Other—Other  
Biomedical research, specifically the animals used in research, is an often unknown or misunderstood subject in the classroom. This session will provide an interactive approach to learning about biomedical research and how animals are used in advance medicine and science. Participants will receive the Rx for Science Literacy’s curriculum manual. This manual consists of lessons that teach various aspects of biomedical research for K-12 classrooms. The presentation will incorporate some to these lessons so

participants can feel the student experience facilitating implementation of information learned back to the classroom.

- #77 Light and optics: A series of EnLIGHTening Experiences!  
Room: Magnolia C  
Presenter: Lisa Bowman, CPO Science, Nashua, NH  
Hands-On—11-12—Physics  
Experience Optics with Light and Color kit, LED flashlights, lasers, filters, and more. Try color mixing, related it to human vision, and see different spectra of light with diffraction glasses. See the phenomenon of internal reflection by shining a laser through a prism and tracing incident and refracted rays.
- #89 Create Inquiry-based Science Lessons the Easy Way-A Hands-on Workshop  
Room: Magnolia D  
Presenter: Dr. Holly Travis, Indiana University of PA, Indiana, PA  
Hands-On—K-4—Inquiry  
This workshop will assist teachers at any grade level in taking activities and turning them into inquiry-based lessons on a variety of topics. Lessons will then be shared and discussed to assist participants in keeping lessons creative, interesting, and standards-based.

**Friday, December 2, 2011 – 9:00 -11:00 a.m.**

- #61 MAKE-IT AND TAKE-IT: The Sex Organs of Flowers Up-Close and Intimate  
Room: Wild Rose B  
Presenter: Mitch Batoff, Professor Emeritus, New Jersey City University, Jersey City, NJ  
Hands-On—Other—Other  
In this NEW hands-on workshop you will gain information and insights into the commonplace. Discover a fascinating world of beauty, awe, and wonder that perhaps will provide some new and stimulating experiences that can enhance your teaching. You need to bring a digital camera and, if possible, the instruction booklet. Limited to first 20 people. Please bring a digital camera and instruction booklet if you have them available.

**Friday, December 2, 2011 – 9:00a.m. -12:00 p.m.**

- #57 Using Journal of Chemical Education Software in the Classroom  
Room: Wild Rose A  
Presenter: Hubert C. MacDonald, Society for Analytical Chemists of Pittsburgh, Pittsburgh, PA  
Demonstration—11-12—Chemistry  
Participants will have the opportunity to work with and receive two JCP: Software CD's, "General Chemistry and Advanced Chemistry," a subscription to JCP web-based software, plus Vernier's graphical analysis. Session limited to 15 participants and is aligned with PA Science & Technology Standards.

**Friday, December 2, 2011 – 10:15-11:15 a.m.**

- #9 Dimensional Analysis: Interactive Hands on Method  
Room: Empire B  
Presenter: Kelly Fringer, Dauphin County Technical School, Harrisburg, PA  
Hands-On—9-10—Chemistry  
This workshop will show you an interactive hands on approach to teach dimensional analysis to your chemistry students. You will leave with all the resources used within this presentation.
- #17 PA Keystone Exams: An Update  
Room: Empire A  
Presenter: Drue Feilmeier, Lancaster-Lebanon IU 13, Lancaster, PA  
Panel/Discussion—Other—Other

Participants in this session will discuss the most up-to-date information available on the PA Keystone Exams including the Project Based Assessment OPTION for students who fail to demonstrate proficiency after two attempts.

- #22 TI-NSpire Technology for the Science Classroom  
Room: Empire D  
Presenter: Dina Dormer, Strath Haven High School, Wallington, PA  
Hands-On—11-12—Chemistry  
Texas Instruments NSpire technology will be presented in a hands-on, user friendly format. The applications of this technology are extraordinary and complement the use of probes and other data collection methods very well.
- #35 Perils of Pollution  
Room: Magnolia A  
Presenter: Donna Kowalczyk, University of Pittsburgh at Johnstown, Johnstown, PA  
Hands-On—K-4—Environmental  
Explore the perils of a polluted environment through reading and storytelling. Designed for the K-4 classroom teacher, this presentation features an integrated hands-on activity designed to build awareness of environmental problems and stimulate thinking. Participants will be provided with new ideas for lessons about pollution and environmental problems.
- #69 Chemistry and The Atom  
Room: Magnolia B  
Presenter: Lisa Bowman, CPO Science, Nashua, NH  
Hands-On—9-10—Chemistry  
Our understanding of matter is so abstract that students have a hard time making sense of these fascinating concepts. In this workshop you will experience innovative games and activities that gives students with different learning styles opportunities to explore and grasp atomic structure and periodic table.
- #79 Stream Quality and the Northern Dusky Salamander  
Room: Magnolia C  
Presenter: Robert Michalow, Saint Vincent College, Latrobe, PA  
Lecture—11-12—Environmental  
This presentation will discuss the results of a study that determines which stream side habitat characteristics impact the northern dusky salamander density. Furthermore, how do the results of this study impact wildlife management practices.
- #82 Stem Cell Differentiation  
Room: Crystal A  
Presenter: Nathan Alfred, Parkersburg South High School, Parkersburg, WV  
Hands-On—9-10—Biology  
SGI Biology is the new high school biology course from SEPUP! Developed with NSF support, the course has five units – sustainability, ecology, cell biology, genetics, and evolution – and provides full support for literacy, assessment, and technology. In this workshop from the cell biology unit, participants use a card sort will find out how stem cells produce specialized cells and the potential for using stem cells to cure diseases. Take home an activity to use in class next week.
- #109 Got Advice? A Panel Discussion Led by Pre-service Science Teachers  
Room: Empire C  
Presenters: Karen Mahoney, Marissa Nagel, Leah Strong, Benjamin Carlucci, Joe Thesis, Eric Haidinger, Eric Hofmann, Joseph Shane, Shippensburg University, Shippensburg, PA  
Panel/Discussion—Other—Other

Please join us for a discussion where veteran science teachers have the opportunity to share their experiences and advice with pre-service teachers. Topics of discussion will include student teaching, the job search, advice for the first job, setting up an effective classroom, standards, and assessment. What do you know now that you wish you knew then?

- #92 Using Discrepant Events as a stepping stone for Inquiry-based Learning  
Room: Magnolia D  
Presenter: Robert C. Snyder, Slippery Rock University, Slippery Rock, PA  
Demonstration—K-4—Inquiry  
The Slippery Rock University NSTA Student Chapter returns with a new set of demonstrations that will get elementary students immersed in science process and inquiry skills. A handout describing the demos along with the science background will be provided.

**Friday, December 2, 2011 – 11:30 a.m. 12:30 p.m.**

- #25 Chemistry In-the-Bag Inquiry Activities Workshop  
Room: Empire D  
Presenter: Patricia McGinnis, Arcola Intermediate School, Eaglesville, PA  
Hands-On—9-10—Chemistry  
Learn how to easily incorporate inquiry activities into your classrooms using ScholAR's In-the-Bag Inquiry Activity series. These easy-to-perform demonstrations are designed to engage your students and incorporate guided inquiry exercises.
- #36 POGIL, POGIL, POGIL! I've heard of it but how do you IMPLEMENT it in the classroom??  
Room: Magnolia A  
Presenter: Leigh Foy, York Suburban High School, York, PA, Laura Trout  
Hands-On—9-10—Other  
POGIL activities – Process Oriented Guided Inquiry Learning – are proven effective classroom “tools” for incorporating cooperative learning strategies coupled with learning cycle aligned activities to guide students through content in biology and chemistry. Many teachers are already utilizing the HSPI (High School POGIL Initiative) activities or writing their own. Come hear and experience some great IMPLEMENTATION tips from the chief HSPI editor Laura Trout and associate editor Leigh Foy, What does POGIL look like in the classroom? How can you effectively guide your students to POGIL success?
- #41 EcoExpress: Fostering a New Generation of Environmental Stewards  
Room: Empire B  
Presenter: Brie Knight, GreenTreks Network, Philadelphia, PA  
Lecture—5-8—Environmental  
EcoExpress.org is an Online Resource Center for Educators that uses short, age appropriate, Pennsylvania based educational video stories and supplemental curriculum materials all tied to the PA Standards and connects students to local organizations to aid with service learning projects.
- #52 Learning to Read, Reading to Learn: Increasing Test Scores through Literacy, Notebooks, and the Power of Inquiry  
Room: Empire A  
Presenter: Carolina Teaching Partner, Carolina Biological Supply Company, Burlington, NC  
Hands-On—K-4—Other  
Increase test scores and student engagement through notebooking! Using materials from the STC Program and Carolina Curriculum, this session will explore how science notebooking can develop and improve math, social studies, and language arts skills. Free classroom materials provided.

- #53 Practical Applications of Scanning Electron Microscopy in a Public School  
Room: Empire C  
Presenter: Lurea Doody, West Greene High School, Waynesburg, PA  
Lecture—Other—Inquiry  
Catalytic synthesis of cyanoacrylate nanofibers is just one of the research projects students at a small rural Pennsylvania high school have working on this year. The types of projects and experiments that have been done are as dynamic and diverse as the personalities of the students. Other activities centered around the SEM lab include: A local Ugly Buga competition, Pennsylvania Junior Academy of Science projects, and demonstrations of middle school science students.
- #74 Biodiversity of PA: A curriculum supplement  
Room: Magnolia B  
Presenter: Theresa Alberici, Pennsylvania Game Commission, Harrisburg, PA  
Hands-On—5-8—Environmental  
Pennsylvania’s Biodiversity is vital to the health of people, wildlife and the environment. Through hands-on activities, participants will explore biodiversity at a genetic, species and ecosystem level, address critical concepts and standards and receive the Pennsylvania biodiversity guide.
- #78 CPO SmartTrack with Velocity Sensor and Energy Car  
Room: Magnolia C  
Presenter: Lisa Bowman, CPO Science, Nashua, NH  
Hands-On—11-12—Physics  
Our new velocity sensor uses sound waves to measure and display position, velocity, and acceleration data of moving objects. We investigate how the Energy Cars moves on our SmartTrack to explore Newton’s Laws, kinematics, friction, and the law of conservation of energy in this inquiry-based learning activity.
- #83 Photosynthesis and Respiration Shuffle  
Room: Crystal A  
Presenter: Nathan Alfred, Parkersburg South High School, Parkersburg, WV  
SGI Biology is the new high school biology course from SEPUP! Developed with NSF support for literacy, assessment, and technology. In this workshop from the ecology unit, participants will use a sort activity to examine photosynthesis and respiration at the level of the cell and organism. Take home and activity to use in class next week!
- #107 Informational Text: Book Selection that Support Science Centered Language  
Room: Magnolia D  
Presenters: Kathleen Blouch, Ed.D., Elizabethtown College, Helen Weber, Delta Science Consultant, Elizabethtown, PA  
Hands-On—Other—Other  
This session will model how informational text can be use to support your inquiry and reinforce investigations as well as develop important literacy skills.
- #101 Student Engagement in Science Through Service Learning  
Room: Wild Rose B  
Presenters: Wendy K. Martin, Dr. Kathleen Blouch, Nancy Valkenburg, Elizabethtown College, Elizabethtown, PA  
Panel/Discussion—Other—Other  
Interested in the benefits of Service Learning in Science? Come and discuss how engaging students can benefit your program. Elizabethtown College’s Center for Community and Civic Engagement, Science in Motion and Education Department will share their experiences and successes.

**Friday, December 2, 2011 – 12:45-1:45 p.m.**

- #2 PSTA General Membership Meeting  
Room: Magnolia C  
Panel/ Discussion – All Levels – Other  
Presenter: Keith Butler, PSTA President, Whitehall, PA  
As designated in the PSTA Constitution, each year one General Membership Meeting is to be held and presided over by the President. The purpose of this meeting is to gather input from the membership at large, summarize activities of the organization for the year, and act on any business requiring action of the membership. Your attendance and input are encouraged.
- #12 Separation of Church and State in the Public Schools  
Room: Empire B  
Presenter: Jim Wise, Retired from General McLane, Erie, PA  
Lecture—Other—Biology  
This program provides the educator with current information regarding the separation of church and state as it applies to the school setting. Participants are able to apply their knowledge to classroom situations at all levels of the school environment.
- #15 Chef’s Don’t Use Cookbooks, Why Should Students?  
Room: Empire A  
Presenter: Julia Gooding, Hopewell High School, Aliquippa, PA, Bill Metz, Science Education Consultant  
Hands-On—5-8—Inquiry  
In this interactive workshop attendees will assess the current levels of inquiry in common perfunctory cookbook lessons then utilize uncomplicated teacher strategies that could be applied to convert cognitively low-level laboratory activities to minds-on, student-centered inquiry investigations.
- #23 Bird Olympics  
Room: Empire C  
Presenter: Kristin Rodkey, Juniata College, PA  
Panel/Discussion—5-8—Other  
Pre-student teachers develop a field trip based on birds for an 8<sup>th</sup> grade class, held at the Juniata College Field Station. The pre-student teachers broke up into five groups and each group planned an activity on their content area.
- #50 Comparative Vertebrate Anatomy with Carolina’s Perfect Solution Specimens  
Room: Empire D  
Presenter: Carolina Teaching Partner, Carolina Biological Supply Company, Burlington, NC  
Hands-On—9-10—Biology  
Hands-on, inquiry-based cooperative learning has been proven the most effective method to teach comparative anatomy. Participants use this scientific inquiry to observe, describe, and discover characteristics of vertebrates. Experience Carolina’s Perfect Solution specimens, which offer a safe alternative to formaldehyde.
- #63 Robotics Competitions – Getting Started  
Room: Magnolia A  
Presenter: Patrick Young, Harrisburg University of Science and Technology, Harrisburg, PA  
Hands-On—Other—Other  
Discover the various robotics competitions in Pennsylvania and learn how to start a low-budget robotics team at your middle or high school. Participants will be able to examine the hardware and software available from several different companies.

- #88 No Student Left Indoors: Creating a Field Guide to Your Schoolyard  
 Room: Crystal A  
 Presenter: Jane Kirkland, Author, Take A Walk Books, Lionville, PA  
 Lecture—Other—Earth Science  
 If you have a schoolyard you have an outdoor classroom! Get a jump start on this multidisciplinary, project-, standards-, and place-based study based on Jane Kirkland’s book of the same name.
- #108 Science Explores Club: After-School STEM Program Design and Invent  
 Room: Magnolia B  
 Presenters: Kathleen Blouch, Ed.D., Jess Swank, Elizabethtown College, Alicia Klepper, Elizabethtown College NSTA Chapter President  
 Demonstration—Other—Other  
 Elizabethtown College NSTA Student Chapter partners with the E-town Library to engage students in STEM learning experiences. The Design and Invent Curriculum will be demonstrated and explained.
- #104 “Breeding Critters” from SEPUP 7<sup>th</sup> Grade Genetics PA  
 Room: Wild Rose B  
 Presenters: John Allen, Linda Culpepper, Lab Aids, Ronkonkoma, NY  
 Hands-On—5-8—Life Science  
 Make the study of genetics more meaningful for students. Join us for an activity sequence that lays framework for dominant/recessive as well as other patterns of inheritance. Pedigrees are introduced as another way to study the behavior of certain genes in humans. In the succeeding activities, you will use what you know to advise Joe about whether to be tested for Marfana’s Syndrome.

**Friday, December 2, 2011 – 2:00-3:00 p.m.**

- #28 Raising the Bar on K-3 Guided Inquiry  
 Room: Empire D  
 Presenter: Bill Metz, Science Education Consultant  
 Hands-On—K-4—Inquiry  
 This interactive K-3 workshop will examine ways to enhance the inquiry level of selected FOSS lessons through student centered applications. These modifications turn more of the responsibility for learning to the shoulders of the students. Program sponsored by Delta Education.
- #33 Social Media Extends Laboratory Inquiry Outside of Class  
 Room: Empire C  
 Presenter: James Endres Howell, The Pennsylvania State University – Department of Veterinary and Biomedical Sciences, University Park, PA  
 Lecture—11-12—Biology  
 The eTOXIC (Environmental Toxicology Inquiry Curriculum) project exploits environmental toxicology to introduce students to the practice of research. Social media extends and enhances active classroom and laboratory learning, continuing deliberative thinking and collaboration outside of class.
- #81 The Bird Olympics: Student teachers create a field trip experience  
 Room: Magnolia C  
 Presenter: Kathleen Jones, Ph.D., Kim Amrod, Sara Garside, Danielle Partsch, Juniata College, Huntingdon, PA  
 Panel/Discussion—5-8—Environmental  
 Join a group of Juniata College pre-service teachers as they share their experiences developing and executing a field trip for secondary students to teach about PA songbirds. From start to finish, they designed the concept, developed a video to show in a pre-trip visit and then created hands-on, mind engaging activities for the Bird Olympics.

#98 Travel Abroad with the Toyota International Teacher Program  
Room: Empire A  
Presenter: Pamela Ulicny, Tri-Valley Jr/Sr High School, Hegins, PA  
Lecture—9-10—Other  
The Toyota International Teacher Program is a fully funded international professional development opportunity for secondary school teachers to advance environmental stewardship and global connectedness. Pam Ulicny will share her experience from the summer's TIPP trip to South Africa and provide information about how others could join future expeditions.

#93 From Gene to Protein: What Does It Mean?  
Room: Magnolia B  
Presenter: Cheryl Hollinger, Central York High School, York, PA  
Hands-On—11-12—Biology  
Concepts in molecular biology are often difficult concepts for students to grasp. Participants will receive information and resources for use in teaching molecular biology concepts, engage in classroom activities that they can use or modify in their own classroom, and explore available online tools.



## ***List of Exhibitors***

The Pennsylvania Science Teachers Association wishes to extend its sincere appreciation to the following for their support and sponsorship of the PSTA Convention.

AMSCO School Publications, Inc.  
Anatomy in Clay Learning Systems  
Animal Welfare Institute  
Bedford, Freeman, & Worth (BFW) Publishers and W.H. Freeman  
Bob's Critters  
Building a Presence  
Carolina Biological Supply  
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Keystone Teachers Association  
KidWind Project, Inc.  
Lab Aids, Inc.  
Lebanon Valley College  
Lock Haven University Graduate Admissions  
Lock Haven University Nanoscience Program  
McGraw-Hill School Education Group  
National Oceanic and Atmospheric Administration  
National Museum of Crime and Punishment  
Organ and Tissue Donation Awareness Education  
PA Fish and Boat Commission  
PASCO Scientific  
PD/Office of Environment and Ecology  
Pearson  
Pennsylvania Archaeological Council  
Pennsylvania Envirothon  
Pennsylvania Society for Biomedical Research

Perfection Learning Corporation  
Pitsco Education  
Pittsburgh Regional Center for Science Teachers  
Pocono Environmental Education Center  
Sargent Welch – Science Kit – Wards Natural Science  
Science Companion  
Society for Analytical Chemists of Pittsburgh/Spectroscopy Society of Pittsburgh  
South Mountain YMCA  
Stillwater Publishing  
Technology & Engineering Education Association of Pennsylvania  
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Katy Wolfrom.....	Northwestern Region
Vacant.....	Western Region
Andrea Redinger.....	Southwestern Region
Cathy Stephenson.....	Central Western Region
Vacant.....	Central Region
Cherylann Hollinger.....	Southern Region
Debbie Johnson.....	Northeastern Region
William Ayers.....	Eastern Region
Sr. John Ann Proach.....	Mideastern Region
Patty McGinnis.....	Southeastern Region
Michael Cullin.....	North Central Region

### College Representatives

Todd Hoover.....	Eastern Region
Donald Kline.....	Central Region
Matthew Maurer.....	Western Region

### Affiliate Representatives

Patti Vathis.....	PDE
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### Appointed Positions

Ruth Ruud.....	Nominations
Paula Clifford.....	Business Representative
Keith Butler.....	Membership Chair
Christine Anne Royce.....	Editor
Patti Vathis.....	Presidential Awards
Patti Maurer.....	Website
Joseph Shane.....	Legislative

## ***Past Presidents***

1951-1953	Orin Kaltriter	1984	Rosemary T. Barbacci
1954	Charles F. Beck	1985	Donna Oliver
1955-1956	Herbert Reichard	1986	Dennis Showers
1957	C. Richard Snyder	1987	Robert Wyble
1958-1959	Charles Rutsky	1988	Bruce Smith
1960	Charles Bickle	1989	Thomas Arnold
1961	John Heilman	1990	Anthony Lazzaro
1962-1963	Mary Gilmore	1991	David A. Wiley
1964	G. William Donovan	1992	Walter Placek
1965	Charles F. Hensley	1993	Linda Whren
1966	David Ulmer	1994	Edward Zielinski
1967	Dorothy Alfke	1995	Judi Hechtman
1968	Sr. Mary William	1996	Donald Kline
1969	Joseph M. Joseph	1997	Carl Brehmer/Judi Hechtman
1970	Hubert Snyder	1998	Judi Hechtman
1971	Donald Kramer	1999	Donald Pratt
1972	Stephen Rituper, Jr.	2000	Donald Kline
1973	Clyde Dry	2001	David Bauman
1974	Harrie Caldwell	2002	Christine Anne Royce
1975	Stephen B. Lucas	2003	William Ayers
1976	H. Seymour Fowler	2004	Ruth Ruud
1977	Roy Allison	2005	Catherine Stephenson
1978	Wayne Mikach	2006	Christine Anne Royce
1979	John Stankiewicz	2007	William Ayers
1980	Mary Sweeney	2008	Ruth Ruud
1981	William McIlwaine	2009	Robert Penrose
1982	Barry Barnhart	2010	Carli Yeager Hall
1983	Kenneth Mechling		

## ***Awardees***

### ***PSTA Fellows Award Dr. G. Kip Bollinger***

Dr. G. Kip Bollinger has been an integral part of Science Education in the state of Pennsylvania for many years. He started his career as a classroom teacher then he became an advocate of science education as the Science Supervisor for the Pennsylvania Department of Education where he lead science teachers through curriculum development, standards writing and assessment implementation. He served on the PSTA Board of Directors as the PDE advisor for over sixteen years and worked with PSTA on many annual conferences. Dr. Bollinger was the co-sponsor with PSTA in developing Building a Presence For Science in Pennsylvania and now dedicates much of his time and energy in continuing the Science Matters network for science teachers across Pennsylvania. He continues to enhance the level of science education for students today as a consultant with intermediate units, science publishing companies, universities and school districts.

As one of his letters of support stated, “Dr. Bollinger’s interactions with teachers and administrators demonstrate his deep commitment to high-quality science education and his profound respect for the work of our teachers. His thoughtful nature makes him a highly-respected member of the science education community in Pennsylvania.” Another letter stated “ Dr. Bollinger is recognized across the state by his peers, teachers and administrators as an exemplary individual who inspires educators to reach for the highest level of proficiency they can so that they can impact student learning to distinguished level.” It is with great honor that PSTA awards Dr. Kip Bollinger the PSTA Honor Roll of Fellows Award.

## ***William B. McIlwaine Award for Science Teaching Andrew R. Blass***

Andrew Blass is a recent Summa Cum Laude graduate from Shippensburg University with a degree in Biology with Secondary Education Certification. Andrew student taught at the Palmyra Area Middle School and Milton Hershey School during the Fall 2010 semester. Andrew is the founding President of the Exercise Science Club at Shippensburg University. He has been honored with many awards including the Dr. Elaine Anderson Science Education Majors Award, Tri-Beta National Biology Honor Society, and Who's Who among students in American Universities and Colleges. Andrew is currently teaching at the Reading Intermediate High School teaching Integrated Science and Biology on the school's at-risk transitional team.

Andrew's nominator writes, "Andrew is a new teacher of promise that is destined for a career of success and contribution. He sees science in every aspect of life. He has the dedication, skills, courage, self-confidence and desire to be an agent of change and I am confident that he will continue to make the world a better place through his teaching." Andrew states "It is my greatest goal to have some impact on helping students make wise and healthy decisions that will benefit their future and help them realize their dreams." PSTA wishes Andrew all the best in making his dreams of impacting the lives of students a reality.

## ***Pennsylvania Junior Academy of Science Winners***

Pennsylvania Science Teachers Association awards one \$50 US Savings Bond to the PJAS winner in each of the following areas: Chemistry, Physics, Biology, and Computers/Mathematics. Certificates were presented at the **Annual State Meeting of the Pennsylvania Junior Academy of Science**. Winning is based upon the scores the students earn during the oral presentation and defense of their research projects at the state meeting. In order to present at the state meeting, the participants previously presented their research projects to judges at a regional meeting in their home area. Each participant is judged against established and proven PJAS criteria. The awards are based on how well they met the criteria. Students may only use 2-dimensional illustrations (i.e. slides, transparencies, poster displays, etc.) to explain their projects. Their explanations include how they: chose their project, completed their research, analyzed the data, arrived at their conclusions, and explained possible future experimentation.

### **Microbiology – Sequoia Leuba**

Fox Chapel Area High School – PJAS Region 7

### **Biochemistry – Ritu Saxena**

Methactorn High School – PJAS Region 1B

### **Physics – Veronica Ebert**

Calisle High School – PJAS Region 4

### **Physics – Cathy Wang**

McDowell High School – PJAS Region 10

### **Mathematics – Ami Patel**

Crestwood High School - PJAS Region 2

## ***Past Fellows Recipients***

The Fellows Award is designed to recognize individuals who, through active leadership and scholarly activities, have made extraordinary contributions to the advancement of education in the sciences and science teaching. This individual must have served as an officer or director of PSTA and have been a sustaining member within the organization. The Fellows Award is the highest honor the organization can bestow upon an individual.

Recipients of the Fellows Award include:

1985	William McIlwaine
1985	Kenneth Mechling
1986	Roy Allison
1986	H. Seymour Fowler
1988	Donna Oliver
1990	Wayne Mikach
1990	Barry Barnhart
1991	Clyde Dry
1991	Bruce Smith
1993	David A. Wiley
1994	Donald Keys
1996	Laura Yoder
2000	Judith Hechtman
2000	Anthony Lazzaro
2001	Mary E. Sweeney
2003	Donald E. Kline
2005	Christine Anne Royce
2006	William Ayers
2008	Ruth Ruud

### ***Past McIlwaine Award Recipients***

The William B. McIlwaine Science Teaching Award has been established to promote and recognize the outstanding teaching of science in grades K-12 by full time undergraduate and graduate students and full time teachers who have completed no more than two years of teaching.

2000	Mary Maxwell
2001	Donna Barrett
2003	Diane Womer
2003	Steve Kochis
2004	Amanda Potteiger
2004	Andrea Ferraco
2005	Brian Chubb
2007	Jennifer Long
2007	Jessica Saienni
2010	Kaja Spaseff Manuel

### ***Past Science Leadership Award Recipients***

The Leadership in Science Education Award, which was established in 1995, is presented by the Pennsylvania Science Teachers Association to an individual not actively involved in classroom teaching or an organization, which over a period of at least five years, has made outstanding contributions in support of PSTA and individual members of PSTA.

1995	Daryl Flynn & Silver Burdett and Ginn
1999	Randy Stom & Delta Education
2002	Reeny Davison
2002	Jane Conrad
2004	Dr. G. Kip Bollinger
2005	Spectroscopy Society of Pittsburgh (SSP) Society for Analytical Chemists of Pittsburgh (SACP) Dr. John A. Varine, President
2006	PA Society for Biomedical Research
2007	Delta Education
2008	Dr. Kathleen Blouch
2009	Representative David J. Steil
2010	Charles Howard
2010	Dr. Patricia Vathis

***Corporate Sponsorship  
PSTA wishes to thank the following sponsors  
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***Spectroscopy Society of Pittsburgh/  
Society for Analytical Chemists of Pittsburgh***

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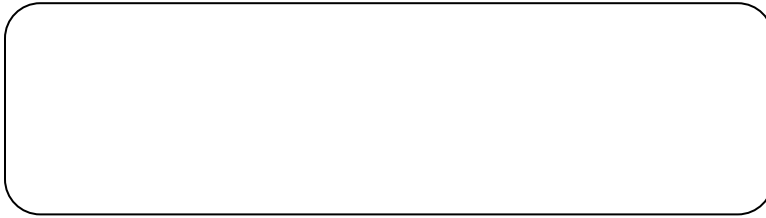
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## ***Verification of Attendance***

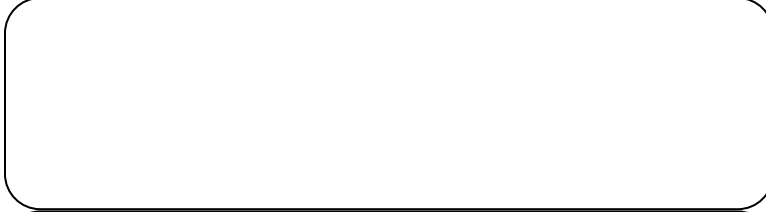
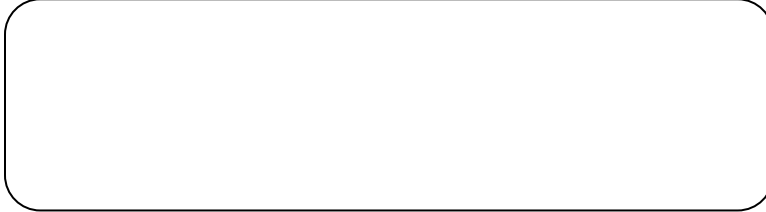
It is the individual's responsibility to obtain a label from the appropriate person at the end of a session. Attendees entering a session after the door's close (five minutes into a session) or leaving before the end of a session will not be given credit for attendance at that session. Each label indicates the title of the session and number of hours to be credited. It is the responsibility of the attendee to submit this form to their local district for it to count towards Act 48 hours. Labels will only be available at the end of the session and will be destroyed following that session. Lost forms cannot be reconstructed, therefore, please keep this form in a safe place.

### **Wednesday – November 30, 2011**

### **Thursday – December 1, 2011**



**Friday - December 2, 2011**



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