



Connecting  
Science Past with  
Science Future

Friday, March 19

2

NSTA 2010 National Conference on Science Education

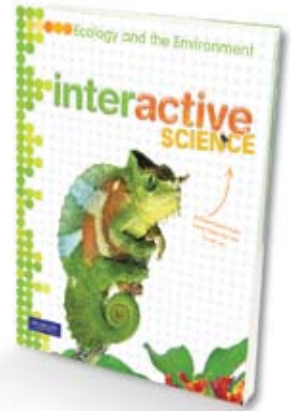
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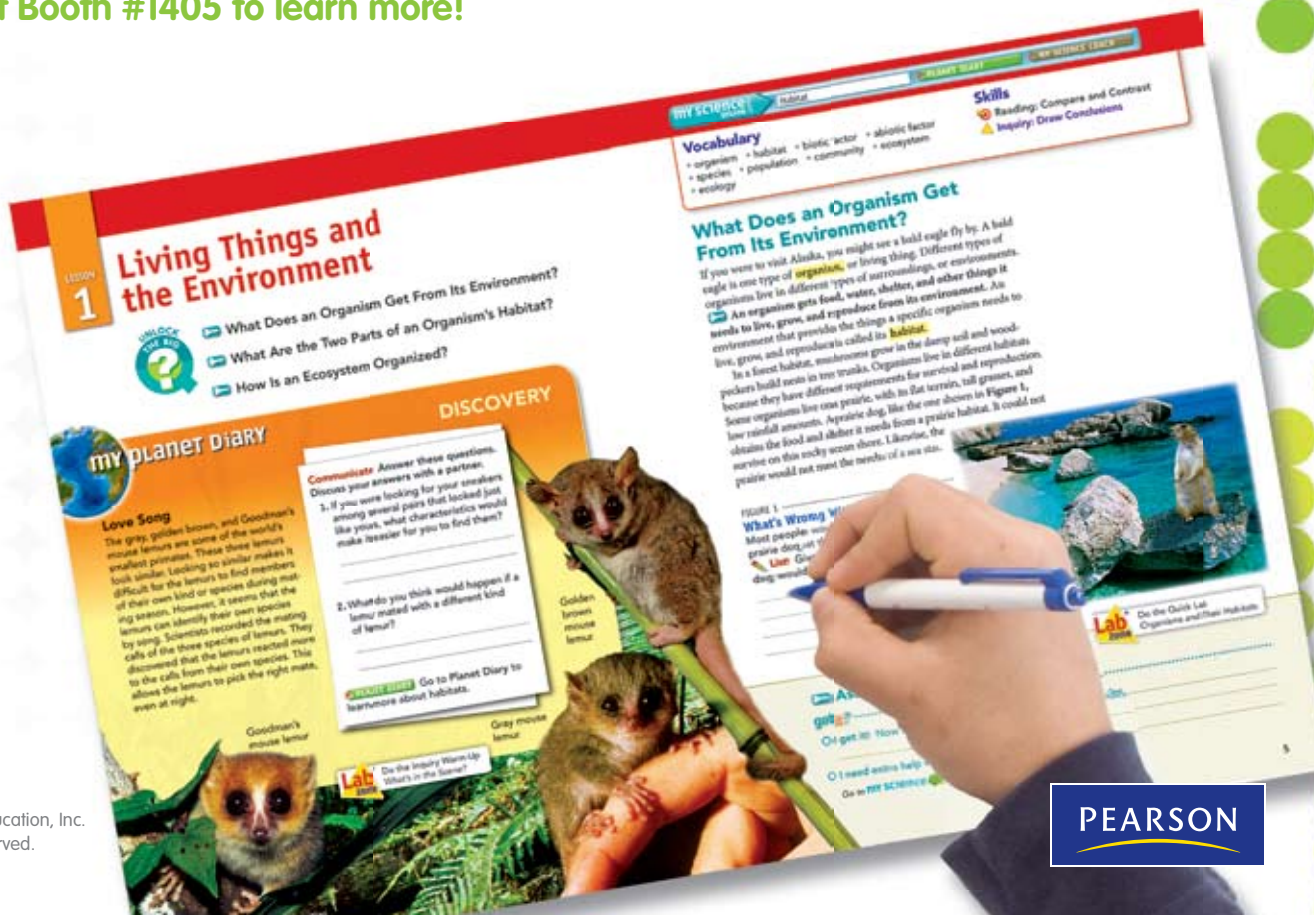
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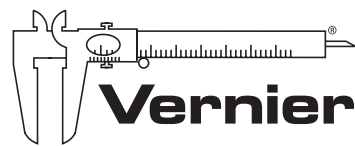
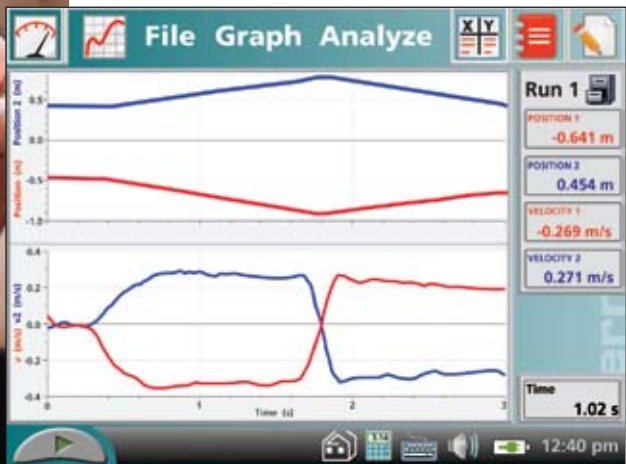


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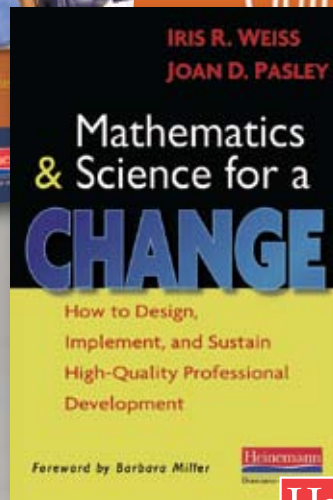
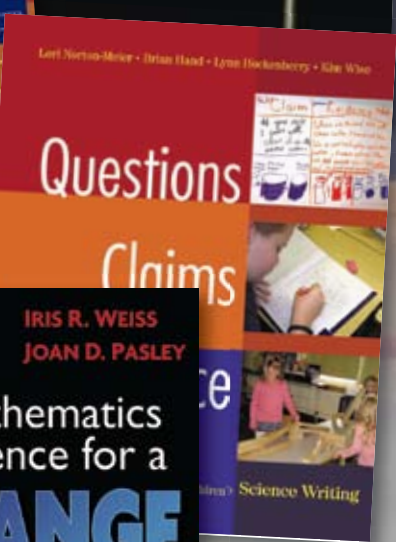
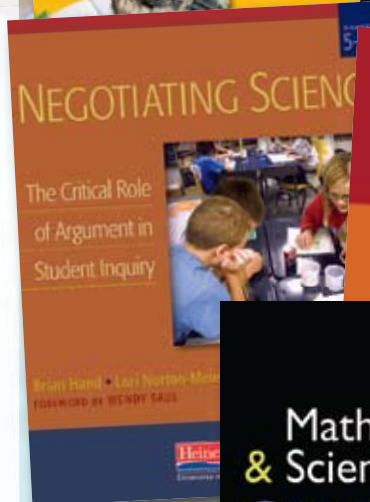
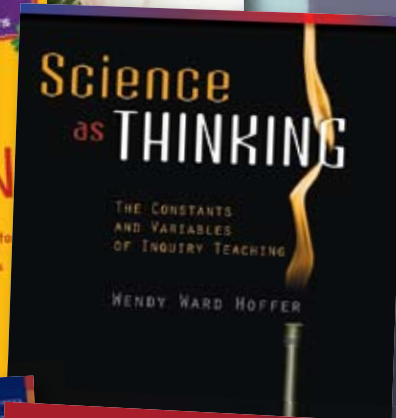
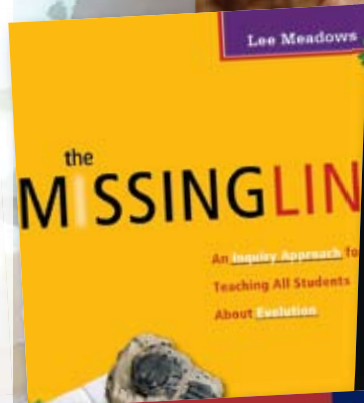
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# NSTA 58th National Conference on Science Education

Philadelphia, Pennsylvania • March 18–21, 2010

## Volume 2 Friday, March 20

Conference Highlights (Friday) . . . . .	5
Conference Strands . . . . .	6
Informal Science Day . . . . .	8
<i>Science Matters</i> Activities . . . . .	8
NSTA Press Sessions . . . . .	10
NSTA Avenue Sessions . . . . .	10
<i>Friday Daily Program</i> . . . . .	15
Meetings and Social Functions (Friday) . . . . .	133
Index of Exhibitor Workshops (Friday) . . . . .	135
Schedule At A Glance (Friday) . . . . .	141
Index of Participants (Friday) . . . . .	158
Index of Advertisers . . . . .	168

### Cover Photo

Workshop participants investigate water at The Franklin Institute.

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# Fisher Science Education

**Stop by the Fisher Science Education booth, #2033, and spin our prize wheel to win some great prizes**

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**Visit us in Room 303 A/B, Thursday and Friday (see schedule below)**

**Attend our hands-on workshops and learn about some extraordinary new products!**

**Door prizes will be awarded!**

<b>Day/Date</b>	<b>Time</b>	<b>Title</b>
Thur., March 18	8:00 a.m. – 9:00 a.m.	The Educational EarthBox®: A Versatile, Easy-to-Use Instructional Tool
Thur., March 18	9:30 a.m. – 11:00 a.m.	The Layered Earth: Geology Curriculum from the Makers of Starry Night
Thur., March 18	1:30 p.m. – 3:00 p.m.	The Green Roof Model: Building a Greener World
Thur., March 18	3:30 p.m. – 5:00 p.m.	NEW Datalogging System for Your Science Lab! A Simple and Affordable Technology Solution for a 21st Century Classroom
Fri., March 19	8:00 a.m. – 9:30 a.m.	NEW, Affordable Technology Solution for a 21st Century Classroom
Fri., March 19	10:00 a.m. – 11:30 a.m.	Advanced Datalogging for Your High School Science Classroom! NEW, Affordable Technology Solution for a 21st Century Classroom
Fri., March 19	1:30 p.m. – 3:00 p.m.	Improving Standardized Test Scores with New Path Learning's Curriculum Mastery Games for High School Students!
Fri., March 19	3:30 p.m. – 5:00 p.m.	Innovating Science: Chemistry Demonstrations that Really Get a Reaction!

### **The Educational EarthBox: A Versatile, Easy-to-Use Instructional Tool**

EarthBox, a scientifically engineered container garden system, supports K–12th grade standards-based curriculum with hands-on, cross-curricula lesson plans that teach students principles and properties of water, light, soil, plants and nutrition.

### **The Layered Earth: Geology Curriculum from the Makers of Starry Night**

What powers the internal processes that produce volcanoes, earthquakes and mountains? What is the rock cycle and, how does it work? What is an earthquake? How are volcanoes formed? Experience the Layered Earth – The Geology Curriculum from the makers of Starry Night.

### **The Green Roof Model: Building a Greener World**

In this interactive, hands-on workshop, you will discover how the NEW Green Roof Model can make real-world technology accessible for your students. Discover the benefits of energy-efficient alternatives to standard commercial and residential roofing using this realistic model.

### **NEW Datalogging System for Your Science Lab! A Simple and Affordable Technology Solution for a 21st Century Classroom**

Fisher Science Education is introducing a brand-new, flexible datalogging system that will help you breathe life into your biology classroom, get a reaction in your chemistry classroom and accelerate your physics labs. This workshop is perfect for middle and high school science teachers.

### **Advanced Datalogging for Your High School Science Classroom! NEW, Affordable Technology Solution for a 21st Century Classroom**

Advanced datalogging activities will be explored as Fisher Science Education introduces you to a brand-new, flexible datalogging system. This workshop is perfect for AP and high school science teachers.

### **Improving Standardized Test Scores with New Path Learning's Curriculum Mastery Games for High School Students!**

This workshop will provide an in-depth overview of New Path Learning's award-winning classroom games, available exclusively through Fisher Science Education. These engaging board game-based learning systems are designed to help increase student scores on standardized testing.

### **Innovating Science Chemistry Demonstrations that Really Get a Reaction!**

This workshop will show you how to incorporate exciting, engaging chemical demonstrations into your chemistry curriculum. These demonstrations are guaranteed to grab your students' attention and enhance their learning experience, all while teaching fundamental science concepts.

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Field Trips T-3, F-5, and S-3:  
Adventure Aquarium

**Friday, March 19**

7:00–8:00 AM	A Broad Spectrum for Science Learning Breakfast (M-4): Karen Peterson . . . . .	15
7:00–8:30 AM	NSTA Dorothy K. Culbert CAG Breakfast (M-3) . . . . .	15
7:00–8:30 AM	High School Breakfast (M-5): Missy Holzer . . . . .	15
7:00 AM–6:00 PM	Informal Science Day . . . . .	8
8:30–9:30 AM	Featured Presentation: Sharnnia Artis . . . . .	39
9:00 AM–5:00 PM	Exhibits . . . . .	39
9:30 AM–2:30 PM	<i>Science Matters</i> Activities . . . . .	52
10:30 AM–12 Noon	Shell Science Seminar: Jane Lubchenco . . . . .	57
10:30 AM–12 Noon	Shell Science Seminar: Adriane E.L. Dorrington . . . . .	58
12 Noon–2:00 PM	ASTE/NSELA Luncheon (M-6): Janice Koch . . . . .	74
12 Noon–2:00 PM	CESI/NSTA Elementary Science Luncheon (M-7): Emily Morgan and Karen Ansberry . . . . .	74
12 Noon–2:00 PM	NSTA/NMLSTA Middle Level Luncheon (M-8): Debbie Goodwin and Andrew Nydam . . . . .	75
12:30–1:30 PM	SCST Marjorie Gardner Lecture: Dee U. Silverthorn . . . . .	76
12:30–1:30 PM	Informal Science Day Keynote Address: Dennis Schatz and Andrew W. Shouse . . . . .	77
1:30–3:00 PM	Featured Panel: <i>Gathering Storm or Gathering Cobwebs?</i> <i>What Is the Federal Response to the Science Education Crisis?</i> . . . . .	89
1:30–3:00 PM	Sigma Science Seminar: H. Kenneth Hudnell . . . . .	90
2:00–3:00 PM	AGU Lecture: Stephen Malone . . . . .	91
3:30–4:30 PM	Robert H. Carleton Lecture: Fred D. Johnson . . . . .	108
3:30–4:30 PM	NSTA Exemplary Science Program (ESP) Symposium II . . . . .	108
6:00 PM–12 Mid	Special Evening Session: A Video Showcase of Inspiring Award-winning Teachers and Their Engaging Courses, Part 2 . . . . .	131

The Philadelphia Planning Committee has planned the conference around the following four strands, enabling you to focus on a specific area of interest or need. Strand events are identified by icons throughout the daily program.

See the following pages for a list of sessions and events for each strand.



### **Meeting the Unique Needs of Urban and Rural Science Learners**

Urban and rural environments are unique in many ways. It is important that teachers, administrators, and parents are collaboratively involved in helping students achieve their fullest potential in science. This strand will provide the participant with programs and teaching strategies that have demonstrated increased academic achievement, foster interest and participation in science, and employ exemplary science programs in urban and rural areas.



### **Connecting Content: Between, Within, and Among Subjects**

In this day and age, the need for relevant connections within and between all subjects and all content is important in assisting students to become globally productive citizens. Providing opportunities for students to engage in developing and establishing integrative concepts is key. This strand will focus on sessions that demonstrate the interconnectedness of science topics with other subjects at varying grade levels.



### **Closing the Digital Generation Gap Between Teachers and Students**

Students today are often advanced in the use of digital technology. How can teachers, many of whom are digital immigrants, become responsible digital educators? The understanding and use of technology are critical components of STEM education. The appropriate use of current technology supports the development of “21st Century Skills” such as real-world applications, creative problem solving, collaboration, and effective communication.



### **Rekindling the Fires of Science Teaching and Learning**

This strand will provide exemplary programs, best practices, and strategies to increase teacher retention and renewal by focusing on such areas as professional learning communities, administrative and science leader support, professional development that focuses on both science content and pedagogy, mentoring programs, and collegial support strategies.

## **Meeting the Unique Needs of Urban and Rural Science Learners**

### **9:30–10:30 AM**

Increasing Appreciation for Science in Six Reservation Schools

### **11:00 AM–12 Noon**

The “Don’t Bug Me” Integrated Pest Management Challenge: Learning Science Through Agriculturally Based Problem Solving

### **12:30–1:30 PM**

Sound Science: Learning About Sound and the Nature of Science Through Inquiry

### **2:00–3:00 PM**

The Promise of Preschool Science

### **3:30–4:30 PM**

Engaging Urban Students in Urban Ecological Studies Through GIS

### **5:00–6:00 PM**

Lessons Learned from Implementing Engineering Learning Activities in an Urban Elementary Science Classroom



**Connecting Content: Between, Within, and Among Subjects**

**8:00–9:00 AM**

Integrate Biology and Geology: 1883 News Report—Krankatoa Erupts!

Teaching Science and History Through Evolution Court Cases

**8:00 AM–12 Noon**

Short Course: Light, Color, and Spectroscopy for Kids (By Ticket: SC-6)

**9:30–10:30 AM**

How Big Are YOUR Feet? Measuring Your Ecological Footprint

Engaging Students with Math and Science Through Global Issues

**11:00 AM–12 Noon**

Connecting Math and Science Through Inquiry: Engaging Lessons for Middle School Kids

**12:30–1:30 PM**

Bringing the Icy Ends of the Earth Right into Your Classroom!

**2:00–3:00 PM**

Build an Interdisciplinary Polar Science Unit with Beyond Penguins and Polar Bears

**2:00–5:00 PM**

Short Course: Nurturing Science in Students Using Outstanding Science Trade Books (By Ticket: SC-10)

**3:30–4:30 PM**

Bridging the Outdoors with Science Education, ELA, Art, and Historical Perspectives

**5:00–6:00 PM**

Reading and Writing Science with Fun Polymer Activities and Children’s Literature

**Closing the Digital Generation Gap Between Teachers and Students**

**8:00–11:00 AM**

ISTE: The Tech-based Science Classroom

**9:00 AM–12 Noon**

Short Course: How to Build a Classroom Planetarium (By Ticket: SC-8)

**12:30–1:30 PM**

ISTE: Podcasting for Students and Teachers in Science

**2:00–3:00 PM**

ISTE: Emerging Technologies in the Science Classroom

**2:00–5:00 PM**

Short Course: Using Technology to Teach Inquiry and Science Concepts Through Outdoor Studies (By Ticket: SC-9)

**3:30–4:30 PM**

What Is Even More Amazing Than Google Earth?

Technology Goes Outdoors: Integrating Technology and Student Notebooks to Capture Seasonal Changes in the Schoolyard

**5:30–6:00 PM**

Earth Science and Engineering Connections

**Rekindling the Fires of Science Teaching and Learning**

**8:00–9:00 AM**

Hollywood Science

**8:00 AM–12 Noon**

Short Course: NSTA Press: Lecture-Free Teaching: A Learning Partnership Between Science Educators and Their Students (By Ticket: SC-7)

**11:00 AM–12 Noon**

Teaching Science to Reluctant Learners

**12:30–1:30 PM**

Get Moving! Kinesthetic Tools for Excellence in Middle School Science

**3:30–4:30 PM**

Add It Up! Metacognitive Strategies + Good Science Curricula = Increased Student Learning!

**Informal Science Day**

Friday, March 19, 7:00 AM–6:00 PM  
Grand Salon E/F, Marriott

Packed with exciting informal science presentations and activities, Informal Science Day is designed to offer a “town square” at which both informal and formal science educators can meet and interact to share best practices in informal science, learn about exciting collaborations happening among informal and formal science organizations, network with colleagues, and dialogue around ideas and innovations. Informal organizations represented include zoos, museums, media, after-school programs, university outreach, and others that provide and/or support out-of-school science education.

An agenda follows. *Informal Science Day events are described throughout the Friday daily program (this volume).*

**Friday, March 19**

- 7:00–8:00 AM A Broad Spectrum for Science Learning Breakfast (Tickets Required: M-4)  
*Using Collaboration to Reach All Science Learners*  
Karen Peterson, PI, National Girls Collaborative Project, and CEO, EdLab Group, Lynnwood, Wash.
- 9:30–10:30 AM Breakout Sessions
- 11:00 AM–12 Noon Breakout Sessions
- 12:30–1:30 PM Keynote Address  
*Surrounded by Science—Improve Your Practice by Exploring What Research Says About Learning Science in Informal Environments*  
Dennis Schatz, Senior Vice President, Pacific Science Center, Seattle, Wash.  
Andrew W. Shouse, Associate Director, University of Washington Institute for Science and Mathematics Education, Seattle
- 2:00–3:00 PM Breakout Sessions
- 4:00–6:00 PM Informal Science Education Share-a-Thon

**Science Matters Activities**

Friday, March 19, 9:30 AM–2:30 PM  
Millennium Hall, Loews

9:30–11:00 AM

**NSTA and Intel Present *Science Matters* National Town Hall Meeting on Science Education**



Governor Rendell

Key stakeholders are calling for dramatic changes in the way science education is taught and learned. Join us for a national conversation and interactive session with state, national, and business leaders as we discuss the state of science education and how teachers are working to prepare students for the challenges of the 21st century.

Panelists will include The Honorable Edward Rendell, Governor of Pennsylvania, and representatives from the White House, the National Science Foundation, and Intel. Topics will include reauthorization of the Elementary and Secondary Education Act, Race to the Top, the Administration’s Educate to Innovate initiative, and Pennsylvania’s strong commitment to STEM education. *Imagine IT: The Power of Imagination*, a powerful documentary about connecting imagination and creativity with science and engineering in education, will be used throughout the event. (A special screening of the *Imagine It* documentary will be held in the Millennium Hall at 1:00 PM.)

1:00–2:30 PM

**Intel and Science Matters Present *Imagine It: The Power of Imagination***

Following the National Town Hall meeting on Science Education, Intel and *Science Matters* are pleased to host a special screening of the film *Imagine It: The Power of Imagination*. Participants will be able to view an edited piece from the documentary, and discuss the importance of the ideas presented in the film. Classroom teachers will be on hand to discuss how educators can use the film in the classroom, and free teaching materials will be available to participants.

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## NSTA Press Sessions

NSTA Press® books offer new classroom ideas and standards-based strategies. Join NSTA Press authors for these sessions linked to the topics of their books.

### Friday, March 19

#### 8:00–9:00 AM

Stop Faking It! Finally Understand LIGHT AND SOUND So You Can Teach It; page 28

#### 8:00 AM–12 Noon

Short Course (SC-7): Lecture-Free Teaching: A Learning Partnership Between Science Educators and Their Students (*Ticket Required*); page 38

#### 9:30–10:30 AM

Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It; page 49

#### 11:00 AM–12 Noon

Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It; page 66

#### 2:00–3:00 PM

Uncovering Student Ideas with Everyday Science Mysteries; page 100

#### 5:00–6:00 PM

Classroom Community-building 21st-Century Style—Blogs, Wikis, and Video; page 125



## NSTA Avenue Sessions

Visit the NSTA Avenue, our marketplace in the Exhibit Hall, to learn about NSTA's products and services. Meet staff, register for the Learning Center, learn about NSTA Communities, or become a member. We're looking for connections to educators with a passion for science education, and we welcome you to our network.



### Friday, March 19

#### 9:30–10:30 AM

How to Write a Successful Grant Proposal; page 40

#### 11:00 AM–12 Noon

Siemens We Can Change the World Challenge—Going Green (and Digital) in the 21st Century; page 58

#### 12:30–1:30 PM

The NSTA Learning Center: Free Classroom Resources and Professional Development for Educators; page 77

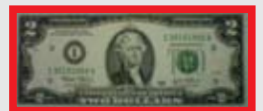
#### 2:00–3:00 PM

No Child Left Behind Update; page 92

#### 3:30–4:30 PM

SciLinks: Using the Online Assignment Tool; page 109

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# Learn from the Past, Get Ready for the Future

## Carolina Professional Development at the 2010 NSTA National Conference

Understand historic science discoveries. Learn today's best teaching practices. Explore the future of classroom instruction. Carolina's professional development sessions are taught by experienced presenters—classroom teachers, science coordinators serving as teaching partners, and our own staff scientists. Their training in the latest teaching techniques, national standards, and cutting-edge science topics means you'll receive concise, valuable information. See below for sessions, times, and locations. **Visit us in booth 1105!**

### Session Schedule

#### Thursday, March 18, 2010

Time	Location	Grade*	Title
9:30 AM–11:00 AM	Room 201B	E	Inquiring Minds Want to Know: An Introduction to Inquiry
9:30 AM–11:00 AM	Room 204A	H	Need "Energy" in Your Environmental Classes? Learn About Carolina's New <i>Inquiries in Science</i> ® Environmental Science Series
9:30 AM–11:00 AM	Room 204B	M, H	Comparative Vertebrate Anatomy with <i>Carolina's Perfect Solution</i> ® Specimens
11:30 AM–1:00 PM	Room 201B	E	Setting the Standard for PreK Science
11:30 AM–1:00 PM	Room 204A	M, H	Strawberry DNA and Molecular Models
11:30 AM–1:00 PM	Room 204B	M, H	Comparative Mammalian Organ Dissection with <i>Carolina's Perfect Solution</i> ® Specimens
1:30 PM–3:00 PM	Room 201B	M	Moving Cars, Driving Learning with the STC Program™
1:30 PM–3:00 PM	Room 204A	H	Energyze Your Chemistry Students' Inquiry Skills with Carolina's <i>Inquiries in Science</i> ® Chemistry Series
1:30 PM–3:00 PM	Room 204B	H	AUTOPSY: Forensic Dissection Featuring <i>Carolina's Perfect Solution</i> ® Pigs
3:30 PM–5:00 PM	Room 201B	E	Science Libraries: Reading for Content
3:30 PM–5:00 PM	Room 204A	E, M, H	Creating Habitats in the Classroom
3:30 PM–5:00 PM	Room 204B	H	Forensics for the Biology Laboratory

#### Friday, March 19, 2010

Time	Location	Grade*	Title
8:00 AM–9:30 AM	Room 201B	E	Going the Distance in Math
8:00 AM–9:30 AM	Room 204A	E, M, H	Hands-On Science with Classroom Critters
8:00 AM–9:30 AM	Room 204B	H, C	Exploring Feline Anatomy with <i>Carolina's Perfect Solution</i> ® Cats
10:00 AM–11:30 AM	Room 201B	E, M	Discover the Solar System and Beyond
10:00 AM–11:30 AM	Room 204A	H	Introduction to Protozoa
10:00 AM–11:30 AM	Room 204B	E, M	Carolina's Young Scientist Dissection Series
12:00 PM–1:30 PM	Room 201B	E	Science Notebooking: Integrating Writing and Science
12:00 PM–1:30 PM	Room 204A	E, M, H	Introduction to Wisconsin <i>Fast Plants</i> ®
12:00 PM–1:30 PM	Room 204B	H	Amplify Your Genetics Teaching Skills with Carolina's New <i>Inquiries in Science</i> ® Biology Units
2:00 PM–3:30 PM	Room 201B	E	Energy Works!
2:00 PM–3:30 PM	Room 204A	M, H	It's Alive! Carolina's Classroom Genetics
2:00 PM–3:30 PM	Room 204B	M, H	Take the Leap: <i>Carolina's Perfect Solution</i> ® Frog Dissection
4:00 PM–5:30 PM	Room 201B	M	Creepy Crawlers in the Middle School Classroom
4:00 PM–5:30 PM	Room 204A	H, C	From Fast Gels to Fruit Flies
4:00 PM–5:30 PM	Room 204B	H	SQUID INK-UIRY: Inquiry-Based Invertebrate Anatomy Through Squid Dissection

\*E=Elementary, M=Middle School, H=High School, C=College



Visit us  
in booth  
1105!



**See how much fun learning can be!**

**Saturday, March 20, 2010**

Time	Location	Grade*	Title
8:00 AM–9:30 AM	Room 201B	E	Exploring the World Through the 5 Senses
8:00 AM–9:30 AM	Room 204A	H	Introduction to Electrophoresis
8:00 AM–9:30 AM	Room 204B	H, C	Think Mink! Exploring Mammalian Anatomy with <i>Carolina's Perfect Solution</i> ® Mink
10:00 AM–11:30 AM	Room 201B	E	Do They Get It? Assessment Strategies for an Inquiry Classroom
10:00 AM–11:30 AM	Room 204A	H	Go APES! Explore Carolina's Quality AP® Environmental Science Series
10:00 AM–11:30 AM	Room 204B	H, C	Rats! Inquiry-Based Dissection with <i>Carolina's Perfect Solution</i> ® Specimens
12:00 PM–1:30 PM	Room 201B	M	Hands-On, Minds-On Middle School Science
12:00 PM–1:30 PM	Room 204A	H, C	Teaching Genetics and Biotechnology with Carolina's Manipulative Kits
12:00 PM–1:30 PM	Room 204B	H	Molecular Models in the Classroom
2:00 PM–3:30 PM	Room 201B	E	1, 2, 3, 4 . . . Boost Your Students' Math Scores
2:00 PM–3:30 PM	Room 204A	H, C	Exploring Gene Function in <i>C. elegans</i> : Mutations and RNA Interference
2:00 PM–3:30 PM	Room 204B	E, M, H	Butterflies in Your Classroom

**For more information, visit [www.carolina.com/nsta](http://www.carolina.com/nsta) or call 866.815.2450.**



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**7:00–8:00 AM A Broad Spectrum for Science Learning Breakfast (Informal Science Day)**

**Using Collaboration to Reach All Science Learners (M-4)**

(Tickets Required: \$15)

Grand Salon E/F, Marriott



**Karen Peterson** ([kpeterson@edlab-group.org](mailto:kpeterson@edlab-group.org)), PI, National Girls Collaborative Project, and CEO, EdLab Group, Lynnwood, Wash.

Join the NSTA Informal Science Division as we explore a wide spectrum of science learning. Enjoy a continental breakfast while networking and mingling. Discover

the world of informal science education and the importance of bonding our efforts to motivate today's youth. Featured speaker Karen Peterson will present several nationally known projects that address gender, racial, and socioeconomic underrepresentation in STEM fields.

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**7:00–8:15 AM Meeting**

**Development Advisory Board Meeting**

(By Invitation Only)

310, Marriott

**7:00–8:30 AM Breakfast**

**NSTA Dorothy K. Culbert Chapters and Associated Group Breakfast (M-3)**

(Tickets Required: \$40)

304, Marriott

This event is a great way for NSTA chapter and associated group leaders to kick off their conference experience!

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**7:00–8:30 AM High School Breakfast**

**From Climate Change Research in the Arctic to Authentic Research in the Classroom (M-5)**

(Tickets Required: \$40)

Logans 1, Sheraton



**Missy Holzer** ([mholzer@monmouth.com](mailto:mholzer@monmouth.com)), Earth Science Teacher, Chatham High School, Chatham, N.J.

Students are ready to participate in full open-inquiry projects, but are you ready to be their coach? PolarTREC teacher Missy Holzer was immersed in paleoclimate research

in the High Arctic and found it was the perfect preparation for teaching high school students about the nature and practices of science. Missy will take you to the Arctic to immerse you in field research. You will leave this breakfast with activities developed from her experience and a plethora of coaching tips to use with your students as they engage in authentic research projects.

*Missy has been teaching high school science for 24 years and loves her job as much today as she did when she first started. Her philosophy of science education is that science content knowledge develops through the practices of science, and therefore science must be taught using authentic, minds-on inquiry activities to foster a deep understanding of the natural world. In her classroom, her students use real-time, archived, and original data and data tools in their pursuit of understanding Earth system science. She enjoys field research immensely and has assisted researchers in places such as Svalbard, Nicaragua, Hawaii, Kenya, Ecuador, Blue Mountains of Jamaica, the Sierra Nevada, off the coast of Chile, and off the coast of Oregon. She has been a PolarTREC teacher, Earthwatch Educator Fellow, and NOAA Teacher at Sea. Back in the classroom she uses her experiences to develop units of study that inspire students to get out and explore their natural world.*

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**7:00–9:00 AM Breakfast**

**AMSE Alice J. Moses Breakfast**

(By Invitation Only)

Regency A, Loews

## 7:00–9:00 AM Meetings

### NMLSTA Board Meeting (Part 1)

(NMLSTA Members Only) Roberts Board Room, Loews

### Society of Elementary Presidential Awardees (SEPA) Board Meeting

(By Invitation Only) Conference Suite I, Marriott

## 7:00–9:00 AM Breakfast

### APAST Breakfast Meeting

(By Invitation Only) Grand Salon I, Marriott

For more information, please visit [www.apast.org](http://www.apast.org).

## 7:30–10:00 AM Breakfast

### ASMC Networking Forum Breakfast

(By Invitation Only) Howe, Loews

Come join ASMC and friends for breakfast and networking. We will facilitate resource sharing, exchange strategies, and discuss initiatives addressing the next steps in science education.

## 8:00–8:30 AM Presentation

### SESSION 1

#### Meaningful Do-Nows and Fillers to Explore Ideas, Stimulate Curiosity, and Improve Scientific Communication (Gen)

(Elementary–Middle Level/Inf. Ed.) Hall D/Room 23, Conv. Center  
**Nina Visconti-Phillips** ([ninavp@ymail.com](mailto:ninavp@ymail.com)), New Jersey Science Teachers Association, Cranbury

**Susan E. Coletta** ([coletta@waksman.rutgers.edu](mailto:coletta@waksman.rutgers.edu)), Waksman Institute of Microbiology, Rutgers University, Piscataway, N.J.

Use these impromptu activities to tie concepts together, pique student interest, introduce topics, or informally assess student understanding.

## 8:00–9:00 AM Presentations

### SESSION 1 (two presentations)

(High School–College) Hall D/Room 6, Convention Center

#### Integrate Biology and Geology: 1883 News Report—Krakatoa Erupts! (Gen)

**James H. Wandersee** ([jwander@lsu.edu](mailto:jwander@lsu.edu)), Louisiana State University, Baton Rouge

**Renee M. Clary** ([rclary@geosci.msstate.edu](mailto:rclary@geosci.msstate.edu)), Mississippi State University, Mississippi State, Miss.

The eruption of Krakatoa triggered global changes. Teach a bio-geo inquiry lesson involving five senses using volcanic audio, sulfur jars, Pop Rocks, pumice, dispersal modeling, and historical data.

#### Teaching Science and History Through Evolution Court Cases (Bio)

**David Wisnieski** ([wisnieski@bxscience.edu](mailto:wisnieski@bxscience.edu)), The Bronx High School of Science, Bronx, N.Y.

An interdisciplinary unit on evolution education court cases enables students to learn about the history and nature of science, social studies, and science content.

### SESSION 2

#### Hollywood Science (Gen)

(Middle Level–College) Hall D/Room 7, Convention Center

**Daryl L. Taylor** ([daryl@darylscience.com](mailto:daryl@darylscience.com)), Greenwich High School, Greenwich, Conn.

Use your students' already established knowledge of current movies, TV shows, and other media to explore the science misconceptions they promote.

### SESSION 3

#### Hey! Wow! But What Are We Supposed to Do with It? Open-ended Science Activities for Young Children (Gen)

(Preschool) Hall D/Room 8, Convention Center

**Tammy C. Brown**, The University of West Alabama, Livingston

President: Scott Brown, Sumter Academy, York, Ala.

Explore open-ended activity boxes while using science process skills to work with objects. Take home a CD with activities.

### SESSION 4

#### An Overview of NSDL's Science Literacy Maps (Gen)

(General) Hall D/Room 11, Convention Center

**Ted Willard** ([twillard@aaas.org](mailto:twillard@aaas.org)), AAAS Project 2061, Washington, D.C.

Come see how to use the science literacy maps in NSDL to browse concepts and look for digital resources.

# Friday, March 19

	Presentations/Workshops	General Sessions/Special Events	Shell Seminars	Exhibitor Workshops
8:00 AM				
9:00 AM		<p><b>Featured Presentation</b> 8:30–9:30 AM 201C, Convention Center Speaker: Sharnnia Artis</p>		
10:00 AM				
11:00 AM		<p><b>SCST Marjorie Gardner Lecture</b> 12:30–1:30 PM Commonwealth A, Loews Speaker: Dee U. Silverthorn</p>	<p><b>Shell Science Seminars</b> 10:30 AM–12 Noon Room 201C, Conv. Ctr. Speaker: Jane Lubchenco Room 204C, Conv. Ctr. Speaker: Adriane E.L. Dorrington</p>	
12 Noon				
1:00 PM		<p><b>Featured Panel</b> 1:30–3:00 PM Room 201C, Conv. Ctr. <i>Gathering Storm or Gathering Cobwebs?</i> <i>What Is the Federal Response to the Science Education Crisis?</i></p>		
2:00 PM				
3:00 PM		<p><b>Sigma Science Seminar</b> 1:30–3:00 PM 204C, Convention Center Speaker: H. Kenneth Hudnell</p>		
4:00 PM	<p><b>NSTA ESP Symposium II</b> 3:30–4:30 PM Grand Salon K, Marriott</p>	<p><b>AGU Lecture</b> 2:00–3:00 PM Room 201C, Conv. Ctr. Speaker: Stephen Malone</p>		
5:00 PM		<p><b>Robert H. Carleton Lecture</b> 3:30–4:30 PM Room 201C, Conv. Ctr. Speaker: Fred D. Johnson</p>		
6:00 PM				
7:00 PM		<p><b>Special Evening Session</b> 6:00 PM–12 Midnight Commonwealth C, Loews <i>A Video Showcase of Inspiring Award-winning Teachers and Their Engaging Courses, Part 2</i></p>		
8:00 PM				



**SESSION 5****The FoodMASTER Initiative (Gen)**

(Elementary) *Hall D/Room 14, Convention Center*  
**Virginia Carraway-Stage** (*vgc0512@ecu.edu*), **Jana Hovland** (*jah0830@ecu.edu*), and **Melani Duffrin** (*duffrinm@ecu.edu*), East Carolina University, Greenville, N.C.

Presider: Michelle Hammonds, Rosy Mound Elementary School, Grand Haven, Mich.

The Food, Math, and Science Teaching Enhancement Resource (FoodMASTER) curriculum uses food as a tool to teach math and science. Learn the techniques for incorporating food-based math and science lessons in your classroom and take part in the Selecting Cereals learning lab.

**SESSION 6****Using Computer Visualizations to Teach About Small, Unseen Particles (Chem)**

(Elementary–Middle Level) *Hall D/Room 19, Convention Center*  
**Brenda J. Gustafson** (*brenda.gustafson@ualberta.ca*), University of Alberta, Edmonton, Canada

Explore computer visualizations designed to introduce students to basic ideas about the small, unseen particles that comprise matter.

**SESSION 7****Going for the Gold: Creating a Science Olympics Competition at Your School (Gen)**

(Elementary–Middle Level) *Hall D/Room 20, Convention Center*  
**Angela M.D. Nelson** (*angela.nelson@dukeschool.org*), Duke School, Durham, N.C.

Looking for a fun way to bring science to life at your school? Come explore ways to make a schoolwide science olympics event.

**SESSION 8****Integrating Math, Science, and Literacy in the K–8 Classroom (Gen)**

(Elementary–Middle Level) *Hall D/Room 22, Convention Center*  
**Gregory Borman** (*gborman@ccny.cuny.edu*), The City College of New York, N.Y.

**Sandra C. Jenoure** (*sjenoure@schools.nyc.gov*), New York City (N.Y.) Dept. of Education

These strategies are used in New York City schools to help students see the connections between mathematics, science, and literacy.

**SESSION 9****Empowering Teachers of ELLs and At-Risk Students with PBL Strategies to Improve Instructional Delivery and Classroom Management (Gen)**

(General) *Hall D/Room 25, Convention Center*

**Eduardo Guevara** (*eduardo.guevara@mail.house.gov*), Einstein Fellow, Office of The Honorable Michael Honda, Washington, D.C.

We will look at project-based learning tools and teaching strategies to improve instructional delivery and classroom management for ELLs and at-risk students.

**SESSION 10****Spreading the Word: Writing Science to Fascinate an Everyday Audience (Gen)**

(General) *Hall D/Room 26, Convention Center*

**Julie S. Lakehomer** (*julie@juliesimonlakehomer.com*), Retired Educator, Chicago, Ill.

**Michael Lemonick** (*mlemonick@climatecentral.org*), Climate Central, Princeton, N.J.

**Franklin Hoke** (*franklin.hoke@fcc.edu*), Fox Chase Cancer Center, Philadelphia, Pa.

**Karen Kreeger** (*karen.kreeger@uphs.upenn.edu*), University of Pennsylvania School of Medicine, Philadelphia

Presider: Julie S. Lakehomer

Hurrah! Science is IN! Create articles, editorials, or a book. This symposium of science writers shows you how to write for both students and general audiences.

**SESSION 11****From School Colors to Green: Using School-wide Changes to Create Cross-curricular Opportunities (Gen)**

(General) *Hall D/Room 27, Convention Center*

**Robert W. Penrose** (*rpenrose@unitedsd.net*), United High School, Armagh, Pa.

Many cross-curricular opportunities have been created for our students to become more environmentally aware.

SESSION 12

**Integrating the Sciences Through Energy (Gen)**

(Middle Level–College) Hall D/Room 29, Convention Center

**Pam Pelletier**, Boston (Mass.) Public Schools

**Arthur Eisenkraft** ([arthur.eisenkraft@umb.edu](mailto:arthur.eisenkraft@umb.edu)), 2000–2001 NSTA President, and University of Massachusetts, Boston

**Fernando Cleves**, Joyce Kilmer Upper School, West Roxbury, Mass.

Through the Boston Science Partnership, we have taught a graduate-level course for middle school and high school teachers that aims to transcend disciplinary silos, connect core concepts more efficiently, and support robust learning of fundamental concepts. Let's look at the results.

SESSION 13

**Blogs and Podcasts, Wiki Sites, and Streamed Video, Oh My! (Gen)**

(General) Hall D/Room 30, Convention Center

**Richard Benz** ([lc\\_benz@lqca.org](mailto:lc_benz@lqca.org)), Lake County Educational Service Center, Concord, Ohio

Presider: **Pal Asija** ([pal@ourpal.com](mailto:pal@ourpal.com)), Our Pal LLC, Shelton, Conn.

Do you blog? Wiki? Vodcast? You should! Explore the newest tools, techniques, and technologies to enhance your science classroom. This session will help you “geek up” just a little bit.

SESSION 14 (three presentations)

(Middle Level–College) Commonwealth A, Loews

**SCST Session: Increasing 21st-Century Science and Literacy Skills (Gen)**

**Teddie Phillipson-Mower** ([t0phil01@louisville.edu](mailto:t0phil01@louisville.edu)), University of Louisville, Ky.

**Carol D. Hanley** ([chanley@uky.edu](mailto:chanley@uky.edu)) and **Laurie Henry** ([lauriehenry@uky.edu](mailto:lauriehenry@uky.edu)), University of Kentucky, Lexington  
Science reform documents place priority on literacy development in addition to inquiry. We will share our work developing literacy and science content knowledge.

**SCST Session: Analyzing Political Cartoons to Stimulate Higher-Order Thinking in Science Courses (Bio)**

**Jerry Waldvogel** ([waldvoj@clemson.edu](mailto:waldvoj@clemson.edu)), Clemson University, Clemson, S.C.

Learn how students can enhance their analytical thinking skills through structured critiques of science-related political cartoons.

**SCST Session: Science Education and Creation Museums (Bio)**

**Michael Gipson**, Oklahoma Christian University, Edmund

I visited creation museums where I heard presentations and interviewed staff to examine influences on science education.

SESSION 15

**AMSE Session: Understanding Science: How Science Really Works (Gen)**

(General) Commonwealth D, Loews

**Anna Thanukos** ([thanukos@berkeley.edu](mailto:thanukos@berkeley.edu)), University of California Museum of Paleontology, Berkeley

Science benefits from diverse perspectives. Explore a new cross-discipline resource that emphasizes this diversity through tools for teaching the true nature and process of science.

SESSION 16 (two presentations)

(High School–College/Informal Education) Congress A, Loews

**The Sky's the Limit: A Cross-disciplinary Collaboration of Science and Art (Gen)**

**Lynn M. Diener** ([dienerl@mtmary.edu](mailto:dienerl@mtmary.edu)) and **Jordan A. Anderson** ([andersoj@mtmary.edu](mailto:andersoj@mtmary.edu)), Mount Mary College, Milwaukee, Wis.

In a cross-disciplinary collaboration between science and art departments, students created individual expressive compositions in response to imagery related to the atmosphere.

**Civic Engagement and the Study of Science...Let's Bond Them Together (Gen)**

**Frank Hubacz** ([hubaczf@franklinpierce.edu](mailto:hubaczf@franklinpierce.edu)), Franklin Pierce University, Rindge, N.H.

Learn how to implement an actionable civic engagement component in your science course. I'll share specific examples.

SESSION 17

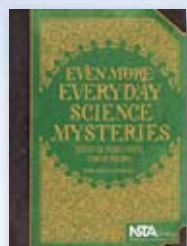
**Using Portfolios to Promote Reflective Practice in New Teachers (Gen)**

(General) Congress B, Loews

**Carolyn Rulli** ([crulli@kstf.org](mailto:crulli@kstf.org)) and **William McCaffrey** ([wmccaffrey@kstf.org](mailto:wmccaffrey@kstf.org)), Knowles Science Teaching Foundation, Moorestown, N.J.

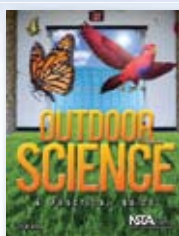
Beginning teachers share their reflections on the impact of portfolios on their practice and professional growth.

# Explore NEW Resources from NSTA Press!



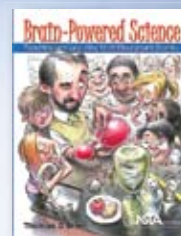
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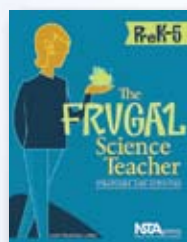
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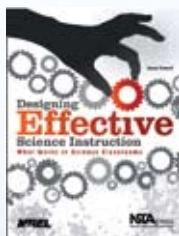
## The Big Ideas of Nanoscale Science and Engineering

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Member: \$22.36  
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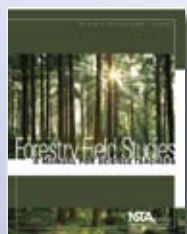
## Designing Effective Science Instruction

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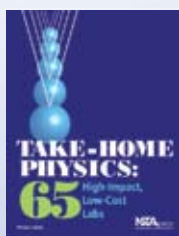
## Answers to Science Questions From the *Stop Faking It!* Guy

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**SESSION 18**

**NSELA Session: Miles, Smiles, and Lots of Chocolate (Gen)**

(General) Congress C, Loews

**Janis Slater**, University of Oklahoma, Norman  
Science teachers are as diverse as the students they teach. Join me as I share lessons learned from implementing a statewide K–8 professional development program.

**SESSION 19**

**Designing Effective Curriculum Guides to Improve School District Science Achievement (Gen)**

(Elementary/Supervision) Regency C1, Loews

**Daniel Alcazar-Roman** ([dalcazar@houstonisd.org](mailto:dalcazar@houstonisd.org)), **Sandra R. Antalis**, and **Dee Mock** ([dmock@houstonisd.org](mailto:dmock@houstonisd.org)), Houston (Tex.) Independent School District

Learn to design research-based district science curriculum guides to promote instructional practices that are effective and congruent with state standards, high-stakes testing, and various district initiatives.

**SESSION 720** (two presentations)

(General) Tubman, Loews

**NARST Session: Teaching Deaf Students Earth Science Using Sandbox Fault Models (Earth)**

**Allan Feldman** ([allanfeldman@coedu.usf.edu](mailto:allanfeldman@coedu.usf.edu)), University of South Florida, Tampa

**Mary Ellsworth** ([mary.ellsworth@gallaudet.edu](mailto:mary.ellsworth@gallaudet.edu)), Gallaudet University, Washington, D.C.

A university/secondary school collaboration examined how deaf students and their teachers use a sandbox to model geologic faults and learn science through experimenting, observing, sketching, and writing.

**NARST Session: Guided Peer Discussions as a Scaffold for Developing Learning Progressions About Inquiry (Env)**

**Meredith Park Rogers** ([mparkrog@indiana.edu](mailto:mparkrog@indiana.edu)), Indiana University, Bloomington

This study identified how elementary preservice teachers' understanding of inquiry progressed over the course of a six-week inquiry and factors that influenced their progression.

**SESSION 21**

**ASTE Session: Learning Physics in the Real World (Phys)**

(College) Washington A, Loews

**Aimee Govett** ([govett@mail.etsu.edu](mailto:govett@mail.etsu.edu)) and **Mary C. Myron** ([myron@etsu.edu](mailto:myron@etsu.edu)), East Tennessee State University, Johnson City

This study explored elementary teacher candidates' efficacy in teaching physics concepts (force and motion) to young children. Pre- and post-testing of concepts and documentation were used to determine effectiveness.

**SESSION 22**

**Recruiting and Motivating AP Science Students in Urban Schools: Strategies That Work (Gen)**

(High School–College/Supervision) Washington B, Loews

**Kristen L. Cacciatore** ([kcacciatore@boston.k12.ma.us](mailto:kcacciatore@boston.k12.ma.us)), East Boston High School, Boston, Mass.

Learn how Advanced Placement science teachers in Boston Public Schools are successfully recruiting and motivating students. I'll share classroom-tested best practices.

**SESSION 23**

**Forensic Science: How to Get Kids Interested in Science! (Gen)**

(Middle Level–High School) 302/303, Marriott

**Anne Cupero** ([annecupero@gmail.com](mailto:annecupero@gmail.com)), Arlington Career Center, Arlington, Va.

Forensic science connects biology, chemistry, physics, and earth science in meaningful ways and can be done as a unit or as a whole class. Leave this session with a set of curriculum handouts and a lab.

**SESSION 24**

**How to Take a Field Trip in the Digital Age (Gen)**

(Middle Level–High School/Informal Ed.) 305/306, Marriott

**Monica Garcia**, American Museum of Natural History, New York, N.Y.

Presenter: Minna Palaquibay, American Museum of Natural History, New York, N.Y.

Using our museum website as a model, we'll show you a new way of thinking about pre- and post- field trip activities.



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SESSION 25

**PDI** **McREL Pathway Session: Student-designed Experiments** (Gen)

(General) 401/402, Marriott

**Bj Stone** (*bstone@mcrel.org*), Mid-continent Research for Education and Learning, Denver, Colo.

Can your students design their own experiments? These experimental design diagrams help students plan for experiments that help them understand science concepts. Handouts provided.

SESSION 26

**PDI** **LHS Pathway Session: Green Chemistry: Using Chemistry Knowledge to Inform Societal Decisions** (Gen)

(Middle Level–High School) 404, Marriott

**Kathaleen Burke** (*kathaleenburkel@mac.com*), Buffalo Science Teachers' Network, Buffalo, N.Y.

**Donna Markey** (*donnamarkey@cox.net*), Vista Magnet Middle School, Vista, Calif.

These classroom activities engage students in “green” chemistry and the product life cycle, helping them make evidence-based societal decisions. Activities can be adapted for middle and high school physical science or chemistry classrooms.

SESSION 27

**PDI** **Skills Pathway Session: The Intersection of Science and 21st-Century Skills** (Gen)

(High School) 405, Marriott

**Janet Kolodner** (*jlk@cc.gatech.edu*), Georgia Institute of Technology, Savannah

Science has unique domain-specific aspects and practices that hold promise for developing 21st-century skills.

SESSION 28

**PDI** **FHL Pathway Session: Louisville Is Engaging Children Outdoors (Louisville ECHO)** (Gen)

(Elementary–Middle Level/Informal Ed.) 407/408, Marriott

**Bennett Knox** (*bennett.knox@louisvilleky.gov*), Louisville Metro Parks, Fairdale, Ky.

Metro Parks' signature inquiry-based environmental education initiative provides urban students in grades 4–5 with multiple meaningful outdoor experiences.

SESSION 29

**PDI** **BSCS Pathway Session: Got Inquiry? How Do We Know?** (Gen)

(Supervision/Administration) 414/415, Marriott

**Elizabeth Edmondson**, BSCS, Colorado Springs, Colo.

Are you an administrator observing classes? Wonder what the students are doing? Learn about “look fors” as you observe classes.

SESSION 30

**MOSART Life Science: Assessing Student Understanding of the K–4 Life Science Standards** (Bio)

(Elementary–Middle Level/Supervision) Franklin 2, Marriott

**Philip M. Sadler** (*psadler@cfa.harvard.edu*) and **Jaimie Miller** (*jmillier@cfa.harvard.edu*), Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

We will present findings from our assessment of fifth-grade students using multiple-choice items linked to the NRC K–4 Life Science Standards and published misconception research.

SESSION 31

**Powerful, Free Molecular Simulations for Teaching Biology** (Bio)

(Middle Level–High School) Franklin 3, Marriott

**Chad W. Dorsey** (*cdorsey@concord.org*), The Concord Consortium, Concord, Mass.

Discover how free, NSF-funded molecular simulations and curricula from The Concord Consortium can add a new dimension to your biology teaching. Take home a CD with software and resources. Bring your laptop if you like!

SESSION 32

**Enhancing Young Children's Comprehension of Science with Hands-On Science Teaching** (Phys)

(General) Franklin 6, Marriott

**Peter P. Chang** (*peterpchang@hotmail.com*), Jackson State University, Jackson, Miss.

Early childhood exposure to science is vital to future science learning. Learn how to enhance comprehension of scientific concepts with hands-on experimentation.

SESSION 33

**Using Moodle to Enhance Student Learning** (Gen)

(Middle Level–College) Franklin 7, Marriott

**Jennifer L. Towleh** (*jennifer\_towleh@asl.org*), American School in London, U.K.

Learn how to post assignments, websites, and even hand-in tests online using Moodle.

**SESSION 34**

**Basic Polymer Chemistry for the High School Classroom (Chem)**

(High School) Franklin 10, Marriott

**Debbie Goodwin** (*nywin@hotmail.com*), Chillicothe High School, Chillicothe, Mo.

**Andrew G. Nydam** (*andrewnydam@hotmail.com*), Olympia High School, Olympia, Wash.

Simple demonstrations, labs, and activities bring polymers into the curriculum and make it relevant. Concepts include formation, classification, structure, and properties. Handouts provided.

**SESSION 35**

**NOAA Climate Symposium Session: Corals and Climate Change (Bio)**

(Middle Level–High School/Informal Ed.) Franklin 11, Marriott

**Paulo S. Maurin** (*paulo.maurin@noaa.gov*), NOAA, Silver Spring, Md.

Coral reefs are facing threats from climate change in the form of elevated ocean temperatures and ocean acidification. Learn the effects of these threats and take home K–12 educational resources.

**SESSION 36**

**NSTA Student Chapter Faculty Advisor Roundtable (Gen)**

(College) Grand Salon G, Marriott

**Bambi L. Bailey** (*bambi\_bailey@uttyler.edu*), The University of Texas at Tyler

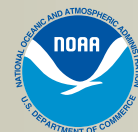
**Deborah L. Hanuscin**, University of Missouri, Columbia  
Are you an NSTA student chapter faculty advisor? Join us to meet counterparts, share information, explore solutions to common problems, and plan for the future!

**Climate Change is Happening in Your Backyard... Now!**

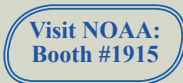


**Dr. Jane Lubchenco, NOAA Administrator**  
**Shell Science Seminar: Building an Environmentally Literate Workforce through STEM Education**

Friday, March 19, *Pennsylvania Convention Center, 201C, 10:30am-12:00pm*



**Symposium: Thursday, March 18**  
**Climate Change Here and Now: Coastal, Ocean and Atmospheric Impacts**  
1-6 pm, *Philadelphia Marriot, Franklin 11*



**Presentation Series: Friday, March 19, Philadelphia Marriot, Franklin 11**

- |  |  |
|--|--|
| 8:00 - 9:00am Corals and Climate Change          | 2:00-3:00pm Climate Information in Your Neighborhood |
| 9:30 - 10:30am Coastal Impacts: Sea Level Rise   | 3:30-4:30pm Climate Change Toolkit                   |
| 11:00am - 12:00pm Arctic Sea Ice                 | 5:00-6:00pm Using Data to Teach Climate Change       |
| 12:30 - 1:30pm Explore Earth Systems using GLOBE |  |

**Free Ongoing Climate Change Webinar Series:** [http://learningcenter.nsta.org/products/symposia\\_seminars/fall09/NOAA/webseminar.aspx](http://learningcenter.nsta.org/products/symposia_seminars/fall09/NOAA/webseminar.aspx)  
Visit us at <http://www.climate.gov>

**SESSION 36**

**PolyWhat? Understanding What a Polymer Is: Polymer 101 (Chem)**

(High School) *Grand Salon L, Marriott*

**Sherri C. Rukes** (*scrukes@comcast.net*), Libertyville High School, Libertyville, Ill.

Explore different ways of introducing what a polymer is in a way that you and your students can understand. We'll share examples and handouts.

**SESSION 38**

**NASA's GLOBE Program Across the Curriculum (Env)**

(General) *Freedom E, Sheraton*

**Teresa J. Kennedy**, The GLOBE Program, Tyler, Tex.  
**Michael Odell** (*michael\_odell@uttyler.edu*), The University of Texas at Tyler

The GLOBE program provides students with a more integrated view of the various subjects they study and supports curricula interconnections in all areas.

**SESSION 39** (two presentations)

(General) *Freedom F, Sheraton*

**Connecting Astronomy Content with Interactive Videoconferencing in Kindergarten (Earth)**

**Debra C. Burkey Piecka** (*dpiecka@comcast.net*), Educational Researcher, Pittsburgh, Pa.

Explore the meanings formed between a Pennsylvania kindergarten classroom and a British primary class engaged in learning about astronomy via videoconferencing.

**From the Night Sky to the Classroom: The Art of Science (Earth)**

**Dana Maria Dezotell** (*danadezotell@yahoo.com*), Missisquoi Valley Union High School, Swanton, Vt.

Urban and rural learners struggle to pursue an advanced science career. What are the benefits that a rural environment gives back to its learners?

**SESSION 40**

**Connecting Drug Education, Environmental Science, and Technology: The Game Is On! (Env)**

(Middle Level) *Independence A, Sheraton*

**Yvonne Klisch** (*yvonne.klisch@rice.edu*), Rice University, Houston, Tex.

**Lynn Lauterbach** (*lynnlauterbach@gmail.com*), Erwin Middle School, Loveland, Colo.

Presider: Marian Grogan, TERC, Cambridge, Mass.

Engage your students with a popular, free web adventure that teaches how inhalants pollute the body.

**SESSION 41**

**Creating a Meaningful Learning Experience with Google Earth (Earth)**

(General) *Independence B, Sheraton*

**Tina S. Ornduff**, Google, Mountain View, Calif.

Come see all of the great science gems in Google Earth. Teachers across the globe have created engaging classroom activities that go beyond geography to teach science and more.

**SESSION 42** (two presentations)

(General) *Independence C, Sheraton*

**The Moose Is Loose at American Wilderness Leadership School (Env)**

**David L. Green**, Heber Springs High School, Heber Springs, Ark.

Add years to your science career with the outdoor adventure of a lifetime. I'll share photographs, materials, and curricula.

**Polar Bears to Penguins (Env)**

**Megan F. O'Neill** (*moneill@bcbe.org*), Fairhope High School, Fairhope, Ala.

Learn from a "bipolar teacher" how working alongside scientists at both poles with the ARMADA Project ignited classroom teaching and student learning, and inspired new teachers.

**SESSION 43** (two presentations)

(General) *Independence D, Sheraton*

**Graduate Students as Content Experts for Enhancing Earth System Science Curricula in the 7–12 Classroom (Earth)**

**Laura A. Guertin** (*uxg3@psu.edu*), Penn State Brandywine, Media, Pa.

**Tanya Furman** (*furman@psu.edu*), The Pennsylvania State University, University Park

Graduate students who serve as science content experts for teachers developing inquiry-based Earth system science curricula experience rewards and challenges and contribute to improved learning.

**K–12 NOAA-supported Lessons in Ocean and Climate Literacy (Earth)**

**Robert J. Myers** (*bob\_myers@strategies.org*), **Theresa Schwerin**, and **Lynn Blaney** (*lblaney@lst.net*), Institute for Global Environmental Strategies, Arlington, Va.

Explore ocean and climate literacy lessons you can use Monday in the classroom. Topics include El Niño/La Niña, tsunamis, harmful algal blooms, oil spills, and more.

# Save the Dates!

## **NSTA Conferences on Science Education are coming to a city near you.**

- Attend presentations, special programs, and workshops on relevant issues—literacy, assessment, inquiry, and more.
- Develop content knowledge.
- Build teaching skills with new strategies.
- Learn from experts and become inspired.
- Sessions for educators in every grade band and every discipline.

### **Kansas City, MO** **October 28-30**

#### Strands:

- Data-driven Learning
- Developing and Communicating Conceptual Understanding for All Students
- Scientific Innovation: Applying Science in the Real World

### **Baltimore, MD** **November 11-13**

#### Strands:

- Teaching Science in the 21st-Century Classroom
- Embracing the World from Our Own Backyard: Environmental Education
- Building Tomorrow's Work Force: Science, Technology, Engineering, and Mathematics (STEM)

### **Nashville, TN** **December 2-4**

#### Strands:

- Building Capacity to Lead Professional Learning
- The Brain-considerate Classroom
- Understanding a Designed World

Visit [www.nsta.org](http://www.nsta.org) for more information.

**NSTA** National  
Science  
Teachers  
Association

## 8:00–9:00 AM Workshops

### Why Does It Rain? Misconceptions in Elementary Science (Env)

(Preschool–Middle Level/Informal) Hall D/Room 9, Convention Center

**Mark Twiest**, Indiana University of Pennsylvania, Indiana

Explore strategies and fun activities to help your students understand the weather and seasons.

### Voyage to Pluto, Charon, and Beyond (Earth)

(Elementary) Hall D/Room 10, Convention Center

**Heather Weir** ([heather.weir-1@nasa.gov](mailto:heather.weir-1@nasa.gov)), NASA Goddard Space Flight Center and SSAI, Lanham, Md.

Learn about New Horizons, NASA's mission to explore Pluto, Charon, and the edge of our solar system, and try some activities for your classroom.

### Bargain Bag Science for Elementary School Teachers: Cheap and Easy Science Ideas for Elementary Science (Gen)

(Preschool–Elementary) Hall D/Room 15, Convention Center

**Jennifer C. Williams** ([jwilliams@newmanschool.org](mailto:jwilliams@newmanschool.org)), Isidore Newman School, New Orleans, La.

Bring inquiry-based science to the classroom regardless of your budget. Create inexpensive, literature-based, and “portable” hands-on science activities that will quench your students’ curiosity.

### Children’s Literature with a Science Twist (Gen)

(Elementary) Hall D/Room 16, Convention Center

**Amy L. Adair** ([aadair@harding.edu](mailto:aadair@harding.edu)), Harding University, Searcy, Ark.

**Vicki Garland**, Wilbur D. Mills Educational Service Cooperative, Beebe, Ark.

Explore science concepts using well-known children’s literature. Come try some hands-on, authentic science investigations.

### The Three Little Pigs: Early Engineers (Gen)

(Preschool–Elementary) Hall D/Room 17, Convention Center

**Robin Little** ([robinlittle.fl@gmail.com](mailto:robinlittle.fl@gmail.com)) and **Charles H. Parsons** ([cparleefer@aol.com](mailto:cparleefer@aol.com)), Douglas L. Jamerson, Jr., Elementary Center for Mathematics and Engineering, St. Petersburg, Fla.

Use fairy tales, nursery rhymes, and rich literature to develop basic engineering concepts for K–5 students. Leave this session with sound age-appropriate engineering ideas.

### How Might Life Evolve on Other Worlds and Life: Here? There? Elsewhere? (Bio)

(Middle Level) Hall D/Room 18, Convention Center

**Pamela K. Harman** ([pharman@seti.org](mailto:pharman@seti.org)), SETI Institute, Mountain View, Calif.

Join the SETI Institute for an introduction to the “bio” side of astrobiology and our science supplemental guides for grades 5–6 and grade 8. Free resources.

### The Honeybee: A Perfect Topic for Inquiry and Content Integration (Gen)

(General) Hall D/Room 28, Convention Center

**Carol L. Jones** ([cjones@mysd.org](mailto:cjones@mysd.org)), Macomb Independent School District, Clinton Township, Mich.

**Elizabeth Niehaus** ([niehaus\\_p@msn.com](mailto:niehaus_p@msn.com)), Niehaus and Associates, South Lyon, Mich.

Presenter: **Anthony Sky** ([asky@ltu.edu](mailto:asky@ltu.edu)), Lawrence Technological University, Southfield, Mich.

The current worldwide problems facing honeybees and their impact on the world economy provide the focus for content integration in this hands-on workshop.

### Move a Wall? Using Nanoscience and Geometry to Measure an Imperceptible Distance (Gen)

(General) Commonwealth B, Loews

**Joe Muskin** ([jmuskin@illinois.edu](mailto:jmuskin@illinois.edu)), University of Illinois at Urbana-Champaign, Urbana

Experience an “unbelievable” lesson that applies concepts used by an AFM (atomic force microscope) when it “sees” atoms to measure how far a wall moves when leaned on.

### A Medical Mystery of Epidemic Proportions (Bio)

(High School–College) Commonwealth C, Loews

**Dina G. Markowitz** ([dina\\_markowitz@urmc.rochester.edu](mailto:dina_markowitz@urmc.rochester.edu)) and **Susan Holt** ([sholtbmn@aol.com](mailto:sholtbmn@aol.com)), University of Rochester, N.Y.

A new strain of *Vibrio cholerae* threatens to cause a global epidemic of cholera. This hands-on case study uses simulated antibody tests and microarrays to explore its emergence. Take home a “lab in a bag” kit.

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# Environmental Science

## [ Your World, Your Turn ]

by Jay Withgott

### Real Issues

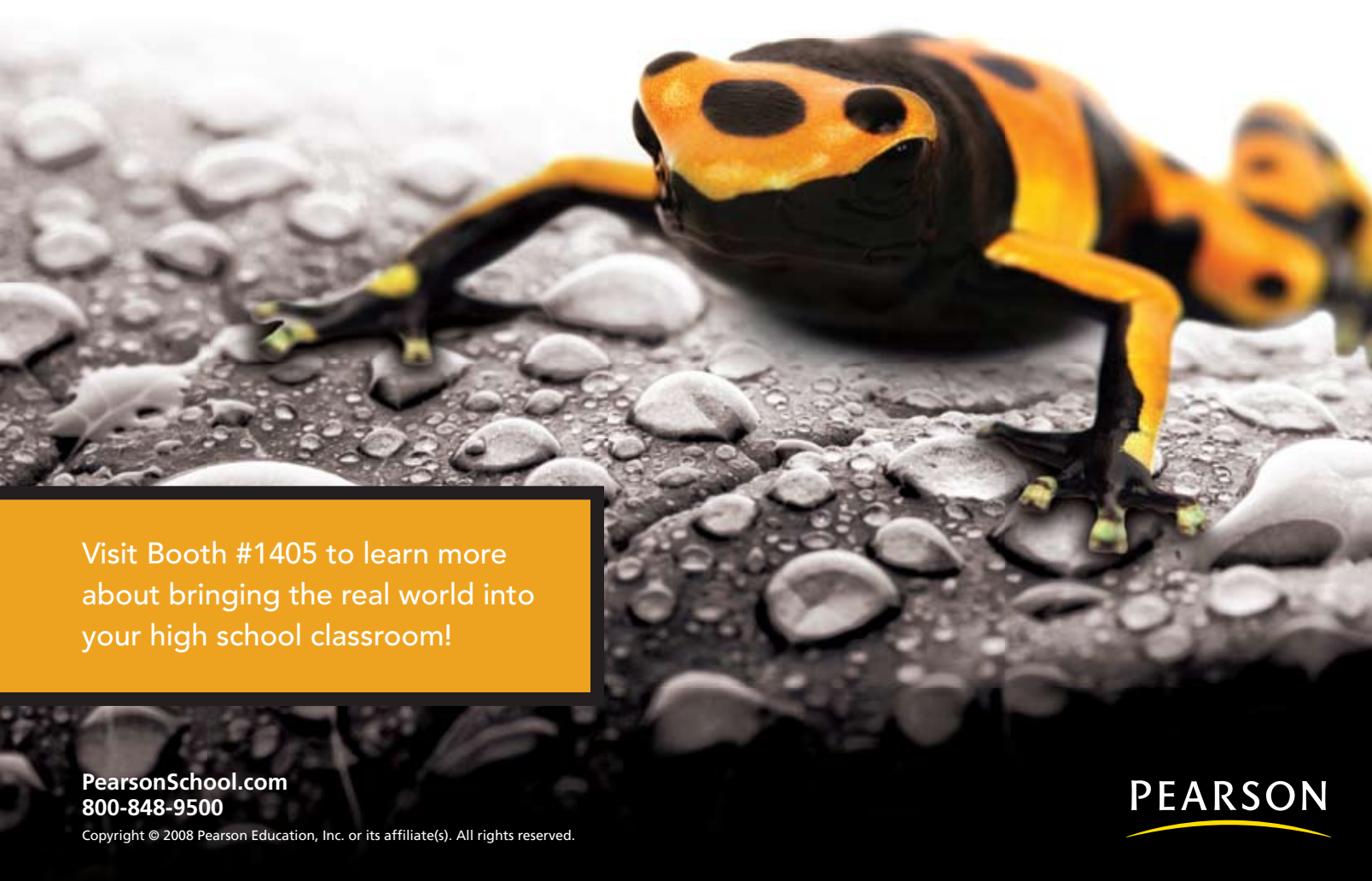
Bring current environmental issues to life with an integrated case-study approach

### Real Data

Supports the science with current and comprehensive data

### Real Choices

Encourage and empower students to think...and act



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PEARSON

**Polymers 1B: Squeeze Them into General Chemistry (Chem)**

(High School–College/Informal Education) Regency B, Loews  
**Brian P. Wright**, Olympia High School, Olympia, Wash.  
 Learn the FUNdamentals of polymeric materials (plastics, rubber, paints, fibers, and natural materials from DNA to cellulose). Try simple labs and strategies for demonstrations, lectures, and environmental learning. Free samples and CD.

**Teaching AP Biology Using Games and Models (Bio)**

(High School) Franklin I, Marriott  
**Kristen R. Dotti** (*kristen\_dotti@catalystlearningcurricula.com*), Christ School, Arden, N.C.  
 Presider: Richmond Edwards, Summit School, Hot Springs, Ark.  
 Water noodle operons, human protein chains, carrying-capacity scurry games—could this be AP science? Come see hands-on learning with rigorous AP content.

**Tree Thinking and Genetic Barcodes (DNA): Solving Real-World Questions in the Classroom (Bio)**

(Middle Level–College) Franklin 4, Marriott  
**Jennifer A. Collins** (*jen@paleobio.org*), Deep Earth Academy, Washington, D.C.

**Allen G. Collins** (*collinsa@si.edu*), National Systematics Laboratory of NOAA Fisheries, Washington, D.C.  
 Learn how scientists use phylogenetics and genetic barcoding to study biological questions and participate in hands-on lessons based on real scientific research.

**Identifying Critical Causes of Gaps Related to Kids in Poverty (Phys)**

(Elementary–High School) Franklin 5, Marriott  
**Diana Nunnaley** (*diana\_nunnaley@terc.edu*), TERC, Cambridge, Mass.  
**Terry Lashley** (*t\_lashley@charter.net*), Learning Curve Educational Consulting, Knoxville, Tenn.  
 Learning needs of children living below the poverty line are often hidden below the radar. A process designed to help teachers identify root causes of low achievement and gaps between groups of children can make solutions visible.

**Nuclear Energy (Gen)**

(Middle Level–High School) Grand Salon B, Marriott  
**Mary Spruill** (*info@need.org*), The NEED Project, Manassas, Va.

Learn about the processes of nuclear energy and participate in activities that enhance students’ learning about this national energy resource.

**Chemistry Inquiry for Kids (Chem)**

(Elementary) Grand Salon C, Marriott  
**Fred Estes** (*festes@nuevaschool.org*), The Nueva School, Hillsborough, Calif.

Chemistry for elementary kids is fun, easy, safe, and rewarding. These inquiry chemistry activities use a lesson design model to build learner independence in students.



**NSTA Press Session: Stop Faking It! Finally Understand LIGHT AND SOUND So You Can Teach It**

(Preschool–Middle Level) Grand Salon D, Marriott  
**Bill Robertson** (*wrobert9@ix.netcom.com*), NSTA Press

Author, Woodland Park, Colo.  
 Join the author of the *Stop Faking It* books for a look at what deep conceptual understanding can do for you. Plus, you get to write secret messages!

**Teaching “Density”: An Inquiry-based Approach for Conceptual Understanding (Phys)**

(Elementary–Middle Level/Informal) Grand Salon J, Marriott  
**Sarah Pedemonte** (*spedemonte@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley  
 Explore the concepts of density through marine science investigations and discussion.

**Miniaturized Assays: Paper Diagnostics for Grades 7–12 (Chem)**

(Middle Level–High School) Grand Salon K, Marriott  
**Kathryn Hollar** (*hollar@seas.harvard.edu*), Harvard University, Cambridge, Mass.

**Marc Abelard** (*marcabelard@gmail.com*), The Engineering School, Hyde Park, Mass.

**Rebekah Ravgiala** (*rav3@comcast.net*), Tyngsborough High School, Tyngsborough, Mass.

We will share lesson plans that use paper-based diagnostics to engage students in scientific inquiry, engineering design, or discussions of the impact of science and engineering on society.



**The Science of *Battlestar Galactica*** (Earth)  
(Elementary–High School) *Freedom G, Sheraton*  
**Kevin Grazier**, NASA Jet Propulsion Laboratory, Pasadena, Calif.

Presider: Stephanie J. Slater (*sslaterwyo@gmail.com*), University of Wyoming, Laramie

Join one of the science contributors on *Battlestar Galactica* and learn how to use contemporary science fiction from the hit TV series to teach astronomy.

**Geoscience Rocks! Discover the Excitement of Geoscience Research in Antarctica** (Earth)  
(General) *Freedom H, Sheraton*

**Betty Trummel** (*boop82@aol.com*), Husmann Elementary School, Crystal Lake, Ill.

Explore geoscience activities and materials produced as a result of an exciting partnership between scientists and educators of the ANDRILL (Antarctic DRILLing) Program.

**NASA Family Science Night: Changing Perceptions One Family at a Time** (Earth)

(Middle Level/Informal Education) *Logans 2, Sheraton*  
**Emilie Drobnes** (*emilie.drobnes@nasa.gov*) and **Sara Mitchell** (*sara.mitchell@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

**Jacob Noel-Storr** (*jake@cis.rit.edu*), Rochester Institute of Technology, Rochester, N.Y.

Learn how to improve or implement effective family astronomy programs that will maximize learning.

**SpaceMath@NASA: Math Problems from Across the Universe!** (Earth)

(Elementary–High School) *Philadelphia North, Sheraton*  
**Sten F. Odenwald** (*sten.f.odenwald@nasa.gov*) and **Elaine Lewis** (*elaine.lewis@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

Presider: Elaine Lewis

Put the “M” back into STEM! Here are some of the most popular math problems from SpaceMath@NASA, featuring front-page discoveries supporting mathematics education (<http://spacemath.gsfc.nasa.gov>).

# NSTA Chapters and Associated Groups Events

## Friday, March 19

### **Dorothy K. Culbert Chapters and Associated Groups Breakfast**

7:00–8:30 AM

*Philadelphia Marriott, 304*

Ticket Required (M-3; \$40)

This event is a great way for NSTA chapters and associated groups leaders to kick off their conference experience!

### **NSTA District Meet and Greet in Honor of Wendell G. Mohling**

2:00–3:30 PM

*Convention Center, Exhibit Hall*

Join us in the exhibit hall for free refreshments, networking, and your chance to get to know your NSTA leadership! Discover ways to get and stay involved in all the workings of NSTA at the local, regional, and national level!



### 8:00–9:00 AM Exhibitor Workshops

#### **Tough Topics in Chemistry and Physical Science: Gas Laws (Chem)**

(Grades 6–12) 112A/B, Convention Center

Sponsor: PASCO

**Geoffrey Clarion**, Rocklin High School, Rocklin, Calif. This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of chemistry and physical science investigations—Boyle's Law. Participate in a standards-based SPARKlab and experience how SPARK-science™ can enhance your teaching practice and improve student understanding of core topics.

#### **Sally Ride Science™ and PASCO: Our Changing Climate (Earth)**

(Grades K–8) 113A, Convention Center

Sponsor: PASCO

**Elizabeth Kennedy**, PASCO, Roseville, Calif. This session highlights the partnership between Sally Ride Science and PASCO. In this hands-on workshop you will participate in a standards-based lab activity exploring the effects of climate change. Be one of the first to see how the Sally Ride Science SPARKlabs can enhance your teaching practice and improve student understanding of core topics.

#### **There Is More to Project-based Science Than Just a Project: (PBIS) (Gen)**

(Grades 6–8) 201A, Convention Center

Sponsor: It's About Time

**Mary Starr**, The University of Michigan, Ann Arbor In Project-Based Inquiry Science (PBIS), projects drive the learning from beginning to end. *Learning by Design*™ guides students in the engineering design cycle in which they become student scientists engaged in sustained projects. PBIS teachers tell us they've "never seen students this excited about science." Watch what happens when students get a chance to flex their creative muscles on projects that they care about—the excitement is contagious...and the learning is sustained.

### 8:00–9:15 AM Breakfast

#### **PBS/WGBH/NOVA Science Matters Breakfast**

(By Invitation Only) Millennium Hall, Loews

### 8:00–9:15 AM Exhibitor Workshops

#### **Put Some Spark into Science Investigations (Gen)**

(Grades 1–6) 108B, Convention Center

Sponsor: Delta Education, School Specialty Science

**Tom Graika**, Consultant, Lemont, Ill.

**Johanna Strange**, Consultant, Richmond, Ky.

Using the science topics of magnetism and electricity, we'll explore how to turn guided investigations into challenge investigations and open inquiries. These strategies will help your students become independent thinkers and inquirers. Take home a complimentary resource packet and related Delta products.

#### **A Closer Look at Biology, Chemistry, and Earth Science Virtual Labs (Gen)**

(Grades 7–10) 109A/B, Convention Center

Sponsor: Frey Scientific, School Specialty Science

**Ken Rainis** and **Lisa Bowman**, Frey Scientific, School Specialty Science, Ann Arbor, Mich.

Learn how virtual labs constitute a "laboratory experience" while exploring unique, object-manipulative, network-capable virtual labs for general and AP subjects. Perform actual lab investigations onscreen and view, record, analyze, and report results. We'll also share ideas for creating custom web content and individualized assessment. Take home software samplers.

### 8:00–9:30 AM Presentation

#### SESSION 1

#### **PDI CSME Pathway Session: Ecology of the Graham Cracker Marine Reserve (Env)**

(Elementary–Middle Level) 403, Marriott

**Beth Jewell** ([beth.jewell@fcp.edu](mailto:beth.jewell@fcp.edu)), West Springfield High School, Falls Church, Va.

Learn what biofilms are and how they are used for research. Simulate biofilms using graham crackers, frosting, sprinkles, and marshmallows, and examine authentic biofilms.

**8:00–9:30 AM Exhibitor Workshops****Bio-Rad Enzymes and Biofuels: Go from Grass to Gas! (AP Lab 2) (Bio)***(Grades 7–College) 103B, Convention Center*

Sponsor: Bio-Rad Laboratories

**Kirk Brown** (*biotechnology\_explorer@bio-rad.com*), Tracy High School, Tracy, Calif.**Stan Hitomi** (*biotechnology\_explorer@bio-rad.com*), San Ramon Valley Unified School District, Danville, Calif.

Need energy? Reveal the power of enzyme kinetics by illustrating the theory through a real-world application to biofuels. Through guided inquiry activities, your students will determine how temperature, pH, the concentration of substrate, and the concentration of enzyme will affect an enzymatic reaction. Throughout the world, biofuels are commonly used to power vehicles, heat homes, and provide fuel for cooking. Can biofuels solve global warming? Let your students decide if this is possible!

**Fantastic Physical Science Demonstrations from Flinn Scientific (Chem)***(Grades 7–12) 103C, Convention Center*

Sponsor: Flinn Scientific, Inc.

**Lori Kessler**, Flinn Scientific, Inc., Batavia, Ill.

Amaze your students with quick demonstrations that teach common physical science topics—sound, color dynamics, energy, pressure, density, rotation, and scientific inquiry. Over a dozen effective demonstrations will be performed.

*Choose an element, create a video*

# It's Elemental!

## Announcing a nationwide video competition for high school students

Encourage your students to accept the challenge and create a 2-3 minute video, based on one of the elements, which will be incorporated into an interactive periodic table on the CHF Web site.

**For competition guidelines, criteria, and prize information, visit [www.chemheritage.org](http://www.chemheritage.org)**



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**A Watershed Performance: Modeling Wetlands**  
(Earth)

(Grades 7–College) 104A/B, Convention Center

Sponsor: WARD's Natural Science

**Little Stevie Bryson** ([sbryson@wardsci.com](mailto:sbryson@wardsci.com)), WARD's Natural Science, Rochester, N.Y.

Despite ongoing efforts, flood damages and risks are increasing in many areas. See a new, exciting interactive classroom demonstration model performed live and explore the impact that wetlands, retention ponds, levees, and other variables have on a watershed drainage system, including creation of a simple hydrograph.

**Wish You Could Do More Physics and Chemistry Labs—But Don't Have the Time and Equipment?**  
(Chem)

(Grades 7–12) 105A/B, Convention Center

Sponsor: Arbor Scientific

**Dwight Putnam**, Whitesboro High School, Marcy, N.Y. Do you find lab time and set-up spaces limited, and drawing on the board just doesn't get the science across? Animated physics and chemistry simulation software provides the learning environment—without the hassle. Learn how physics and chemistry simulation software can revolutionize your classroom.

**Free Teaching Resources from HHMI: Exploring Biodiversity: The Search for New Medicines** (Bio)

(Grades 9–College) 106A/B, Convention Center

Sponsor: Howard Hughes Medical Institute

**Anthony Bertino**, Retired Educator, Scotia, N.Y.

**Patricia N. Bertino**, Scotia, N.Y.

Learn how biodiversity among venomous snails and bacterial communication involving quorum sensing has led to new medical discoveries. Join us for an overview and animations/video highlights of the Howard Hughes Medical Institute's 2009 Holiday Lectures on Science. Free HHMI DVDs, virtual lab CD, and other materials developed by the teacher-presenters will be provided.

**Electric Circuits: Fun with Electricity and Circuits**  
(Gen)

(Grades 5–12) 108A, Convention Center

Sponsor: CPO Science, School Specialty Science

**Patsy Eldridge**, CPO Science, School Specialty Science, Nashua, N.H.

In this hands-on, inquiry-based workshop, participants use electric circuit kits and digital meters to explore the basic concepts of electricity. Gain a thorough understanding of

types of circuits, charge, voltage, current, and resistance during this quest to discover how to build and analyze circuits that perform simple tasks.

**EDVOTEK Biotechnology—New! Achieve Successful PCR in One Lab Session** (Bio)

(Grades 9–College) 110A/B, Convention Center

Sponsor: EDVOTEK

**Jack Chirikjian** ([info@edvotek.com](mailto:info@edvotek.com)), EDVOTEK, Bethesda, Md.

Come learn about our new technology that makes PCR fast, easy, and affordable. Our unique two-step PCR experiment can be completed in one lab session, and our user-friendly EdvoCycler makes PCR affordable for the classroom. Participants are automatically entered into a raffle for a FREE classroom electrophoresis setup (a \$500 value) OR a credit of the same value toward the purchase of an EdvoCycler!

**A to Z Science Activities for the Primary Classroom** (Gen)

(Grades K–2) 111A/B, Convention Center

Sponsor: McGraw-Hill School Education Group

**Frankie Troutman**, Macmillan/McGraw-Hill, Columbus, Ohio

Primary teachers have a tough time fitting in good inquiry science into their busy day. Experience these integrated science activities that will provide quality science plus reinforcement of the basic skills. This interactive workshop will bring out every child's curiosity in science. Handouts and prizes!

**Save the World! Earth Science for Today's Classroom** (Earth)

(Grades K–8) 113B, Convention Center

Sponsor: Pearson

**Michael Wyession**, Washington University in St. Louis, Mo.

Come take a geophysics adventure with Michael Wyession, one of science's foremost experts on Earth's inner structure and the winner of the prestigious Packard Foundation Fellowship. Having mapped various regions of Earth using seismic tomography, Dr. Wyession will show you real-world applications for his latest research and exciting ways to implement them in your own classroom. Take home handouts and free lesson activities.

# Visit the NSTA Avenue, #517 in the Exhibit Hall.

Pick up your “NSTA Roadmap”  
to guide you through member benefits, products, services,  
programs and partners. We’re offering a great gift!

## Share with Others

- **NSTA Membership.** Access high-quality educational materials and professional development opportunities. Pick up a sample journal, your district ribbon, and a free lapel pin. If you’re a student, ask about Student Chapters. If you’d like to volunteer, submit your name for nomination to become a candidate on a committee, review board, or the NSTA Board of Directors and Council.

## Enhance Your Skills

- **NSTA Learning Center.** Select high-quality online learning opportunities to build content knowledge. Use our suite of tools for self-assessment and to document your progress.
- **Web Seminars.** Update your content knowledge with these free, 90-minute, live online presentations. Voice questions and share in rich conversations with the presenters and other educators.
- **SciGuides.** Use these online resources, aligned with the national Standards, to locate lessons organized by grade level and specific content themes.

## Expand Your Mind

- **NSTA Press®** publishes 25 new titles each year that offer professional development to science educators. Visit the Science Bookstore to view new releases, best sellers, and titles that help performance in the classroom. Connect with authors to have your new book signed. Submit your new book idea to <http://mc.manuscriptcentral.com/nstapress>.
- **SciLinks®.** Link to science resources on the internet, with sites recommended by science educators. Find accurate information and effective pedagogy—the best content available online.

## Add Your Voice

- **Science Matters** is a major public awareness and engagement campaign designed to rekindle a national sense of urgency and action among schools and families about the importance of science education and science literacy.

- **The John Glenn Center for Science Education Campaign.** NSTA’s five year, \$43 million national campaign to make excellence in science teaching and learning a reality for all will fund a series of forward-thinking programs and a state of the art facility designed to promote leadership, learning, and advocacy in science education.

## Distinguish Yourself

- **NSTA Awards.** 17 programs offer awards to science teachers, K–College.
- **Toshiba/NSTA ExploraVision®** is a team-based K–12 competition that awards up to \$240,000 in savings bonds annually.
- **Toyota TAPESTRY** awards \$550,000 in grants for science teachers, K–12, each year.
- **THE DUPONT CHALLENGE® Science Essay Competition** is for grades 7–12 with cash prizes and an expenses-paid trip to The Walt Disney World® Resort and the Kennedy Space Center.
- **Siemens We Can Change the World Challenge,** sponsored by Siemens, Discovery Education, and NSTA, offers a national student sustainability competition that encourages students to develop actionable local solutions for a “greener” world.
- **Disney’s Planet Challenge** is a project-based environmental competition for grades 4–6 meant to empower students to make a difference in their homes, schools, and communities.
- The **Conrad Foundation** presents the **2010 Spirit of Innovation Awards,** a competition that challenges teams of high school students to create innovative products in four categories: aerospace exploration, space nutrition, renewable energy and green schools.
- The **NSTA New Science Teacher Academy,** co-founded by the Amgen Foundation, supports science teachers during the often challenging, initial teaching years by enhancing confidence, classroom excellence, and improving teacher content knowledge.

**The Private Eye: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (Gen)**

(General) 113C, Convention Center

Sponsor: Educational Innovations, Inc.

**Kerry Ruef** and **David Melody**, The Private Eye Project, Lyle, Wash.

Dandelions! Crickets! Eyeballs! Use a jeweler’s loupe, everyday objects, simple questions, and thinking by analogy to go REALLY close-up—and develop the essential skills of scientist, writer, and artist in all your students. Explore this acclaimed program for creativity and critical thinking across subjects, K–16 through life. Free loupes, specimens, and lessons.

**Going the Distance in Math (Gen)**

(Grades K–5) 201B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

See how mathematics connects to everyday situations. This workshop explores various units of measurement (area, volume, time, temperature, length, and weight) using Math Out of the Box®, an inquiry-based math curriculum developed at Clemson University. Come experience interactive lessons from the program’s Developing Measurement Benchmarks strand.

**Physics with Vernier (Phys)**

(Grades 9–College) 202A, Convention Center

Sponsor: Vernier Software & Technology

**Rick Sorensen** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Experiments such as sound waves, motion of a cart on a ramp, and video analysis from our popular *Physics with Vernier* lab book will be performed in this hands-on workshop. A variety of new physics accessories will be available to try as well. Conduct these experiments using LabQuest and our new LabQuest Mini.

**Advanced Biology and Biotechnology with Vernier (Bio)**

(Grades 9–College) 202B, Convention Center

Sponsor: Vernier Software & Technology

**Mike Collins** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

This presentation will feature experiments from the newly released second edition of *Advanced Biology with Vernier* lab book. This book contains all 12 experiments recommended for AP Biology, as well as many other advanced labs. The

new SpectroVis Plus, Vernier’s low-cost spectrophotometer/fluorometer and the new White Light Transilluminator will be featured.

**The Case of the Missing Joules (Chem)**

(Grades 8–12) 203A, Convention Center

Sponsor: Adam Equipment Inc.

**Penney Sconzo**, The Westminster Schools, Atlanta, Ga.

If you believe in the Law of Conservation of Energy, then try this thermochemistry experiment that tracks the movement of heat during an experiment incorporating measurement, data collection, data analysis, and drawing conclusions.

**Science and Literacy: Reading and Writing Informational Text (Gen)**

(Grades K–5) 203B, Convention Center

Sponsor: National Geographic School Publishing

**Nell Duke**, Michigan State University, East Lansing

**Carl Benoit** and **Angela Terry**, National Geographic School Publishing, Evanston, Ill.

See firsthand how solid science content can be used in conjunction with reading and writing informational text in science.

**Hands-On Science with Classroom Critters (Bio)**

(Grades K–12) 204A, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Here’s a sure-fire boost to your class—live organisms. Whether you use hands-on curricula (e.g., STC® or FOSS®) or develop your own lessons, animals broaden students’ inquiry-based explorations and increase their interest in science. Participate in fun, simple hands-on activities. Care and handling information presented. Receive free product samples and literature.

**Exploring Feline Anatomy with Carolina’s Perfect Solution® Cats (Bio)**

(Grades 9–College) 204B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Carolina has preserved cats! Perform a guided dissection featuring Carolina’s Perfect Solution Cats and get the “inside story” on the highest-quality preserved specimens available. Accept no substitutes—come experience the Carolina difference.

### Introducing a New Data Logging System for Your Science Lab! (Gen)

(Grades 7–12)

303A/B, Convention Center

Sponsor: Fisher Science Education

**Isaac Rosen**, Fisher Science Education, Pittsburgh, Pa.

A simple and affordable technology solution for a 21st-century classroom. Fisher Science Education is introducing a brand-new flexible data logging system that will help you breathe life into your biology classroom, get a reaction in your chemistry classroom, and accelerate your physics labs. NeuLog modular sensors work independently to collect and record data using self-contained memory or link sensors to collect multiple measurements at once. These sensors are great for use in the classroom or in the field. This workshop is perfect for middle and high school science teachers. Door prizes will be awarded.

### Reading in the 21st Century (Gen)

(Grades K–8)

304, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Leigh Ann Garcia**, Houghton Mifflin Harcourt, Austin, Tex.

Join Houghton Mifflin Harcourt to learn about cutting-edge research and techniques on how students who live in a digital world access print.

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Featuring **David Maiullo**,  
Physics Support Specialist, Rutgers University

David is the co-author of “A Demonstration a Day in Physics,” featured in the New York Times, and star of a physics demo show at the foot of the Brooklyn Bridge. It will be a great evening of “Just Physics.”

**Friday, March 19**

**5:00 - 6:30 pm**

**Meeting Room 114**

**Booth#**

**805, 914**

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fun, Physics, and  
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**Inquiry Teaching and Learning: Chemical Batteries (Chem)**

(Grades 8–10) *Hall D/Room 2, Convention Center*  
Sponsor: LAB-AIDS, Inc.

**Mark Koker**, LAB-AIDS, Inc., Ronkonkoma, N.Y.

This middle level activity series is taken from the Energy unit from the SEPUP Issues and Physical Science course, developed with support from the National Science Foundation and used in classrooms across the country. Participants will construct a wet cell battery that powers a small electric motor, then investigate system variables—such as electrode pairing, electrolyte concentration, and more—that affect its operation. Participants will then examine ways to support the analysis questions, literacy, assessment, and technology associated with the activity. Take away handouts and materials to use in class next week!

**Sciencing the Nation and Making It Count: How Does It Add Up for Singapore? (Gen)**

(Grades K–12) *Hall D/Room 4, Convention Center*  
Sponsor: Marshall Cavendish International Pte Ltd.

**Ling Yuan**, Marshall Cavendish International Pte Ltd., Singapore,

Singapore consistently ranks at the top (1995, 1999, 2003, and 2007) in Trends in International Mathematics and Science Study (TIMSS). How does Singapore do it? Marshall Cavendish Education, the Asian educational publisher, will address Singapore's successful approach and the essential ingredients that have helped it achieve its stellar results.

**8:00–10:00 AM Presentations**

SESSION 1

**PDI TERC Pathway Session: The Times They Are A-Changin': Using Data to Understand Change Over Time (Gen)**

(Elementary–High School) *406, Marriott*

**Andee Rubin** (*andd\_rubin@terc.edu*), TERC, Cambridge, Mass.

Use low-tech and computer-generated representations to analyze change-over-time data such as plant growth, weather, or speed.

SESSION 2

**PDI EDC Pathway Session: Increasing Achievement in Expository Writing and Inquiry-based Science in the Elementary Grades (Gen)**

(Elementary) *411/412, Marriott*

**Betsy Rupp Fulwiler** (*brfulwiler@seattleschools.org*), Seattle (Wash.) Public Schools

Learn research-based strategies for using word banks, graphic organizers, and writing frames to increase student achievement in science and expository writing.

**8:00–11:00 AM Presentations**

SESSION 1

**PDI WestEd Pathway Session: Assessment-centered Teaching: A Reflective Practice (Gen)**

(General) *409, Marriott*

**Jo Topps** (*jtopps@wested.org*), WestEd, Santa Ana, Calif.

Use this portfolio process to design assessment plans before teaching a unit, interpret student work for patterns, and modify instruction/assessment based on student work.

SESSION 2

**PDI FACET Innovations Pathway Session: Using Online Tools to Support Assessment for Learning (Gen)**

(General) *410, Marriott*

**Eric Magi** (*ericm@spokaneschools.org*), Spokane (Wash.) Public Schools

**Jim Minstrell** (*jimminstrell@facetinnovations.com*), FACET Innovations, Seattle, Wash.

**Stamatis Vokos** (*vokos@spu.edu*), Seattle Pacific University, Seattle, Wash.

Support assessment with the tools available at *www.diagnoser.com*. What assumptions about learning are built into the tools? How are teachers using the tools? What are their effects on student learning? How might these tools be used for professional development? Join us as we address these questions and more.





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Friday	7:00 AM–5:00 PM
Saturday	7:00 AM–5:00 PM
Sunday	7:30 AM–12 Noon

**NSTA** National  
Science  
Teachers  
Association

### 8:00–11:00 AM Workshop



#### ISTE: The Tech-based Science Classroom (Gen)

(General) Hall D/Room 1, Convention Center

**Ben Smith** ([ben@edtechinnovators.com](mailto:ben@edtechinnovators.com)), York, Pa.

**Jared Mader** ([jared@edtechinnovators.com](mailto:jared@edtechinnovators.com)), Red Lion (Pa.) Area School District

Learn to integrate technology into a hands-on, inquiry-based science classroom to foster creativity, communication, collaboration, and problem solving. Bring your own laptop or participate with ours in this hands-on workshop.

### 8:00 AM–12 Noon Short Courses



#### Light, Color, and Spectroscopy for Kids (SC-6)

(Elementary–Middle Level) Maestro A/B, Doubletree

Tickets Required: \$24

**John A. Varine** ([varine@pittcon.org](mailto:varine@pittcon.org)) and **Hubert C. Macdonald** ([macdonald@pittcon.org](mailto:macdonald@pittcon.org)), Spectroscopy Society of Pittsburgh, Pa.

For description, see Volume 1, page 61.



#### NSTA Press: Lecture-Free Teaching: A Learning Partnership Between Science Educators and Their Students (SC-7)



(Middle Level–College, Supervision) Ormandy East, Doubletree

Tickets Required: \$60

**Bonnie S. Wood** ([bonnie.s.wood@umpi.edu](mailto:bonnie.s.wood@umpi.edu)), University of Maine at Presque Isle

For description, see Volume 1, page 61.

### 8:00 AM–12:30 PM NSTA Symposium

#### FDA/NSTA Symposium: Teaching Nutrition Science and the Food Label (SYM-2)

(Grades 5–12) Franklin 12, Marriott

Tickets Required: \$54

**Crystal Rasnake** and **Blakeley Denking**, U.S. Food and Drug Administration, College Park, Md.

**Elena Stowell**, Kentwood High School, Covington, Wash. **Ken Bingman**, Blue Valley West High School, Overland Park, Kans.

**Mimi Cooper**, Consultant, Green Cove Springs, Fla.

For description, see Volume 1, page 57.

### 8:30–9:00 AM Presentations

#### SESSION 1

#### Enhancing Introductory Physics with Space Studies Topics (Phys)

(High School–College)

Regency C2, Loews

**Pete K. Schoch** ([pschoch@nac.net](mailto:pschoch@nac.net)), Sussex County Community College, Newton, N.J.

Incorporate real-world examples from the areas of geodesy, gravitation, and thermodynamics to enhance the teaching of introductory physics.

#### SESSION 2

#### ARMADA Experience in Australia (Bio)

(General)

Franklin 9, Marriott

**Zamaria Rocio**, San Diego (Calif.) Unified School District

A teacher who traveled to Australia to work with a scientist on the Great Barrier Reef will share how she brought the experience back to her classroom.

**8:30–9:30 PM Featured Presentation****Appreciating the “Human Factor” in Science Education (Gen)***(General)*

201C, Convention Center

*Sponsored by Sigma Xi*

**Sharnnia Artis**, Human Factors Engineer and Author, Fairborn, Ohio

President: Barbara Pietrucha (*bpietrucha418@aol.com*), Consultant, Bradley Beach, N.J.

President Obama has pledged to put the United States back in the international forefront with respect to technological advancements. To do so we must compete with countries such as China and India, who are producing twice as many scientists as the U.S. To thrive in such a global economy, U.S. science educators must consider the “human factor.” In the scientific arena, human factors is a unique discipline that applies what we know about people to the design of equipment people use and systems in which people function. Using teachers, students, and technology as examples of elements in an educational system, this presentation will uncover the “human factor” and successful practices to promote excellence in science education.

*Sharnnia Artis is a human factors engineer and author of Moving from Ordinary to Extraordinary: The Teen’s Guide to High School Success. Educated in the public schools of Portsmouth and Chesapeake, Virginia, she graduated in the top one percent of her high school class with a 4.2 grade point average and over \$100,000 in scholarships and awards for the college of her choice. She now holds a PhD in Industrial and Systems Engineering from Virginia Tech. She has served as president of the Virginia Tech Chapter of the National Association for the Advancement of Colored People (NAACP) as well as president and national public relations chairperson of the National Society of Black Engineers (NSBE). Dr. Artis continues to be an advocate for developing student-centered solutions to promote and encourage excellence.*

**8:30–10:30 AM Meeting****Aerospace Programs Advisory Board Meeting**

Conference Suite III, Marriott

**8:30–11:30 AM Exhibitor Workshop****Using Student Science Notebooks to Assess Student Learning (for Experienced Users Grades 5–8) (Gen)***(Grades 5–8)*

107A/B, Convention Center

Sponsor: Delta Education, School Specialty Science–FOSS  
**Jessica Penchos**, Lawrence Hall of Science, University of California, Berkeley

**Virginia Reid**, Consultant, Olympia, Wash.

**Chris Sheridan**, Consultant, Sammamish, Wash.

Now that you’re using student science notebooks, what more can you do with them? Student work samples and the FOSS Middle School Curriculum will be used to show how to engage students in assessment practices that advance student learning. We’ll share assessment strategies, next-step strategies, and sample FOSS materials.

**9:00–10:30 AM Exhibitor Workshop****Bio-Rad—Is There Molecular Evidence for Evolution? Protein Profiler Kit (Bio)***(Grades 7–College)*

103A, Convention Center

Sponsor: Bio-Rad Laboratories

**Essy Levy** (*biotechnology\_explorer@bio-rad.com*) and **Sherri Andrews** (*biotechnology\_explorer@bio-rad.com*), Bio-Rad Laboratories, Hercules, Calif.

In this hands-on workshop you will generate protein profiles from distant and closely related species of fish using gel electrophoresis. Test the hypothesis that protein profiles are indicators of evolutionary relatedness and construct cladograms from your own gel results. Learn about proteomics and explore the central mantra of biology: DNA>RNA>Protein>Trait.

**9:00 AM–12 Noon Short Course****How to Build a Classroom Planetarium (SC-8)***(General)*

Concerto A, Doubletree

**Tickets Required: \$29**

**Jeff Adkins** (*astronomyteacher@mac.com*), Deer Valley High School, Antioch, Calif.

For description, see Volume 1, page 62.

**9:00 AM–5:00 PM Exhibits**

Exhibit Hall B, Convention Center

Come see the most up-to-date science textbooks, software, equipment, and other teaching materials. Some exhibitors will offer materials for sale.

**9:00 AM–5:00 PM Meeting**

**NSTA International Lounge**

*Registration II, Marriott*

Please stop by the NSTA International Lounge to relax or meet colleagues while you're at the conference.

**9:30–10:00 AM Presentation**

**SESSION 1**

**The RISE Project: Taking Students to New Heights (Earth)**

*(Middle Level–High School)*

*Freedom F, Sheraton*

**John D. Ophus**, University of Northern Iowa, Cedar Falls

**Michael Odell** (*michael\_odell@uttyler.edu*), The University of Texas at Tyler

Students from middle and high schools in eastern Texas were involved in creating satellites that could travel in excess of 100,000 feet.



**9:30–10:30 AM Presentations**

**SESSION 1**

**NSTA Avenue Session: How to Write a Successful Grant Proposal (Gen)**

*(Elementary–High School)*

*307, Convention Center*

**Eric V. Crossley** (*ecrossley@nsta.org*), Director, Science Education Competitions, NSTA, Arlington, Va.

Learn the keys to successful grant proposal writing. We will offer tips for improving a proposal, cover what to avoid, and provide you with information from a judge's perspective and a grant winner's perspective.

**SESSION 2**

**Supporting English Language Learners (Gen)**

*(General)*

*Hall D/Room 11, Convention Center*

**Julie K. Jackson** (*jj32@txstate.edu*), Texas State University–San Marcos

Here are some practical tools and strategies that allow science teachers to successfully support English language learners. We will focus on the visual and experimental aspects of hands-on and inquiry-based science that naturally support language development.

**SESSION 3**

**Arts Integration: The Science of Learning the Learning of Science (Gen)**

*(Preschool–Elementary)*

*Hall D/Room 14, Convention Center*

**Anne R. Tapp**, Saginaw Valley State University, University Center, Mich.

Arts integration through drama/theater—practical, standards-based elementary science that uses an exploratory and experiential technique. Sound pedagogy is supported by practitioner-oriented activities.

**SESSION 4**

**Once Upon a Time: Moving from Fairy Tales to Science and Engineering (Gen)**

*(Elementary)*

*Hall D/Room 16, Convention Center*

**Kimberly Denard** (*science@denard.org*), Miles Davis Magnet Academy, Chicago, Ill.

Using familiar fairy tales, we show how students are engaged in engineering and the science behind it.

**SESSION 5****Ecology Education: Using Student Imagination and the Study of Ecology to Support Preschoolers' Understanding of Science Concepts (Gen)***(Preschool–Elementary) Hall D/Room 17, Convention Center***Katharine L. Adams** and **Ellen L. Adams**, Fellowfield Farmhouse School, Milan, Mich.

Discover 10 essentials for a content-rich preschool ecology program and plan your own ecology unit.

**SESSION 6****Connecting Math and Science Through Computerized Data Collection (Gen)***(Elementary–Middle Level) Hall D/Room 20, Convention Center***Dan Vincent** (*dvincent@uco.edu*), University of Central Oklahoma, Edmond

In these activities students collect, organize, and analyze data using technology, math, and science concepts. We will share examples of student work, including collecting data from computerized probes.

**SESSION 7****Science Research Intermediate-Level Style (Gen)**  
*(Middle Level) Hall D/Room 22, Convention Center***Joan S. Wagner** (*jsw2012@aol.com*), Focus on Learning, Saratoga Springs, N.Y.

President: Kathleen Chesmel, New Egypt High School, New Egypt, N.J.

The director of a regional Intel International Science and Engineering Fair will share a research science curriculum developed for her intermediate-level students.

**SESSION 8****Windows on the Classroom (Gen)**  
*(General) Hall D/Room 25, Convention Center***Sara B. Sweetman** (*sara\_sweetman@mail.uri.edu*), University of Rhode Island, Narragansett**Adam M. Scott** (*ascott@egsd.net*), Archie R. Cole Middle School, East Greenwich, R.I.

Celebrate your master teachers while creating a collaborative learning environment. Learn how to set up district-wide support for viewing inquiry and best practice instruction in model classrooms.



## Come to FLINN SCIENTIFIC'S *Morning of Chemistry*

### Chemistry Demonstration Carnival!

*By Jeff Bracken, Westerville North High School, Westerville, OH*

Step Right Up! Come One, Come All! Discover how you can inspire your students with these great demonstrations. Lively learning is guaranteed! See 20 of Jeff Bracken's newest and most effective demos including "The Flaming Ferris Wheel" and "Fuel Cell Football" plus "Exploding Eggs" and the "Giant Alcohol Cannon." Bring your science-teaching friends to this free, must-see event.

Jeff's creative, entertaining style helps students realize that learning chemistry can be fun! Engaging games, music and glowing lights are all part of this spirited Chemical Demonstration Carnival. You'll learn new and exciting ways to present these innovative demonstrations your students will never forget!

Come to Flinn Scientific's *Morning of Chemistry*.  
Handouts will be provided.

**Friday, March 19, 2010 • 10:00 a.m. – 11:45 a.m.**

**Room 114/Auditorium, Pennsylvania Convention Center**

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**SESSION 9**

**Engaging Formative Assessments for Science Teachers (Gen)**

(General) Hall D/Room 26, Convention Center

**Barbara J. Nealon** (*nealon@lvc.edu*), Lebanon Valley College and Susquehannock High School, Glen Rock, Pa.

Fill your bag of tricks with engaging formative assessments for the science classroom.

**SESSION 10**

**The Nuts and Bolts of Science Coaching (Gen)**

(General) Hall D/Room 27, Convention Center

**Thomas T. Peters** (*tpeters@clermson.edu*), South Carolina Mathematics & Science Unit, Clemson

**Nan Dempsey** (*dempsey@scsc.edu*), South Carolina Mathematics & Science Unit, Duncan

Thinking of coaching as a strategy to improve science instruction? We'll share lessons we've learned in designing, implementing, and refining a K–8 science coaching initiative.

**SESSION 11**

**Technology Rocks: Developing and Using Interactive Curriculum Maps in the Science Classroom (Gen)**

(General) Hall D/Room 30, Convention Center

**Kim Day** (*kim.day@fcps.org*), Frederick County Public Schools, Walkersville, Md.

**Carl B. Bilotta** (*carl.bilotta@fcps.org*), Deer Crossing Elementary School, New Market, Md.

Presider: Kim Day

Use technology to create interactive curriculum maps that provide electronic lesson plans, help teachers connect instruction to standards, and provide audiovisual aids. Handouts provided!

**SESSION 12**

**CSSS Session: Potpourri of Instructional Strategies for Integrating Content Areas (Gen)**

(General) Anthony, Loews

**Ann A. Wilson** (*ann.wilson@la.gov*), Louisiana Dept. of Education, Baton Rouge

Explore a variety of instructional strategies that integrate content areas and address multiple learning levels and styles.

**SESSION 13** (two presentations)

(College/Informal Education) Commonwealth A, Loews

**SCST Session: Science and Math Education for the Adult Urban Student: These Aren't Your Parents' College Courses! (Gen)**

**Heide Hlawaty** (*hhlawaty@mcny.edu*) and **Richard Grallo** (*rgrallo@mcny.edu*), Metropolitan College of New York, N.Y.

In our urban studies program, thematic science and mathematics courses improve the scientific literacy and numeracy of the nontraditional adult urban learner.

**SCST Session: Why Can't You Just Tell Me What I Need to Know? A Student Teaching Experience in Inquiry (Bio)**

**Jason Whalen**, Indiana University of Pennsylvania, Indiana

During my student teaching I had exceptionally positive results with inquiry teaching. Student grades increased as my own frustrations vanished.

**SESSION 14**

**AMSE Session: Integrating Multicultural Education into Science Through Folklore and Herbal Medicine (Bio)**

(General) Commonwealth D, Loews

**Marti Schriver** (*mschriver@georgiasouthern.edu*), Georgia Southern University, Statesboro

**Josephine Shireen Desouza**, Ball State University, Muncie, Ind.

Learn how we integrated local native culture in Georgia and international cultures from India into the science curriculum. Examples include folklore and native medicines.

**SESSION 15** (two presentations)

(General) Congress B, Loews

**Supporting Student Teachers to Utilize Web 2.0 for Teaching Science in Urban Classrooms (Gen)**

**Rashmi Kumar** (*rashmik@dolphin.upenn.edu*), University of Pennsylvania, Philadelphia

Learn how student teachers placed in urban classrooms incorporated Web 2.0 in their collaborations with peers regarding inquiry-based science curricula. We'll also share ideas for mitigating networking limitations.

**SAVE Science: Learning What Students Really Know About Science Using Virtual Environments (Gen)**

**Diane Jass Ketelhut** ([djk@temple.edu](mailto:djk@temple.edu)) and **Catherine C. Schifter**, Temple University, Philadelphia, Pa.

We will demonstrate a series of computer game–based modules to assess urban middle school students’ understanding of science content and inquiry. We’ll also look at data on effectiveness.

**SESSION 16****NSELA Session: From the United States to Thailand: The Globalization of an Effective Professional Development Model (Gen)***(General)**Congress C, Loews*

**Timothy A. Laubach** ([laubach@ou.edu](mailto:laubach@ou.edu)) and **Mark A. Nanny** ([nanny@ou.edu](mailto:nanny@ou.edu)), University of Oklahoma, Norman

We will examine the format of a theory-based professional development model of knowledge construction and its transferability to a group of Thai high school teachers.

**SESSION 17****Environmental Economics: Connecting Science, Math, and Social Studies (Gen)***(Elementary/Supervision)**Regency C1, Loews*

**Charles G. Tansey** ([tanseycg@kalamazoo.k12.mi.us](mailto:tanseycg@kalamazoo.k12.mi.us)) and **Matthew A. Johnson** ([johnsonma@kalamazoo.k12.mi.us](mailto:johnsonma@kalamazoo.k12.mi.us)), Edison Environmental Science Academy, Kalamazoo, Mich.

Presider: Charles G. Tansey

Using the theme of environmental economics, our school was able to improve interest in learning, enhance our district-mandated curriculum, and improve achievement.

**SESSION 18****Preparing Urban AP Teachers (Gen)***(High School/Supervision)**Washington B, Loews*

**Allison Scheff** ([allison.scheff@umb.edu](mailto:allison.scheff@umb.edu)), University of Massachusetts, Boston

We adapted the College Board APSI to an urban cohort of teachers. Local teachers were paired with consultants, who then documented the ways the course was amended to meet the needs of urban AP teaching.

## Build your content knowledge through NSTA’s Online Learning Center

- **Quality**—The Learning Center’s online professional development materials have been researched, field-tested, and reviewed for content, accuracy and pedagogy by experts.
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- **Custom Designed for the Individual**—Teachers and/or administrators can create a clear PD plan designed specifically for an individual’s needs and learning preferences.
- **Convenient, Accessible, and Economical**—Teachers access the Learning Center 24/7 and work on building content knowledge at their personal convenience. No travel costs, no substitute teacher costs, no class time missed.
- **Research-based and Proven to Build Content Knowledge**—Teachers who participated in PD through the Learning Center showed significant content knowledge gains and identified themselves as “very confident” in their ability to teach the science content learned.\*

To view, try, and buy individual resources visit: <http://learningcenter.nsta.org/>

To purchase unlimited access to the NSTA Learning Center for your school or district, contact us at: 1-800-722-6782 or [sales@nsta.org](mailto:sales@nsta.org)

\*Formative Research conducted by external experts to ensure scientific accuracy and credibility. Research Results to be published in an upcoming article in the Journal of Science Education and Technology titled “Evaluation of Online, On-Demand Science Professional Development Materials Involving Two Different Implementation Models.”



SESSION 19

**Science and Journalism: Mini-Lessons That Bridge the Gap** (Gen)

(Middle Level–High School) 302/303, Marriott

**Laura Pearce** ([laura\\_1249@yahoo.com](mailto:laura_1249@yahoo.com)), University of Missouri, St. Louis

Our NSF-funded project has identified a series of challenges in encouraging high school students to write science articles. I'll share what we have discovered.

SESSION 20

**Testing Is Detestable and Grading Is Degrading** (Phys)

(General) 305/306, Marriott

**John H. Marean**, 1962–1963 NSTA President, and University of Calgary, Alta., Canada

Presider: **Alona M. King** ([amking.od@gmail.com](mailto:amking.od@gmail.com)), Idaho Falls, Idaho

Tests and our evaluation of the outcome may be of greater importance for measuring the quality of the instruction than the progress of the students.

SESSION 21

**PDI LHS Pathway Session: Integrating Sustainability in the Science Classroom** (Env)

(Middle Level–High School) 404, Marriott

**John Howarth** ([john\\_howarth@berkeley.edu](mailto:john_howarth@berkeley.edu)) and **Laura Lenz**, Lawrence Hall of Science, University of California, Berkeley

Learn how to make science come alive in the classroom with sustainability issues.

SESSION 22

**PDI Skills Pathway Session: Implementing a Framework for 21st-Century Science Learning** (Gen)

(High School) 405, Marriott

**Lauren Goldenberg** ([lgoldenberg@edc.org](mailto:lgoldenberg@edc.org)), Education Development Center, Inc., New York City, N.Y.

The Partnership for 21st Century Skills says that students need to go beyond just learning today's academic context to develop critical-thinking and problem-solving skills, communications skills, creativity and innovation skills, collaboration skills, contextual learning skills, and information and media literacy skills. I'll share insights from the Center for Children and Technology on understanding 21st-century skills and their impact on STEM education.

SESSION 23

**Now That I've Got This Cat, What Do I Do with It?** (Bio)

(High School) Franklin 3, Marriott

**Deb Haase**, Air Academy High School, U.S. Air Force Academy, Colo.

**Michael McGarry** ([mike\\_w\\_mcgarryjr@mcpsmd.org](mailto:mike_w_mcgarryjr@mcpsmd.org)), Blake High School, Silver Spring, Md.

Explore some low-hassle and nontraditional ways to help you wrap up your dissection unit.

SESSION 24

**Your School's FlexCam Belongs in the Physics Lab** (Phys)

(Elementary–High School) Franklin 6, Marriott

**David P. Beier** ([dbeier@barstowschool.org](mailto:dbeier@barstowschool.org)), The Barstow School, Kansas City, Mo.

Find 40 applications of your school's FlexCam for your physical science and physics classroom. Seventy-five free video clips on disc to use in your class!

SESSION 25

**Women Exemplars: Using Personal Science Stories to Promote Science Interest and Literacy in the High School Classroom** (Bio)

(High School) Franklin 9, Marriott

**Laura A. Koehl** ([lkoehl@insightbb.com](mailto:lkoehl@insightbb.com)), Notre Dame Academy, Covington, Ky.

Oral histories of contemporary women scientists are incorporated into a biology curriculum to help students connect their science learning with real-world scientific experience and research.

SESSION 26

**Demos for the Holidays! Excite Students with Chemical Demonstrations** (Chem)

(High School) Franklin 10, Marriott

**Sherri C. Rukes** ([scrukes@comcast.net](mailto:scrukes@comcast.net)), Libertyville High School, Libertyville, Ill.

Spice up your classroom with these demonstrations, especially around the holidays. Handouts.



**SESSION 27****NOAA Climate Symposium Session: The Coastal Impacts of Climate Change: Sea Level Rise (Earth)***(Informal Education)**Franklin 11, Marriott*

**William Sweet** ([william.sweet@noaa.gov](mailto:william.sweet@noaa.gov)), NOAA National Ocean Service, Silver Spring, Md.

Learn how the mathematics, science, and technology associated with sea level prediction and monitoring can be used to teach about climate change.

**SESSION 28****Informal Science Day Session: Portal to the Public: Building Partnerships Between Scientists and Informal Science Educators (Gen)***(General)**Grand Salon E/F, Group 1, Marriott*

**Dennis Schatz** ([schatz@pacsci.org](mailto:schatz@pacsci.org)), Pacific Science Center, Seattle, Wash.

Portal to the Public develops programs in which scientists interact face-to-face with students. Learn how this program

works to engage, excite, and provide an outstanding role model for students.

**SESSION 29****Informal Science Day Session: Learning Inquiry Science Beyond the Classroom Through the Study of Animals (Bio)***(Informal Education)**Grand Salon E/F, Group 2, Marriott*

**Sue Dale Tunncliffe** ([lady.tunncliffe@mac.com](mailto:lady.tunncliffe@mac.com)), University of London, U.K.

Presider: Terri Stern ([terri.stern@yale.edu](mailto:terri.stern@yale.edu)), Yale Peabody Museum of Natural History, New Haven, Conn.

Students can learn from animal exhibits, whether live in zoos and nature centers or as models or preserved specimens in museums.

# TEACHERS IN GEOSCIENCES

Mississippi State University offers a unique and exciting M.S. degree program through distance learning—the Teachers in Geosciences (TIG) program. Students who successfully complete this two-year, 12-course, 36-hour curriculum are awarded an M.S. degree in Geosciences. The core courses in meteorology, geology, hydrology, oceanography, planetary science and environmental geoscience are taught via the internet. Over 300 students from across the country and around the world are enrolled.



Arizona field course

Program highlights include:

- DVD lectures created by Geoscience faculty
- course materials presented online
- Master of Science degree earned in two years
- little time spent away from home (8-10 days in the field)
- MSU in-state tuition rate offered to all students

**GEOSCIENCES DISTANCE LEARNING PROGRAMS**  
[distance.msstate.edu/geosciences](http://distance.msstate.edu/geosciences)

Mississippi State University is fully accredited by the Southern Association of Colleges and Schools (SACS). Prospective students should check with the Department of Education in their states for local certification policies.



**MISSISSIPPI STATE**  
UNIVERSITY

*Division of Academic Outreach & Continuing Education*

Mississippi State University is an equal opportunity employer.

**SESSION 30**

**Informal Science Day Session: Seven Great Virtual Lab Exemplars from the NSDL Collection (Gen)**

(General) *Grand Salon E/F, Group 3, Marriott*

**Robert P. Payo** (*rpayo@ucar.edu*) and **Susan Van Gundy** (*vangundy@ucar.edu*), The National Science Digital Library, Boulder, Colo.

**Jennifer Fee** (*jms327@cornell.edu*), Cornell Lab of Ornithology, Ithaca, N.Y.

Discover free interactive resources—virtual labs, citizen science activities, animations, and more—from *NSDL.org*.

**SESSION 31**

**NSTA Student Chapter Action Session (Gen)**

(College) *Grand Salon G, Marriott*

**Kate A. Baird** (*kbaird@iupuc.edu*), NSTA Director, District X, and Indiana University-Purdue University, Columbus-

**Deborah L. Hanuscin** (*hanuscind@missouri.edu*), University of Missouri, Columbia

**Bambi L. Bailey** (*bambi\_bailey@uttyler.edu*), The University of Texas at Tyler

**Eryn A. Norton** (*eryn.norton@gmail.com*), Fort Hays State University, Hays, Kans.

Presider: Bambi L. Bailey

This roundtable features reports from NSTA student chapters about their activities in professional development, service projects, and fund-raising. All student chapters are invited to participate.



**SESSION 32**

**SEPA/APAST Share-a-Thon (Gen)**

(Elementary–Middle Level) *Grand Salon H, Marriott*

**Conni Crittenden** (*crittec@gowcs.net*), Society of Presidential Awardees Science Representative, Williamston, Mich.

**David L. Brock** (*brockda@rpcs.org*), Roland Park Country School, Baltimore, Md.

**Helen Chang** (*helenchang47@gmail.com*), Millstone River School, Plainsboro, N.J.

**Jessie A. Good** (*goodj@kohler.k12.wi.us*) and **Dana Krejcarek** (*krejcarekd@kohler.k12.wi.us*), Kohler High School, Kohler, Wis.

**John D. Hunt** (*jhunt@mc.edu*), Mississippi College, Clinton

**Kathy Renfrew** (*kathy.renfrew@state.vt.us*), Vermont Dept. of Education, Montpelier

**Steve Rich** (*bflywriter@comcast.net*), Georgia Dept. of Education, Atlanta

**Deb Wickerham** (*dwickerham@findlaycityschools.org*), Chamberlain Hill Intermediate School, Findlay, Ohio

Presidential Awardees share favorite inquiry-based lessons. Handouts and great ideas to take back to your classroom!

**SESSION 33**

**Making Chemical Demonstrations a Learning Experience for All Students (Chem)**

(High School) *Grand Salon L, Marriott*

**Scott F. Balicki** (*sbalicki@gmail.com*) and **Kathleen R.**

**Markiewicz** (*kmarkiewicz@boston.k12.ma.us*), Boston Latin School, Boston, Mass.

Make chemical demonstrations meaningful learning experiences that provide opportunities for formative assessment aligned with research on how students learn science. We'll share a model.

**SESSION 34**

**NSTA High School Biology Share Session (Bio)**

(High School) *Independence A, Sheraton*

**Kristen Kohli** (*kristenk@buhisd.org*), Estrella Foothills High School, Goodyear, Ariz.

Presiders: Jean Tushie (*jtushie@comcast.net*), NSTA Director, High School Science Teaching, and Eden Prairie High School, Eden Prairie, Minn., and Peter M. Mecca (*meccap@fccps.org*), George Mason High School, Falls Church, Va.

The NSTA High School Committee highlights excellent presenters sharing inquiry and assessment through best practices, teaching tips, labs, and activities. Join us for some great biology ideas!

**SESSION 35****Learning Science in Informal Environments (Gen)***(General)**Independence B, Sheraton*

**Jennifer L. Childress** ([childressj@si.edu](mailto:childressj@si.edu)), National Science Resources Center, Washington, D.C.

Hear the latest research from the National Research Council about improving science education through media, libraries, museums, nature centers, and informal science environments.

**SESSION 36** (two presentations)*(General)**Independence C, Sheraton***Green Schools as Tools for Improving Learning (Env)**

**Glenn A. McKnight** ([mcknight@mtsd.org](mailto:mcknight@mtsd.org)), James S. Wilson Middle School, Erie, Pa.

**Victoria A. Kazmerski** ([vak1@psu.edu](mailto:vak1@psu.edu)), **Janice Jerome**, and **Danielle Wilson** ([djw5069@psu.edu](mailto:djw5069@psu.edu)), Penn State Erie, The Behrend College, Erie, Pa.

Learn how to teach about green schools using the building and inquiry methods. Assessments show how effective these methods can be while also enhancing student attitudes.

**GreenSchools!****(Env)**

**Al Stenstrup** ([astenstrup@forestfoundation.org](mailto:astenstrup@forestfoundation.org)) and **Jackie Stallard** ([jstallard@forestfoundation.org](mailto:jstallard@forestfoundation.org)), American Forest Foundation, Washington, D.C.

GreenSchools! is a new program from the American Forest Foundation that connects and builds on the success of Project Learning Tree (PLT) schools, PLT classroom activities, and GreenWorks! service learning grants. Learn how to get your school involved.

**SESSION 37****Alien Plants****(Env)***(Elementary–Middle Level)**Independence D, Sheraton*

**Meredith B. Sullivan**, Pinnacle School, Bloomington, Ind.

Natives vs. invasives! Class teams work with local scientists and community partners to study native plant species, complete field studies, remove invasive exotics, and monitor the results.

Get your  
book signed!

## The Science Bookstore

### Author Signings

**Thursday, March 18\***

2:00–3:00 Page Keeley

**Friday, March 19\***

1:00–2:00 Bill Robertson

2:00–3:00 Dennis Smithenry and John Gallagher-Bolos

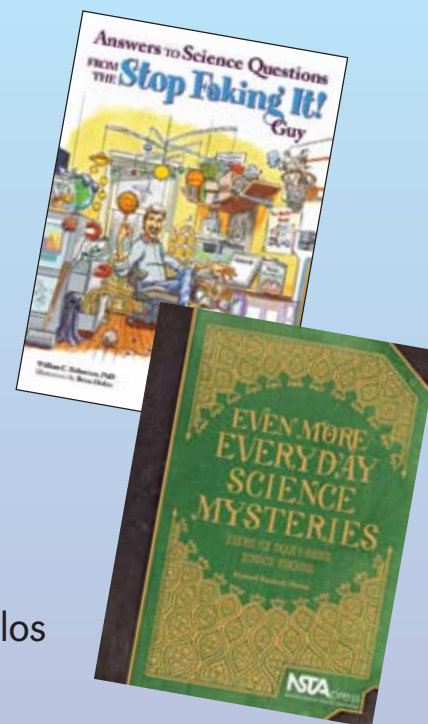
**Saturday, March 20\***

10:00–11:00 Anne Tweed

1:00–2:00 Neil Cornins

1:00–2:00 Richard Konicek-Moran

\*Times are tentative, check the NSTA Science Bookstore for more information.



**NSTA**press  
National Science Teachers Association

## 9:30–10:30 AM Workshops



### Increasing Appreciation for Science in Six Reservation Schools (Gen)

(Elementary–High School) Hall D/Room 5, Convention Center

**Maurice Godfrey** ([mgodfrey@unmc.edu](mailto:mgodfrey@unmc.edu)) and **Kim Soper** ([sepa@unmc.edu](mailto:sepa@unmc.edu)), University of Nebraska Medical Center, Omaha

Presider: Maurice Godfrey

We have developed a variety of hands-on science activities to meet the needs of students in remote rural communities.



### How Big Are YOUR Feet? Measuring Your Ecological Footprint (Gen)

(General) Hall D/Room 6, Convention Center

**Laurel L. Kohl** ([kohl1@easternct.edu](mailto:kohl1@easternct.edu)), Eastern Connecticut State University, Willimantic

How much of our world resources do you (and your students) use? This lesson from [www.ctenergyeducation.com](http://www.ctenergyeducation.com) bridges all core subjects, grades 4–16, and it's fun, too!

### Paper Engineering: Making 3-D Pop-Up Mechanisms (Phys)

(Elementary) Hall D/Room 9, Convention Center

**Gary Benenson** ([benenson@ccny.cuny.edu](mailto:benenson@ccny.cuny.edu)), City College of New York, N.Y.

Investigate how pop-ups work and use reverse engineering to design your own. Learn how these paper mechanisms illustrate principles of force, motion, systems, and simple machines.

### Making It Messy: Connecting “Hands On” to “Minds On” Through an Engaging, Interactive Process (Gen)

(Elementary) Hall D/Room 15, Convention Center

**Christopher R. Horne** ([chris.horne@fcps.org](mailto:chris.horne@fcps.org)), Frederick County Public Schools, Frederick, Md.

**Dawn Getzandanner**, Valley Elementary School, Jefferson, Md.

Explore ways to connect inquiry-based classroom experiences to national standards, and learn techniques to help students better understand and use specialized science vocabulary. Handouts.

### Keeping Our Body Systems Healthy (Bio)

(Elementary–Middle Level) Hall D/Room 18, Convention Center

**Pamela A. Koch** ([pkoch@tc.edu](mailto:pkoch@tc.edu)), Teachers College, Columbia University, New York, N.Y.

**Aleta Damm** ([adammm@jpsmail.org](mailto:adammm@jpsmail.org)), Middle School at Parkside, Jackson, Mich.

Heart disease is the number one killer in the United States. Learn creative ways to engage students in understanding the science behind healthy hearts.

### Multisensory Science: A Polymers Workshop for the Visually Impaired (Chem)

(Elementary–Middle Level/Informal) Hall D/Room 19, Conv. Center

**April Hill** ([aah15@psu.edu](mailto:aah15@psu.edu)), The Pennsylvania State University, University Park

Explore polymer structures and the effect of cross-linking with these kinesthetic and hands-on activities. We'll also look at interesting properties of cross-linked polymers.

### All Systems Go! (Gen)

(Middle Level) Hall D/Room 21, Convention Center

**Regina B. Snyder** ([resnyder@ccisd.us](mailto:resnyder@ccisd.us)), Driscoll Middle School, Corpus Christi, Tex.

Learn how to integrate graphic organizers and hands-on activities for use with technology. We'll look at unifying concepts for integrating basic ideas about systems, order, and organization.



### Engaging Students with Math and Science Through Global Issues (Gen)

(General) Hall D/Room 29, Convention Center

**Pamela Whiffen** ([pwpr@aol.com](mailto:pwpr@aol.com)), NASA Educator Ambassador, Phoenix, Ariz.

Bring contemporary global issues alive in your classroom with these hands-on lessons that use real-world data to integrate math and science. Free curriculum!

**Differentiated Leadership: Leading with Learning Styles in Mind (Gen)***(General)* *Commonwealth B, Loews***Adrienne B. Somera** (*asomera@nwesd.org*), Northwest Education Service District, Anacortes, Wash.**Shannon Warren** (*shannon.warren@wwu.edu*), Western Washington University, Bellingham

Presider: Adrienne B. Somera

Experience a tool that allows school leaders to identify their teachers' core beliefs in order to develop a differentiated plan for effective leadership.

**Stem Cell Biology (Bio)***(High School–College)* *Commonwealth C, Loews***Dina G. Markowitz** (*dina\_markowitz@urmc.rochester.edu*) and **Susan Holt** (*sholtbmn@aol.com*), University of Rochester, N.Y.

In the future, embryonic stem cells may be used to treat heart disease, diabetes, and spinal cord injuries. This hands-on case study uses simulated stem cells and growth factors to explore the processes of cell differentiation. Take home a “lab in a bag” kit.

**Biofuels: The By-Products of Combustion (Env)***(Middle Level–High School)* *307, Marriott***Peggy Vavalla** (*marguerite.e.vavalla@usa.dupont.com*), DuPont Co., Wilmington, Del.

Gas prices? Fuel shortages? What are the solutions? Examine the issue of whether or not production and use of ethanol fuels should be promoted.

**Dealing with Murder: An Inquiry-based Approach to Science and Literacy (Bio)***(Middle Level–High School)* *Franklin 1, Marriott***Howard Schindler** (*hschindler@stpaulsschool.org*), Stevenson University, Stevenson, Md.**Dennis Mucenski** (*dennis\_mucenski@pittsford.monroe.edu*), Pittsford Mendon High School, Pittsford, N.Y.

Presider: Dennis Mucenski

Capitalizing on the appeal of forensics, this approach merges the scientific method and literacy as students become critical readers in the ultimate whodunit.

**Stem Cells: Science and Ethics (Bio)***(Middle Level–College)* *Franklin 4, Marriott***Jeanne T. Chowning** (*jchowning@nwabr.org*) and **Joan Griswold** (*jgriswold@nwabr.org*), Northwest Association for Biomedical Research, Seattle, Wash.

We'll address both the science behind embryonic stem cell research as well as its ethical implications. Take home an NIH-funded unit on CD.

**Increase the Inquiry in Your Labs (Gen)***(Middle Level–High School)* *Grand Salon A, Marriott***James J. Spagnoli** (*mistspag@aol.com*), East Meadow High School, East Meadow, N.Y.

Bring your cookbook labs and we will increase the inquiry by using simple modification techniques.

**Climate Change and You (Gen)***(Middle Level–High School)* *Grand Salon B, Marriott***Mary Spruill** (*info@need.org*), The NEED Project, Manassas, Va.

Explore the role of energy in the carbon cycle and climate change and learn what you can do to make a difference.

**Sock It to Me! Hydrophilic vs. Hydrophobic (Chem)***(Elementary–High School)* *Grand Salon C, Marriott***Edmund J. Escudero** (*escudero\_e@summitcds.org*), Summit Country Day School, Cincinnati, Ohio

Ultimax® socks contain hydrophilic and hydrophobic fibers. Use the socks in your classroom to explore the principles behind their wicking properties.

**NSTA Press Session: Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It (Chem)***(Preschool–Middle Level)* *Grand Salon D, Marriott***Bill Robertson** (*wrobert9@ix.netcom.com*), NSTA Press Author, Woodland Park, Colo.The author of the *Stop Faking It* books will guide you through hands-on activities from the two chemistry books. Irreverence promised.

**Informal Science Day Session: Engaging Students in Science Through After-School Activities (Gen)**

(Elementary–Middle Level) Grand Salon E/F, Group 4, Marriott Ben Dworken (*bdworken@tascorp.org*) and Sunset Harris (*sharris@tascorp.org*), The After-School Corp., New York, N.Y.

Bring quality, fun science learning to the after-school environment with this model that offers freedom for exploration and engages students in challenging activities.

**Beyond the Chia Pet® (Gen)**

(Middle Level–High School/Informal Ed.) Grand Salon J, Marriott Margaret Conover (*mcon@optonline.net*), State University of New York at Stony Brook

Christine Kola, M.S. 45 Thomas C. Giordano School, Bronx, N.Y.

Chia seeds are easy to work with as the subject of science inquiry activities and have multiple interdisciplinary connections that motivate learning.

**Slope: It's Not Just for Math Anymore! (Chem)**

(Middle Level–High School) Grand Salon K, Marriott

Chris S. Coker (*chemcoachf@yahoo.com*), Camden Fairview High School, Camden, Ark.

Presider: Pam C. Vaughan, Camden Fairview High School, Camden, Ark.

Use data collection techniques to apply the slope of a line to real-world applications. These hands-on labs work in the science classroom as well as the math classroom.

**Modeling Black Holes (Earth)**

(Middle Level–College) Freedom E, Sheraton

Robert T. Sparks (*rsparks@noao.edu*), National Optical Astronomy Observatory, Tucson, Ariz.

Learn how to build models illustrating the exciting science behind black holes using inexpensive everyday materials. Free NASA teacher's guide.

**Following Galileo's Investigations of the Orbits of Jupiter's Moons (Earth)**

(Middle Level–High School) Freedom G, Sheraton

Stephanie J. Slater (*sslaterwyo@gmail.com*), University of Wyoming, Laramie

These inquiry-based, classroom-ready activities use computer simulations to investigate the orbits of Jupiter's moons. Handouts.

**Antarctica's Climate Secrets: A Suite of Resources for Teaching Climate Change Literacy (Env)**

(Elementary–Middle Level) Freedom H, Sheraton

Louise T. Huffman (*lhuffman@andrill.org*), ANDRILL, Naperville, Ill.

Betty Trummel (*boop82@aol.com*), Husmann Elementary School, Crystal Lake, Ill.

Explore cutting-edge climate change science and leave with hands-on inquiry materials ready for immediate classroom use.

**NESTA Session: National Earth Science Teachers Association Geology Share-a-Thon (Earth)**

(Elementary–High School) Liberty A/B, Sheraton

Michelle C. Harris (*michelle\_harris@apsva.us*), Wakefield High School, Arlington, Va.

Michael J. Passow (*michael@earth2class.org*), Dwight Morrow High School, Englewood, N.J.

Roberta M. Johnson (*rmjohnsn@ucar.edu*) and Lisa Gardiner (*egardine@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.

Mike Anderson, Northbrook Middle School, Mendota, Ill.

Anica Brown (*abrown@lps.org*), Pound Middle School, Lincoln, Neb.

Geoff Camphire (*gac@agiweb.org*), American Geological Institute/CESE, Alexandria, Va.

Becky J. Cox (*beckyc@utm.edu*), The University of Tennessee at Martin

Ron Fabick (*rfabick@zoominternet.net*), NESTA, Medina, Ohio

Laura Guertin (*earthquest@psu.edu*) and Sara Neville (*earthquest@psu.edu*), Penn State Brandywine, Media, Pa.

Pamela Harman, SETI Institute, Mountain View, Calif.

Deb Hemler (*dhemler@fairmontstate.edu*), Fairmont State University, Fairmont, W.Va.

Ardis Herrold, Grosse Pointe North High School, Grosse Pointe Woods, Mich.

Eric Muller (*emuller@exploratorium.edu*), Exploratorium, San Francisco, Calif.

Sylvia K. Petersen (*sylvia\_petersen@ipsd.org*), Crone Middle School, Naperville, Ill.

Carole Reesink (*creesink@bemidjistate.edu*), Bemidji State University, Bemidji, Minn.

William Romine (*wlrb2@mail.mizzou.edu*) and Dane Schaffer (*dlszh3@mail.missouri.edu*), University of Missouri, Columbia

Claudia Toback (*cmt.edconsulting@ix.netcom.com*), Hunter College, New York, N.Y.

**John Toles**, Northern Illinois University, DeKalb  
**Gail Weeks** (*gweeks@elisabethmorrow.org*), Elisabeth Morrow School, Englewood, N.J.

Join NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

**Power Up, Power Down** (Earth)  
 (Middle Level) *Logans 2, Sheraton*

**Bruce H. Hemp** (*bhemp@ntelos.net*), Fort Defiance High School, Fort Defiance, Va.

Presenter: Jeff Adkins (*astronomyteacher@mac.com*), Deer Valley High School, Antioch, Calif.

Integrate science into math lessons and math into science lessons. Using free NASA materials, we will explore a hands-on lesson about scientific notation.

**JetStream: An Online School for Weather** (Earth)  
 (Informal Education) *Philadelphia North, Sheraton*

**Dennis R. Cain** (*dennis.cain@noaa.gov*), National Weather Service, Fort Worth, Tex.

Teach about the weather with JetStream, a free online resource from the National Weather Service. Modules are designed with both text and graphical displays and include classroom experiments that use common household items.

**Engaging Students with Rich Media to Study Climate Literacy** (Env)  
 (General) *Philadelphia South, Sheraton*

**Jessica Fries-Gaither** (*fries-gaither.1@osu.edu*), The Ohio State University, Columbus

**Daniella Quinones** (*daniella.quinones@wgbh.org*), WGBH Educational Foundation, Boston, Mass.

Integrate climate literacy into your curriculum using rich media from public television and partners to explore the polar regions and their connection to the world.

## 9:30–10:30 AM Exhibitor Workshops

**Carolina™ Biology Investigations for SPARKscience™: A Novel Approach to the “Ruler Drop” Lab** (Bio)

(Grades 9–12) *112A/B, Convention Center*

Sponsor: PASCO

**Ryan Reardon**, Alabama School of Fine Arts, Birmingham

In this hands-on workshop, you can try one of the new Carolina Biology SPARKlabs, made possible through a partnership between PASCO and Carolina Biological Supply Company. Try our novel approach to the traditional “ruler drop” lab. In this guided inquiry activity, the amount of time it takes to react to a visual stimulus will be measured. Next, participants will design and conduct a new investigation, testing other variables that may influence reaction time. The state-of-the-art science teaching solutions created for general-level high school students can enhance your teaching practice and improve student understanding of core topics.

**Tough Topics in Physics and Physical Science: Motion** (Phys)

(Grades 6–12) *113A, Convention Center*

Sponsor: PASCO

**Geoffrey Clarion**, Rocklin High School, Rocklin, Calif.

This session explores PASCO’s state-of-the-art science teaching solutions to one of the toughest aspects of physics and physical science investigations—motion. Investigate the differences between speed and velocity in a standards-based SPARKlab and experience how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

**InterActions in Physical Science—Newly Revised** (Phys)

(Grades 7–8) *201A, Convention Center*

Sponsor: It’s About Time

**Robert H. Poel**, Western Michigan University, Kalamazoo

Build your students’ content knowledge with a structured program that provides motivating and relevant activities, expository readings, and computer simulations. At the same time, you’ll be building students’ skills in scientific thinking, cooperative learning, and problem solving. High school science teachers tell InterActions teachers “Whatever you’re doing in InterActions, please keep doing it. Your students come excited and prepared to learn more science!”

**9:30–11:00 AM Presentations**

**SESSION 1**

**PDI McREL Pathway Session: Addressing Student Misconceptions (Preconceptions) (Gen)**

(General) 401/402, Marriott

**Anne L. Tweed** ([atweed@mcrel.org](mailto:atweed@mcrel.org)), 2004–2005 NSTA President, and Mid-continent Research for Education and Learning, Denver, Colo.

How can teachers reveal and address student misconceptions to determine if students really understand science concepts? Learn more about an instructional process that you can use to address misconceptions. Handouts provided.

**SESSION 2**

**PDI BSCS Pathway Session: Do Your Students “Get It”? Sense-making Strategies for Your Science Class (Gen)**

(Elementary–High School) 414/415, Marriott

**Betty Stennett**, BSCS, Colorado Springs, Colo.

See how several sense-making strategies can help your science students “get it” in your classroom.

**9:30–11:30 AM Presentations**

**SESSION 1**

**PDI CSME Pathway Session: Water: The “Connective Fluid” of Our Ecosystem (Env)**

(Elementary–Middle Level) 403, Marriott

**Jackie Takacs** ([takacs@umd.edu](mailto:takacs@umd.edu)), Maryland Sea Grant Extension Program, Solomons

Learn about the properties of water, how water connects to various ecosystem cycles, and how water can be used as an engaging inquiry-based stimulus material for elementary school students.

**SESSION 2**

**PDI FHL Pathway Session: Mapping the School Yard (Env)**

(General) 407/408, Marriott

**Patricia McGlashan** ([inquiries@firsthandlearning.org](mailto:inquiries@firsthandlearning.org)), First Hand Learning, Inc., Buffalo, N.Y.

Evaluate the educational potential of a site by mapping its resources, both natural and human made, and by making cross-curricular links to math, measurement, scaling, and drawing explicit.

**9:30 AM–2:30 PM Science Matters Activities**

9:30–11:00 AM

Millennium Hall, Loews

**NSTA and Intel Present Science Matters National Town Hall Meeting on Science Education**



Governor Rendell

Key stakeholders are calling for dramatic changes in the way science education is taught and learned. Join us for a national conversation and interactive session with state, national, and business leaders as we discuss the state of science education and how teachers are working to prepare students for the challenges of the 21st century.

Panelists will include The Honorable Edward Rendell, Governor of Pennsylvania, and representatives from the White House, the National Science Foundation, and Intel. Topics will include reauthorization of the Elementary and Secondary Education Act, Race to the Top, the Administration’s Educate to Innovate initiative, and Pennsylvania’s strong commitment to STEM education. *Imagine IT: The Power of Imagination*, a powerful documentary about connecting imagination and creativity with science and engineering in education, will be used throughout the event. (A special screening of the *Imagine It* documentary will be held in the Millennium Hall at 1:00 PM.)

1:00–2:30 PM

Millennium Hall, Loews

**Intel and Science Matters Present *Imagine It: The Power of Imagination***

Following the National Town Hall meeting on Science Education, Intel and *Science Matters* are pleased to host a special screening of the film *Imagine It: The Power of Imagination*. Participants will be able to view an edited piece from the documentary, and discuss the importance of the ideas presented in the film. Classroom teachers will be on hand to discuss how educators can use the film in the classroom, and free teaching materials will be available to participants.

**10:00–10:30 AM Presentation**

**SESSION 1**

**Evolution Instruction: What Biology Teachers Have to Say About Teaching Evolution (Bio)**

(High School–College/Supervision) Franklin 2, Marriott

**Ronald S. Hermann** ([rhermann@towson.edu](mailto:rhermann@towson.edu)), Towson University, Towson, Md.

Get critical insights into the issue of evolution through the voices of high school biology teachers.



**10:00–11:15 AM Exhibitor Workshops****Integrating Science and Literacy in Grades 1–6****(Gen)***(Grades 1–6)**108B, Convention Center*

Sponsor: Delta Education, School Specialty Science

**Tom Graika**, Consultant, Lemont, Ill.**Johanna Strange**, Consultant, Richmond, Ky.

We'll show you various strategies and Delta products that can integrate reading and language arts into your science programs. Learn how your students can experience the enjoyment of learning science with Delta Science Modules and make the literacy connection. Take home a workshop packet and related Delta materials.

**Inquiry Investigations™ Forensics Science Curriculum Module and Kits****(Gen)***(Grades 7–10)**109A/B, Convention Center*

Sponsor: Frey Scientific, School Specialty Science

**Ken Rainis** and **Lisa Bowman**, Frey Scientific, School Specialty Science, Ann Arbor, Mich.

With our new Inquiry Investigations forensic series, students learn foundational analysis skills that help them solve multifaceted cases. See how program software allows the preparation of web-based content along with individualized assessment. Perform skill-based investigative techniques and case investigations and receive a program resource CD and correlations.

## NSTA Student Member Events

### Friday, March 19

#### **NSTA Student Chapter Faculty Advisor Roundtable**

8:00–9:00 AM

*Philadelphia Marriott**Grand Salon G*

#### **NSTA Student Chapter Action Session**

9:30–10:30 AM

*Philadelphia Marriott**Grand Salon G*

#### **Becoming an NSTA Student Chapter Leader**

11:00 AM–12 Noon

*Philadelphia Marriott**Grand Salon G*

#### **Getting Connected: NSTA Student Chapter Interactive Television (ITV) Meetings**

12:30–1:30 PM

*Philadelphia Marriott**Grand Salon G*

#### **Increase Science Enthusiasm on Your Higher Education Campus: Start an NSTA Student Chapter**

2:00–3:00 PM

*Philadelphia Marriott**Grand Salon G*

#### **Assisting Preservice Teachers in Presenting at NSTA and Other Science Conferences: An NSTA Student Chapter Roundtable**

3:30–4:30 PM

*Philadelphia Marriott**Grand Salon G*

#### **Student Chapter and Student Member Reception**

5:30–7:00 PM

*Philadelphia Marriott**Grand Salon G*

### Saturday, March 20

#### **Starting an NSTA Student Chapter: Faculty and Student Perspectives**

8:00–9:00 AM

*Philadelphia Marriott, 308*

## 10:00–11:30 AM Exhibitor Workshops

### **Bio-Rad—Got Protein in Your Milk?** (Gen)

(Grades 7–College) 103B, Convention Center

Sponsor: Bio-Rad Laboratories

**Stan Hitomi** (*biotechnology\_explorer@bio-rad.com*), San Ramon Valley Unified School District, Danville, Calif.

**Kirk Brown** (*biotechnology\_explorer@bio-rad.com*), Tracy High School, Tracy, Calif.

Explore the nutritional value of common beverages from milk to sports drinks using the Bradford assay. This versatile lab can be done qualitatively and/or quantitatively with a spectrophotometer. This is the perfect lab to integrate physics, chemistry, and biology.

### **Flinn Favorite Biology Lab Activities and Games** (Bio)

(Grades 9–12) 103C, Convention Center

Sponsor: Flinn Scientific, Inc.

**Maureen Hunt**, Flinn Scientific, Inc., Batavia, Ill.

Students learn better and faster when they are actively involved in fun hands-on activities that create learning opportunities along the way. We'll share some inquiry-based labs, interactive demonstrations, and collaborative games teachers use to motivate their students. We'll focus on core topics like cell biology, genetics, ecology, and more—you're sure to find a Flinn favorite that works for you! Handouts provided for all activities.

### **Blood Spatter Symphony** (Bio)

(Grades 6–12) 104A/B, Convention Center

Sponsor: WARD's Natural Science

**Maestro Kathy Mirakovits**, Portage Northern High School, Portage, Mich.

WARD's original #1 chart-topper—simulated blood—headlines this forensics performance. Using simulated blood, you will learn to conduct blood typing tests and interpret and understand blood spatter.

### **A Showcase of BIOZONE's Latest Workbooks and Presentation Media for Grades 9–12** (Bio)

(Grades 9–College) 105A/B, Convention Center

Sponsor: BIOZONE International Ltd.

**Richard Allan** (*richard@biozone.co.nz*), BIOZONE International Ltd., Hamilton, New Zealand

BIOZONE's acclaimed biology student workbooks (grades 9–12) and presentation media (editable PowerPoint slides) will be showcased. Suitable for any biology program, including AP and IB, BIOZONE products are renowned for their impressive graphics and for encouraging critical thinking.

Also, learn about our 10 modular workbook titles, including *Anatomy & Physiology* and *Environmental Science*. Learn how these cost-effective resources can make a difference in your teaching program. FREE books for each attendee.

### **Enhance Your AP Biology Presentations Using Teacher-generated and FREE Resources from Howard Hughes Medical Institute** (Bio)

(Grades 9–College) 106A/B, Convention Center

Sponsor: Howard Hughes Medical Institute

**Anthony Bertino**, Retired Educator, Scotia, N.Y.

**Patricia N. Bertino**, Scotia, N.Y.

Enrich your AP program with animations, video clips, virtual labs, and teacher-generated resources that will help your students grasp diverse topics, including meiosis, sex determination, X-inactivation, embryonic development, gene switches, obesity, stem cells, cancer, aging, cell communication, HIV, and biodiversity. Participants will receive free DVDs, PowerPoints, and CDs.

### **Electric Motor: Fun with Electromagnetism—Who Can Build the Fastest Motor?** (Gen)

(Grades 5–12) 108A, Convention Center

Sponsor: CPO Science, School Specialty Science

**Erik Benton**, CPO Science, School Specialty Science, Nashua, N.H.

This workshop is for all who are interested in electromagnetism, regardless of your level of expertise. You will learn how electricity and magnetism are related, and how these phenomena are used in electric motors. We will design, construct, and test large electric motors that can be built by students.

### **AeroLab** (Phys)

(Grades 6–12) 110A/B, Convention Center

Sponsor: Academy of Model Aeronautics

**Gordon Schimmel**, Academy of Model Aeronautics, Muncie, Ind.

Flight is always a topic of curiosity, offering opportunities for strong student interest. AeroLab lessons using simple foam and balsa aircraft are unique tools for teaching Newton's laws and centripetal force and for practicing important math skills such as determining average speed and acceleration. All labs are geared to national and state science standards. Participants will build and fly a model aircraft suitable for use in middle and high school physical science classrooms—flying models with lessons you can use on Monday!

**Teaching Inquiry Science with Toys and Treats****(Gen)***(Grades 3–12)**111A/B, Convention Center*

Sponsor: McGraw-Hill School Education Group

**Ralph Feather**, Bloomsburg University, Bloomsburg, Pa.  
**Sandy Feather**, Bloomsburg, Pa.

Learn fun, practical, and engaging hands-on inquiry teaching ideas using toys and treats. Everyone is a winner as you experience these classroom strategies and participate in the workshop activities.

**New Tools, New Insights, and New Ways of Understanding Science with Miller & Levine *Biology*** **(Bio)***(Grades 9–12)**113B, Convention Center*

Sponsor: Pearson

**Kenneth Miller**, Brown University, Providence, R.I.**Joseph Levine**, Author, Concord, Mass.Students are changing—their abilities and interests are more diverse, their learning styles are more varied, and they are growing up “wired” into the internet and other new media. Join co-authors Ken Miller and Joe Levine as they provide teaching strategies on how to use Miller & Levine *Biology* to put the power of new science and technology directly into the hands of you and your students.**If You Can't Stand the Pressure, Get Out of the Classroom** **(Gen)***(Grades 4–8)**113C, Convention Center*

Sponsor: Educational Innovations, Inc.

**Tami O'Connor**, Educational Innovations, Inc., Norwalk, Conn.

Pressure can be a difficult topic to teach. Educational Innovations carries awesome products that fit your budget to help teach this topic in a fun and motivational way! Teachers in grades 4–8 will discover great ideas they can immediately use in their classrooms.

**Discover the Solar System and Beyond** **(Earth)***(Grades 3–8)**201B, Convention Center*

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

The universe is as vast and wide as the topics a teacher needs to teach space science. However, meeting space science educational standards with the classroom time allotted can be challenging. GEMS® Space Science Sequences allow you to teach exactly what you need to cover in a timely manner.

**Chemistry with Vernier****(Chem)***(Grades 9–College)**202A, Convention Center*

Sponsor: Vernier Software &amp; Technology

**Dan Holmquist** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.Experiments such as acid-base titration and Boyle's law from our popular *Chemistry with Vernier* and *Advanced Chemistry with Vernier* lab books will be performed in this hands-on workshop. Conduct these experiments using LabQuest and our new LabQuest Mini. See our new Mini GC Gas Chromatograph and SpectroVis Plus Spectrophotometer in action!**Engineering with Vernier****(Phys)***(Grades 7–College)**202B, Convention Center*

Sponsor: Vernier Software &amp; Technology

**David L. Vernier** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.See how Vernier sensors are used with LEGO's NXT to build sensor-controlled robots. Experiments from our new book *STEM 2 with Vernier and LEGO® MINDSTORMS® NXT* will be featured. In addition, we will provide an introduction to building advanced engineering projects using LabVIEW software and our SensorDAQ interface.**Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools** **(Chem)***(Grades 9–College)**203A, Convention Center*

Sponsor: Wavefunction, Inc.

**Paul Price** ([sales@wavefun.com](mailto:sales@wavefun.com)), Wavefunction, Inc., Irvine, Calif.

Widely recognized as a powerful teaching tool, molecular modeling is now a common component of introductory chemistry classes at the college level. Join us for this hands-on workshop and learn how to integrate state-of-the-art modeling into your AP chemistry teaching. Laptop computers provided for workshop.

**Hands-On Teaching with the Anatomy in Clay® Learning System** **(Bio)***(Grades 5–College)**203B, Convention Center*

Sponsor: Hands and Minds/Anatomy in Clay

**Myles Crane**, Hands & Minds Inc., Loveland, Colo.

Enhance your instruction of anatomy by increasing student engagement to 100%. Experience how easy and fun it is to teach the Anatomy in Clay system. By actively building in clay, students retain more and really “know” body structure location, function, and how they work together. Less memorization, more learning that sticks.

**Introduction to Protozoa (Bio)**

(Grades 9–12) 204A, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Meet the dynamic trio of *Paramecium*, *Euglena*, and *Amoeba*, as well as lesser-known protozoa. Easy to maintain, protozoa are excellent for open-ended exploration by students.

**Carolina's Young Scientist's Dissection Series (Bio)**

(Grades 5–8) 204B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Carolina's Young Scientist's Dissection Kits provide introductory-level activities for earthworm, crayfish, grasshopper, starfish, perch, and frog. Using instructions provided, students locate and identify external and internal features and gain understanding of the animals as well as of the relationship of structure to function. Kits address the National Science Education Standards, Grades 5–8, Life Science.

**Advanced Data Logging for Your High School Science Lab! (Gen)**

(Grades 9–12) 303A/B, Convention Center

Sponsor: Fisher Science Education

**Isaac Rosen**, Fisher Science Education, Pittsburgh, Pa.

ALL NEW! Discover an affordable technology solution for a 21st-century classroom. Advanced data logging activities will be explored as Fisher Science Education introduces you to a brand-new flexible data logging system that will help you breathe life into your high school biology classroom, get a reaction in your high school chemistry classroom, and accelerate your high school physics labs. Perfect for AP and high school science teachers. Door prizes will be awarded.

**Capturing Attention in the Chemistry Classroom (Chem)**

(Grades 9–12) 304, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Jerry Sarquis** and **Mickey Sarquis** ([sarquiam@muohio.edu](mailto:sarquiam@muohio.edu)), Miami University, Middletown, Ohio

*Modern Chemistry* authors Jerry and Mickey Sarquis show you how to spark imagination and interest in chemistry with simple but powerful tricks and tips. The Sarquises are recognized leaders in chemistry education initiatives.

**A Natural Approach to Chemistry: Teaching About Spectrophotometry (Chem)**

(Grades 10–12) Hall D/Room 2, Convention Center

Sponsor: LAB-AIDS, Inc.

**Tom Hsu**, Author, Andover, Mass.

Join author Tom Hsu for a special preview and hands-on examination of selected laboratory activities from *A Natural Approach to Chemistry*, a new high school program that takes a fresh look at chemistry today. It features an innovative new probeware system that is rugged, simple to use, and makes accurate, quantitative measurements accessible to all students. Selected lab activities will address concepts related to heat, specific heat, and temperature. Selected labs and other program materials will be provided for all participants.

**Camera Magic: Strategies to Incorporate Visual Presenters into Your Lessons (Gen)**

(Grade 7) Hall D/Room 4, Convention Center

Sponsor: Lumens Integration, Inc.

**Eddy Boyette**, Lumens Integration, Inc., Fremont, Calif.

Science is about seeing, touching, and understanding. With small objects, sometimes the best way to help students get close is through magnification and projection. Document cameras show all sides of objects and help the students in the back of the room see as much detail as those in the front row.

**Flinn Scientific's Morning of Chemistry: A Chemistry Demonstration Carnival! (Chem)**

(Grades 7–12) Room 114/Auditorium, Convention Center

Sponsor: Flinn Scientific, Inc.

**Jeff Bracken**, Westerville North High School, Westerville, Ohio

Step Right Up! Come One, Come All! Discover how you can inspire your students with these great demonstrations. Lively learning is guaranteed! See 20 of Jeff Bracken's newest and most effective demos like "The Flaming Ferris Wheel" and "Fuel Cell Football" plus "Exploding Eggs" and the "Giant Alcohol Cannon." Bring your science-teaching friends to this free, must-see event. Jeff's creative, entertaining style helps students realize that learning chemistry can be fun. Engaging games, music, eye-catching colors, and glowing lights are all part of this spirited Chemical Demonstration Carnival. You'll learn new and exciting ways to present innovative demonstrations your students will never forget! Handouts.

**10:00 AM–12 Noon Meeting****AMSE Annual Membership Meeting***Tubman, Loews***10:00 AM–12 Noon Presentation****SESSION 1****Professional Development Providers: What You Need to Know from A to Z! (Gen)***(General)**Washington C, Loews*

**Christine Anne Royce** (*caroyce@aol.com*), NSTA Director, Professional Development; Chairperson, NSTA Philadelphia National Conference on Science Education; and Shippensburg University, Shippensburg, Pa.

Join the NSTA Professional Development Committee as we review the research about and provide suggestions for a successful professional development program.

**10:00 AM–3:00 PM Meeting****Association of Science Materials Centers (ASMC) Program Advisory Board Meeting***(By Invitation Only)**Jefferson, Loews***10:30 AM–12 Noon Shell Science Seminar****Building an Environmentally Literate Workforce Through STEM Education (Gen)***(General)**201C, Convention Center*

**Jane Lubchenco** (*danielle.rioux@noaa.gov*), Under Secretary of Commerce for Oceans and Atmosphere and NOAA Administrator, NOAA, Washington, D.C.

President: Jennifer Long (*jlong9358@gmail.com*), Science Teacher, Old Bridge, N.J.

In the report *Rising Above the Gathering Storm*, the National Academy of Sciences concluded that building a workforce that is knowledgeable about science, technology, engineering, and mathematics (STEM) is crucial to maintaining America's competitiveness in a rapidly changing global economy. As a scientific educator and researcher for over three decades, I have witnessed the evolution of scientific education and observed the impact that a strong STEM background can have on an individual's success in the workforce. NOAA has broad authority through the America COMPETES Act to educate the public about the science, services, and stewardship of America's oceanic, coastal, Great Lakes, and atmospheric resources. Building on these mandates is one of my priorities, and I believe we must embrace every opportunity to expand the public's understanding of STEM so that they can make informed decisions.

*Dr. Jane Lubchenco, marine ecologist and environmental scientist, is the ninth Administrator of NOAA. Her scientific expertise includes oceans, climate change, and interactions between the environment and human well-being. She has studied marine ecosystems around the world and championed the importance of science and its relevance to policy making and human well-being. She has a special interest in Arctic ecosystems, with recent work in Svalbard, Greenland, and the Alaskan arctic, and has provided scientific input to multiple U.S. administrations and Congress on climate, fisheries, marine ecosystems, and biodiversity.*

*Dr. Lubchenco's scientific contributions are widely recognized. Eight of her publications are "Science Citation Classics," and she is one of the most highly cited ecologists in the world. Dr. Lubchenco has received numerous awards, including a MacArthur Fellowship, nine honorary degrees, the 2002 Heinz Award in the Environment, the 2005 AAAS Award for Public Understanding of Science and Technology, and the 2008 Zayed International Prize for the Environment.*

**10:30 AM–12 Noon Shell Science Seminar**

**Urban Science Education Leaders Academy: An Urban Response to a National Emergency (Gen)**  
(General) 204C, Convention Center



**Adriane E.L. Dorrington** (*adorrington@cox.net*), President, The Dorrington Group, Washington, D.C.

Prsider: Zipporah Miller, Associate Executive Director, Professional Programs and Conferences, NSTA, Arlington, Va.

The United States' performance in science education leaves many people concerned about our future and our capacity to rekindle the post-Sputnik urgency to improve science education and increase scientific awareness. We will examine the status of science education in the United States and explore how current research findings can be used to jump-start science education.

A panel of science educators, including participants from the 2009 Urban Science Education Leaders Academy (USEL), will describe how USEL is answering the call to action, building capacity, and improving teaching and learning in science classrooms across the nation.

*Dr. Adriane E.L. Dorrington, a former science teacher and administrator with over 20 years of classroom experience, taught middle level and high school mathematics, physical science, and biology in urban and suburban school districts in Canada. Her public school experience included serving as the science consultant for the province of Nova Scotia and serving on the Canadian national committee responsible for developing the Common Framework of Science Learning Outcomes. In 1995, she helped to implement and score the first-ever performance-based Canadian School Achievement Indicator Program for science.*

*Dr. Dorrington taught undergraduate and graduate courses in science education, classroom assessment, classroom management, international education, and diversity at post-secondary institutions in Canada and the United States. She is a certified national trainer who worked with the Education Testing Service and provided professional development and technical support to school districts and post-secondary institutions across the United States.*

*Dr. Dorrington continues to be committed to promoting educational excellence and providing high-quality targeted professional development. The Dorrington Group continues to provide professional development in science education for many urban school districts and partners with NSTA in the development and promotion of the Urban Science Education Leaders Academy.*

**11:00 AM–12 Noon Presentations**

**SESSION 1**

**NSTA** NSTA Avenue Session: **Siemens We Can Change the World Challenge—Going Green (and Digital) in the 21st Century (Env)**

(Elementary–High School) 307, Convention Center

**Lance Rougeux**, Discovery Education, Silver Spring, Md.

More than ever our students are driving change and transforming the world into a greener place. Help your students learn how they can make an impact every day, in the classroom and at home, as you learn a “green” tech tip for every day of the week. We’ll also discuss the free resources available through the Siemens We Can Change the World Challenge—the premier national K–12 student sustainability competition.

**SESSION 2**

★ **Teaching Science to Reluctant Learners (Gen)**  
(Middle Level–High School) Hall D/Room 7, Convention Center

**Glen E. Moulton**, Retired Educator, Applegate, Ore.

Prsider: Rob Meissner, CurrTech Integrations, LLC, Baltimore, Md.

Here are specific tips for presenting the 3Rs: repetition, re-inforcement, and reading, with a focus on creating materials that promote student engagement, learning, and efficacy.

**SESSION 3** (two presentations)

(Preschool–Elementary) Hall D/Room 8, Convention Center

**Co-teaching in Kindergarten Science (Bio)**

**Deborah C. Smith** (*dcs27@psu.edu*), The Pennsylvania State University, University Park

**Jessica M. Cowan** (*jlc31@scasd.k12.pa.us*), Gray’s Woods Elementary School, Port Matilda, Pa.

A university researcher and kindergarten teacher co-taught a unit on seeds and plants, using the Ready, Set, Science! strands of proficiency.

**Here’s Looking at You! (Bio)**

**Marsha Bednarski** (*bednarskim@ccsu.edu*), Central Connecticut State University, New Britain

Meet the standards with a professional development strategy that connects teacher inservice activities to the classroom and involves partnership with university folk. Learn about cow eye dissection in a fifth-grade classroom.

**SESSION 4****Reading, Writing, and Science—A Beautiful Friendship (Gen)**

(Elementary–High School) Hall D/Room 11, Convention Center  
**Rachael Pinsley**, Glenwood Elementary School, Media, Pa.

**Desiree Barnes**, Rose Tree Elementary School, Media, Pa.

Presider: Anthony E. Grisillo, Glenwood Elementary School, Media, Pa.

Imagine teams of students reading, researching, experimenting, and writing science magazines. Don't imagine, learn how to make it happen!

**SESSION 5** (two presentations)**Elementary Science Learning Through Social Networking (Gen)**

(Elementary) Hall D/Room 14, Convention Center  
**Michele LeBlanc Gunther** (*micheledgunther@aol.com*), Lincoln Avenue Elementary School, Sayville, N.Y.

Learn to use web-based technology (podcasts, blogs, and surveys through social networks such as ning and wikis) to enhance science learning in a social forum. Walk away with “how-to” pages and web-based resources for specific grade levels.

**Elementary Science and Engineering Connections (Gen)**

**Carol Shields** (*carol.shields@stevens.edu*), Stevens Institute of Technology, Hoboken, N.J.

Explore life and earth science lessons and related engineering challenges that engage students in scientific inquiry, critical thinking, collaboration, and other 21st-century workforce skills.

**SESSION 6** (two presentations)

(Elementary–Middle Level) Hall D/Room 20, Convention Center  
 Presider: Mark Frechette, Georgetown Middle School, Georgetown, S.C.

**Divide and Grow: Team Teaching for the 21st Century (Gen)**

**Nina W. Runion** (*runion4@verizon.net*), Georgetown Middle School, Georgetown, S.C.

We need to teach smarter not harder and focus on using data to drive our instruction. Divide and Grow team teaching allows advanced students to probe further into concepts, proficient students to have re-teaching opportunities, and below-basic students to finally get a chance to succeed. Students are not left behind and they become more motivated.

**Teacher Leadership for Effective K–8 Science Instruction: The Da Vinci Teacher Leader Institute (Gen)**

**David Lee Smith** (*dsmith@davinci-center.org*), Da Vinci Science Center, Allentown, Pa.

**William Gibbard**, Allentown (Pa.) School District

Our Teacher Leader Institute improves student learning, teacher content knowledge, and inquiry teaching skills for both leaders and peers.

**SESSION 7****Peer Teacher Workshops: A Model for Developing Instructional Leadership (Gen)**

(General) Hall D/Room 25, Convention Center

**Margo Bartiromo** (*margaret\_bartiromo@merck.com*) and **Caroline Crew** (*crewcg@npenn.org*), North Penn School District, Lansdale, Pa.

**Stacey Gruber** (*stacey\_gruber@merck.com*), Merck Institute for Science Education, Rahway, N.J.

Presider: Joseph L. Maglaty (*maglatyj@merck.com*), Merck Institute for Science Education, West Point, Pa.

Explore models for developing capacity of teacher leaders to develop and deliver science professional development. These research-based models were developed by Merck Institute for Science Education.

**SESSION 8****Energize Your Classroom with Discrepant Events: A Little Science Magic! (Gen)**

(General) Hall D/Room 27, Convention Center

**Dwight C. Putnam** (*dputna@wboro.org*), Whitesboro High School, Marcy, N.Y.

Capture your students' attention with these thought-provoking, paradoxical discrepant demonstrations, from classic with a twist to “science magic” bell-ringers guaranteed to excite your most apathetic students. Terrific for all grade levels.

**SESSION 9****Has NCLB Endangered Science Fair Project Participation in the U.S.? (Gen)**

(General) Hall D/Room 29, Convention Center

**Jerry D. Valadez** (*jdvscience@yahoo.com*), Fresno, Calif.

**Elizabeth Allan** (*eallan@uco.edu*), University of Central Oklahoma, Edmond

Presider: Patricia M. Shane, NSTA President, and The University of North Carolina at Chapel Hill

Recent data show that science fair participation is down significantly from pre-NCLB years to now. What will be the cost of not addressing this problem?

**SESSION 10**

**Celebrating African-American Scientists and Inventors Through Hands-On Science (Gen)**

(General) *Hall D/Room 30, Convention Center*

**Tyraine Ragsdale** (*grandhank@aol.com*), Grand Hank Productions, Inc., Philadelphia, Pa.

Presider: **Kyle Bunch** (*kbunch41587@gmail.com*), St. John High School, Plaquemine, La.

This high-impact series uses event-based instruction to introduce, highlight, and reinforce students' understanding of the important contributions made to science and technology by African-Americans.

**SESSION 11**

**CSSS Session: The Evolution of Inquiry in the 21st Century (Gen)**

(General) *Anthony, Loews*

**Michael B. Heinz** (*michael.heinz@doe.state.nj.us*), New Jersey Dept. of Education, Trenton

Explore how *Ready, Set, Science!* and similar reports are pointing to a more sophisticated and nuanced way of thinking about how students develop science proficiency.

**SESSION 12**

**Stand and Deliver! Be a Presenter at NSTA Conferences (Gen)**

(General) *Commonwealth A, Loews*

**Melvina Jones** (*mjteachme@aol.com*), NSTA Director, Pre-school/Elementary, and District of Columbia Public Schools, Washington, D.C.

Members of the NSTA Preschool/Elementary Committee will guide participants through a PowerPoint presentation that will explain all the steps needed to present at NSTA conferences.

**SESSION 13**

**AMSE Session: Boston Science Partnership Follow-Up to “Secret to Urban AP Success” (Gen)**

(Middle Level–College/Supervision) *Commonwealth D, Loews*

**Allison Scheff** (*allison.scheff@umb.edu*), University of Massachusetts, Boston

**Pam Pelletier**, Boston (Mass.) Public Schools

**Kristen L. Cacciatore** (*kcacciatore@boston.k12.ma.us*), East Boston High School, Boston, Mass.

The Boston Science Partnership shares its success in overcoming the challenges and obstacles urban students have with AP curricula.

**SESSION 14** (two presentations)

(High School–College)

*Congress A, Loews*

**The Role of University Science Faculty Members in the Education of Future Science Teachers (Gen)**

**Monica J. Young** (*moyoung@syr.edu*) and **Tyna Gaylord** (*tgaylord@mail.ircsd.org*), Syracuse University, Syracuse, N.Y.

We examined university science faculty members' perceptions of their role in the education of future science teachers using NSF-funded IMPACT Project data from Syracuse University, The University of Iowa, and North Carolina State University.

**Delaware's NSF GK–12 Project: Integrating Science Research into Vo-Tech High Schools (Gen)**

**Kate Scantlebury** (*kscantle@udel.edu*) and **George Watson** (*ghw@art-sci.udel.edu*), University of Delaware, Newark

**Amy Quillen** (*amy.quillen@nccvt.k12.de.us*), Paul M. Hodgson Vocational Technical High School, Newark, Del.

Our NSF funded GK–12 project successfully placed cohorts of science graduate students in vocational-technical high schools.

**SESSION 15**

**Virtual Worlds: When Science Is a Video Game!**

(Gen)

(General)

*Congress B, Loews*

**Juliana Texley** (*jtexley@att.net*), Palm Beach Community College, Boca Raton, Fla.

Explore some of the newest applications for science education in gaming, virtual communities, simulations, and other high-tech applications. No textbooks required—or recommended—in tomorrow's science education classrooms!

**SESSION 16**

**NSELA Session: Using Formative Assessments to Bridge the Modification Gaps for Special Education Students**

(Bio)

(General)

*Congress C, Loews*

**Tiffany N. Neill** (*tneill@ou.edu*) and **Jean Cate** (*jcate@ou.edu*), University of Oklahoma, Norman

Learn how to use formative assessments to search for and develop modifications for special education students in a full-inclusion science classroom.



## SESSION 17

**Conceptual Confusions in Teaching Modern Physics** (Phys)*(High School–College)**Regency C2, Loews***Stuart M. Gluck** (*stu@jhu.edu*), Johns Hopkins University, Baltimore, Md.

Explore common myths about special relativity and quantum mechanics so that you can teach students modern physics with accuracy and conceptual clarity.

## SESSION 18

**ASTE Session: Science Teaching as a Profession: Why It Isn't, How It Could Be** (Phys)*(High School/Supervision)**Washington A, Loews***Anne Baffert** (*azchemmom@yahoo.com*), Salpointe Catholic High School, Tucson, Ariz.

What will it take to professionalize your tasks as a science teacher, your work life as a science teacher, and your status as a science teacher?

## SESSION 19

**Building Partnerships to Improve Teacher Quality and Student Outcomes: The Cleveland Math and Science Partnership** (Gen)*(Supervision/Administration)**Washington B, Loews***Bill Badders** (*baddersw@cmsdnet.net*), Cleveland (Ohio) Metropolitan School District**Julie Gielow** (*julie.a.gielow@cmsdnet.net*), James A. Garfield Local School District, Cleveland, Ohio

The Cleveland Metropolitan School District, with funding from the National Science Foundation, has developed and sustained a partnership with John Carroll University, Cleveland State University, Case Western Reserve University, and the Education Development Center focused on improving teacher quality through rigorous university coursework and a content-based mentoring program for middle and high school teachers. We'll share lessons learned after seven years of the project.

## SESSION 20

**Hook, Line, and Sinker! How to Catch and Hold Students' Attention** (Gen)*(Middle Level–High School)**302/303, Marriott***Jennifer D. Beimer** (*jennifer\_beimer@lovejoyisd.net*), Lovejoy Independent School District, Allen, Tex.**Pam Simmons-Brooks** (*pam\_brooks@lovejoyisd.net*), Sloan Creek Middle School, Fairview, Tex.

Want to reel in your students' attention in the classroom? Learn how to use movie clips, podcasts, and blogs to connect with today's technologically advanced and entertainment-saturated students.

## SESSION 21

**Teaching with Timelines: How Organizing the Past Prepares Students for the Future** (Gen)*(Middle Level–High School)**305/306, Marriott***Heather M. Worsham** (*hmw7a5@mizzou.edu*), University of Missouri, Columbia**Hillary Enloe** (*henloe@mc-wildcats.org*), Montgomery County R-II High School, Montgomery City, Mo.

Timelines help students make sense of the past as well as project into the future. We will share best ideas, materials, and suggestions.

## SESSION 22

**PDI Skills Pathway Session: Copper Extraction and the Power of Story** (Chem)*(High School)**405, Marriott***Charles Judson Hill** (*chill@wheelock.edu*), Education Development Center, Inc., Newton, Mass.

To live and thrive in today's job market and society, students must know how to work collaboratively; gather, sort, and synthesize information; apply information to solving real-world challenges and problems; and communicate their ideas clearly and effectively. We'll look at how to integrate these higher-order skills into the science curriculum.

## SESSION 23

**Teaching Biology with Models and Modeling** (Bio)*(Middle Level–College)**Franklin 2, Marriott***Brandy A. Skjold** (*brandy.pleasants@wmich.edu*) and **Reneé Schwartz** (*r.schwartz@wmich.edu*), Western Michigan University, Kalamazoo

Presider: Nancy Tress (*ntress@pitt.edu*), University of Pittsburgh at Titusville

These classroom-tested ideas integrate the use and critique of models into lessons about biology content.

**SESSION 24**

**Project-Based Learning to Increase Student Interest in Engineering (Phys)**

(Middle Level–College) Franklin 6, Marriott

**Diana Laboy-Rush** (*dlaboyrush@learning.com*), Learning.com, Portland, Ore.

Presider: Michiko J. Martin, NOAA Office of National Marine Sanctuaries, Silver Spring, Md.

Projects can increase student interest in STEM fields because they involve students in solving authentic problems and building real solutions. We will look at the use of projects to increase interest in the field of engineering.

**SESSION 25** (two presentations)

(Middle Level–High School) Franklin 7, Marriott

**The Physics of Driving Safety: How We Use Driving as a Real-Life Focus for Our Motion Unit (Phys)**

**Kristin Newton** (*knewton@cpsd.us*), **Anne Holzman**, and **Desirée Phillips** (*dphillips@cpsd.us*), Cambridge Rindge and Latin School, Cambridge, Mass.

We will share the highly scaffolded and project-based motion and forces curriculum unit we've designed for our heterogeneously grouped ninth-grade classes.

**Physics and the Energy Crisis: Authentic Learning Experiences in a High School Physics Classroom**

(Phys)

**Carrie-Anne Sherwood** (*csherwood@codmanacademy.org*), Codman Academy Charter Public School, Dorchester, Mass.

It's possible to teach inquiry-based physics while incorporating authentic learning experiences in an urban public high school curriculum subject to state mandated testing. Come see how!

**SESSION 26** (two presentations)

(High School–College/Supervision) Franklin 8, Marriott

**Re-igniting the Passion: A Public-Private Partnership Model for Teacher Professional Development**

(Bio)

**Meredith C. Durmowicz** (*mdurmowicz@stevenson.edu*) and **Susan T. Gorman** (*sgorman@stevenson.edu*), Stevenson University, Stevenson, Md.

Here is a professional development model for teachers in the biomedical sciences that engages them in active learning of a problem-based curriculum.

**Best Practices: Models for Online Teacher Professional Development (Bio)**

**Nancy P. Moreno** (*nmoreno@bcm.edu*), **Barbara Tharp** (*btharp@bcm.edu*), and **Deanne B. Erdmann** (*derdmann@bcm.edu*), Baylor College of Medicine, Houston, Tex.

We'll look at research on the best ways to provide online teacher professional development, including results from a recent study funded by the National Science Foundation.

**SESSION 27**

**Teaching Evolution: Meeting the Challenge of So-called Intelligent Design (Bio)**

(Middle Level–High School) Franklin 9, Marriott

**Michael J. Vieira Lazaroff** (*mjvlazaroff@gmail.com*), Staples High School, Westport, Conn.

Rather than skirt the issue, meet it head on! Use the problems with intelligent design to strengthen your teaching of evolution.

**SESSION 28**

**Lotions, Potions, and Scrubs: Polymer Science in Cosmetics (Chem)**

(High School) Franklin 10, Marriott

**Sherri C. Rukes** (*scrukes@comcast.net*), Libertyville High School, Libertyville, Ill.

Learn how to make various cosmetics and the polymer science behind them. Handouts and samples provided.

**SESSION 29**

**NOAA Climate Symposium Session: Whither Arctic Sea Ice? An Earth Exploration Toolkit (EET) Chapter on the Climate's Canary in a Coal Mine**

(Earth)

(Middle Level–High School) Franklin 11, Marriott

**Walt N. Meier** (*walt@nsidc.org*), University of Colorado at Boulder

The EET chapter exposes students to climate change, scientific data, statistical concepts, and image-processing software.

## SESSION 30

**Informal Science Day Session: What Do We Know About Science Learning Beyond the Classroom?****(Gen)***(Informal Education)* Grand Salon E/F, Group 1, Marriott**James Kisiel** (*jkisiel@csulb.edu*), California State University, Long Beach**John Falk** (*falkj@science.oregonstate.edu*), Oregon State University, Corvallis

How can recent research in informal or free-choice learning inform our efforts as science educators in school and out-of-school settings?

## SESSION 31

**Informal Science Day Session: Change Attitudes About STEM with Free Online Professional Development from PBS****(Gen)***(General)* Grand Salon E/F, Group 3, Marriott**Susan Buckey** (*susan\_buckey@wgbh.org*) and **Daniella Quinones** (*daniella.quinones@wgbh.org*), WGBH, Boston, Mass.**Maura Thompson**, WNET.org, New York, N.Y.**Yonoco Evans** (*yevans@foundationsinc.org*), Foundations, Inc., Moorestown, N.J.

Presider: Susan Buckey

Top PBS producers and partnering organizations offer free, inexpensive online professional development tools—using high-quality digital resources—that support STEM learning in informal (and formal) settings.

## SESSION 32

**Informal Science Day Session: LEAP into Science: A Museum/Library Partnership in After-School Science Learning****(Gen)***(Elementary/Informal Ed)* Grand Salon E/F, Group 4, Marriott**Dale McCreedy** (*mccreedy@fi.edu*), The Franklin Institute, Philadelphia, Pa.

This multi-year partnership targeting urban after-school settings will enhance the capacity of urban communities to engage youth and families in science and children's literature.

## SESSION 33

**Becoming an NSTA Student Chapter Leader** **(Gen)***(College)* Grand Salon G, Marriott**Kate A. Baird** (*kabaird@iupuc.edu*), NSTA Director, District X, and Indiana University-Purdue University, Columbus**Bambi L. Bailey** (*bambi\_bailey@uttyler.edu*), The University of Texas at Tyler

Presider: Bambi L. Bailey

Are you an NSTA student chapter member or officer? Come experience personality inventories, problem-solving activities, and collaborative explorations of leadership.

## SESSION 34

**Polymers 1A: They're Everywhere! Kitchen, Classroom, Cars, and Clothing** **(Chem)***(Informal Education)* Grand Salon L, Marriott**Brian P. Wright**, Olympia High School, Olympia, Wash.

In a fast-paced tour of a super-center store, we'll see some cool examples illustrating polymer science, history, and engineering—all linked to web pages and activities. Free CD.

## SESSION 35

**Promoting Authentic Learning Using a Problem-based Format** **(Earth)***(Elementary–High School)* Independence B, Sheraton**Barney Peterson** (*bpeterson@everettsd.org*), James Monroe Elementary School, Everett, Wash.**Gary Popiolkowski** (*gary.popiolkowski@chartiers-houston.com*), Chartiers-Houston Jr./Sr. High School, Houston, Pa. Use Earth System Science Education Alliance resources to provide opportunities for students to use basic science understandings and research skills to solve real-world problems.

## SESSION 36 (two presentations)

*(Middle Level–High School)* Independence C, Sheraton**Using the Community as Your Classroom** **(Env)****Jon P. Yoder** (*yoder\_jon@salkeiz.k12.or.us*), Salem-Keizer School District, Salem, Ore.

Contextualize student knowledge and skills with this community-based approach from the Northwest Center for Sustainable Resources. Free materials!

**How Much Dump Do You Dump? (Env)**  
**Vanashri S. Nargund** (*vnargund@umail.iu.edu*) and **Jean S. Lee** (*jeanlee@indiana.edu*), Indiana University, Bloomington

Through science and math interdisciplinary inquiry activities, students develop awareness about the amount of waste they produce and ways to reduce and conserve natural resources.

**SESSION 37**

**The ARMADA Project: Research and Mentoring Experiences for Teachers (Gen)**  
(General) *Independence D, Sheraton*

**Andrea Kecskes** (*akecskes@gso.uri.edu*) and **Gail Scowcroft** (*gailscow@gso.uri.edu*), University of Rhode Island, Narragansett

The ARMADA Project has placed teachers in research experiences from pole to pole. We'll share the results, including classroom transfer, mentoring impacts, and professional growth.

**11:00 AM–12 Noon Workshops**

✓ **The “Don’t Bug Me” Integrated Pest Management Challenge: Learning Science Through Agriculturally Based Problem Solving (Bio)**

(Elementary) *Hall D/Room 5, Convention Center*  
**Deborah Dempsey** (*deb@blueheroneducation.us*) and **Carolyn DeCristofano** (*carolyn@blueheroneducation.us*), Blue Heron Education, Plympton, Mass.

Agriculturally based problem-solving activities connect rural students’ classroom learning with their world. Integrate data, literacy, and insect information to protect your cranberry crop from pests!

🍏 **Connecting Math and Science Through Inquiry: Engaging Lessons for Middle School Kids (Gen)**

(Elementary–Middle Level) *Hall D/Room 6, Convention Center*  
**Lynn Kirby** (*lkirby@mail.utexas.edu*) and **Jason Ermer** (*jerner@austin.utexas.edu*), The University of Texas at Austin

Experience science lessons with math applications (or is it math lessons with science applications?!) that challenge students to take charge of their learning.

**Ramps and Pathways: An Inquiry-based Approach to Physical Science in Early Childhood (Chem)**

(Preschool–Elementary) *Hall D/Room 9, Convention Center*  
**Lawrence Escalada** (*lawrence.escalada@uni.edu*) and **Rosemary Geiken** (*rosemary.geiken@uni.edu*), University of Northern Iowa, Cedar Falls

Presenter: Lawrence Escalada

Experiment with ramps and pathways and learn how to support young children’s learning about force and motion and inquiry.

**Outta This World (Earth)**

(Preschool–Elementary) *Hall D/Room 10, Convention Center*  
**Melissa D. Cook** (*mcook@melissaisd.org*), McKillop Elementary School, Melissa, Tex.

Join us for an inspiring unit of fun and enriching space activities. Explorations include aerodynamics, astronaut training, rocket launching, astronomy, and interplanetary travel.

**Strengthening Science Writing and Inquiry: Helping Students Develop Claims with Evidence and Reasoning (Gen)**

(Elementary) *Hall D/Room 15, Convention Center*  
**Katherine L. McNeill** (*kmcneill@bc.edu*), Boston College, Chestnut Hill, Mass.

**Dean M. Martin** (*anderson.martin@netzero.com*), Gardner Pilot Academy, Boston, Mass.

Using the claim, evidence, and reasoning framework, we’ll explore the model through examination of student writing, scaffolding techniques, and videos from elementary classrooms.

**Connecting Science and Math (Gen)**

(Elementary) *Hall D/Room 16, Convention Center*  
**Glenda S. Pepin** (*gpepin@clemson.edu*), Clemson University, Greenville, S.C.

These inquiry-based investigations demonstrate how science and mathematical ideas can interconnect and build on one another. Come explore model lessons with explicit science and mathematical connections.

**Starting Them Early: Science Learning in PreK and Early Elementary (Gen)**

*(Preschool–Elementary) Hall D/Room 17, Convention Center*  
**Mia Jackson**, David Heil & Associates, Inc, Portland, Ore.

Discover innovative resources and best practices designed to lay the foundation for lifelong science learning. Appropriate for preK to early elementary teachers.

**Accessing Science Ideas (Bio)**

*(Middle Level) Hall D/Room 18, Convention Center*

**Gilly M. Puttick** (*gilly\_puttick@terc.edu*) and **Karen Mutch-Jones** (*karen\_mutch-jones@terc.edu*), TERC, Cambridge, Mass.

Learn how content enhancements in two widely used middle school science units make science process and content accessible to students with executive-function learning disabilities.

**Activities, Materials, and Resources That Teach Science (Phys)**

*(Elementary–Middle Level) Hall D/Room 19, Convention Center*

**Christine Wheeler** (*stacy@jlab.org*), **Lisa Surles-Law** (*surles@jlab.org*), and **Steve Gagnon** (*gagnon@jlab.org*), Thomas Jefferson National Accelerator Facility, Newport News, Va.

Physical science activities and resources will be presented by teachers who have participated in the Department of Energy's Academies Creating Teacher Scientists program at the Thomas Jefferson National Accelerator Facility (Jefferson Lab). Leave this session with activities to use in class on Monday!

**Earth as a System: Seasons and the Seas (Gen)**

*(Middle Level) Hall D/Room 21, Convention Center*

**Joyce Tugel** (*jtugel@mmsa.org*), Maine Mathematics and Science Alliance, Augusta

Transform the study of seasons into an exploration of interactions between land, oceans, and atmosphere with these lessons from a NOAA-funded project.

**Hook 'em into Learning Science (Gen)**

*(Middle Level) Hall D/Room 23, Convention Center*

**Elizabeth Voit** (*elizabeth\_voit@yahoo.com*), Wade Park School, Cleveland, Ohio

Increase students' participation and cooperation in middle grades science classes with "hooks." I'll share examples of student work and finished projects.

**Inquiry-based Hands-On Activities and Demonstrations (Gen)**

*(Elementary–High School) Hall D/Room 26, Convention Center*

**John W. Fedors** (*jfedors@johnfedors.com*), Science Activities, Lincoln, Calif.

Explore energy, magnetism, diffusion, heat transfer, hydrophilic/hydrophobic materials, and forensic potentials with these hands-on activities and demonstrations.

**Connecting Undergraduates to Science Through Authentic Inquiry-based Investigations (Gen)**

*(General) Hall D/Room 28, Convention Center*

**Stephen Witzig** (*sbwitzig@mizzou.edu*) and **Sandra K. Abell** (*abells@missouri.edu*), University of Missouri, Columbia

Learn how to transform "cookbook" labs to engage students in meaningful inquiries that mirror authentic science.

**What Makes People Happy in Science Classrooms: Implications from Current Doctoral Research (Gen)**

*(General) Commonwealth B, Loews*

**Diane Walker** (*dwalker@nmsu.edu*), New Mexico State University, Las Cruces

Let's look at what makes teachers and students happy in science classrooms and how that information can improve science teaching and learning.

**Teaching Insulin: The Gene, the Protein, and Glucose Homeostasis (Bio)**

*(High School–College/Informal Ed.) Commonwealth C, Loews*

**Tim Herman** (*herman@msoe.edu*) and **Karen DeBoer**, Center for BioMolecular Modeling, Milwaukee School of Engineering, Milwaukee, Wis.

We will use a variety of innovative physical models of the insulin protein and its gene, along with computer visualization tools, to demonstrate an active-teaching approach focused on insulin.

**Modeling Isn't Just for the Runway (Chem)**

*(High School–College) Regency B, Loews*

**Todd D. Morstein** (*morsteint@sd5.k12.mt.us*), Flathead High School, Kalispell, Mont.

Data collection is only the beginning. We will model different mathematical models to help explain experimental data.

**The Science of Food Safety** (Bio)  
(Middle Level–High School) 307, Marriott  
**Peggy Vavalla**, DuPont Co., Wilmington, Del.  
Explore food safety issues such as food-borne illness, *Salmonella* poisoning, chemical additives, and packaging to prevent microbial growth, slow oxidation of fresh fruit, and enhance nutrient content.

**Amazing Things Cells Can Do** (Bio)  
(Middle Level–High School) Franklin 1, Marriott  
**Louisa A. Stark** ([louisa.stark@utah.edu](mailto:louisa.stark@utah.edu)), University of Utah, Salt Lake City  
Bring your cell unit to life with a 3-D movie and interactive animations. Online and classroom activities that explore organelles and cell communication are available free at <http://learn.genetics.utah.edu>.

**Oh Me! Oh My! Mitosis and Meiosis!** (Bio)  
(Elementary–High School) Franklin 4, Marriott  
**Carice L. Ambruster** ([ambrusterc@wcschools.com](mailto:ambrusterc@wcschools.com)), West Elementary School, Mount Juliet, Tenn.  
**Cindi Smith-Walters** ([csmithwa@mtsu.edu](mailto:csmithwa@mtsu.edu)) and **Kim C. Sadler** ([ksadler@mtsu.edu](mailto:ksadler@mtsu.edu)), Middle Tennessee State University, Murfreesboro  
Need a novel, low-cost, and engaging set of activities to teach the steps of cell division? We've got it! Join us for a hands-on workshop and free M&M kit!

**Physics Near Zero** (Phys)  
(Middle Level–College) Franklin 5, Marriott  
**Taha Massalha** ([tahamas@gmail.com](mailto:tahamas@gmail.com)), The Academic Arab College of Education, Haifa, Israel  
I focused the attention of physics classes, many times, to the physical changes that occur in zero environments. Zero crossed over from mathematics to physics.

**Forensic Science: The Integration of Many Sciences** (Gen)  
(Middle Level–High School) Grand Salon A, Marriott  
**Jacklyn Bonneau** ([bonneau@wpi.edu](mailto:bonneau@wpi.edu)), Massachusetts Academy of Math & Science, Worcester  
Complete two activities in the basic sciences, each with a twist that captures students' interest and motivates them to solve the mystery.

**Thematic-based Science Teaching** (Gen)  
(Middle Level–High School) Grand Salon B, Marriott  
**Ollie I. Manley** ([omanley@gsu.edu](mailto:omanley@gsu.edu)), George State University, Atlanta  
Learn how to develop interdisciplinary science units using *Bloom's Taxonomy* and the *Theories of Multiple Intelligence and Engagement*.

**Use Polymer Science to Create 3-D Objects in Your Classroom** (Chem)  
(Middle Level–College) Grand Salon C, Marriott  
**Joe Muskin** ([jmuskin@illinois.edu](mailto:jmuskin@illinois.edu)), University of Illinois at Urbana-Champaign, Urbana  
Using a photoactive polymer, you can create a device that will actually "print" 3-D plastic objects in your classroom with PowerPoint and a data projector.



**NSTA Press Session: Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It** (Phys)  
(Preschool–Middle Level) Grand Salon D, Marriott

**Bill Robertson** ([wrobert9@ix.netcom.com](mailto:wrobert9@ix.netcom.com)), NSTA Press Author, Woodland Park, Colo.  
Tired of teaching a subject you don't fully understand yourself? Join the author of the *Stop Faking It* books for hands-on activities and a solution to your problem. Lame jokes a definite possibility.

**Informal Science Day Session: Designing Hands-On Engineering Activities with Creative, Reusable, Affordable Products** (Phys)  
(Informal Education) Grand Salon E/F, Group 2, Marriott  
**Lydia Beall** ([lbeall@mos.org](mailto:lbeall@mos.org)) and **Patricia DeGiulio** ([pdegiulio@mos.org](mailto:pdegiulio@mos.org)), Museum of Science, Boston, Mass.  
Presider: Terri Stern ([terri.stern@yale.edu](mailto:terri.stern@yale.edu)), Yale Peabody Museum of Natural History, New Haven, Conn.

Engage in a hands-on engineering activity and learn the secrets to designing a successful informal engineering program for grades 4–10. Handouts.

**Outstanding Science Trade Books' Connections to Reality by Presidential Awardees (Gen)**

(General) *Grand Salon H, Marriott*

**Kathleen B. Horstmeyer** (*khors3500@aol.com*), Educational Consultant, Chester, Conn.

**Helen Chang** (*helenchang47@gmail.com*), Millstone River School, Plainsboro, N.J.

**Conni Crittenden** (*crittec@gmail.com*), Williamston (Mich.) Community Schools

**Linda Froschauer** (*fro2@mac.com*), 2006–2007 NSTA President, and Westpoint, Conn.

**Alma S. Miller**, Washington, D.C.

**Norma Neely**, Truman State University, Kirksville, Mo.

**Kathy Renfrew** (*kathy.renfrew@state.vt.us*), Vermont Dept. of Education, Montpelier

**Ruth Ruud**, Fairview, Pa.

**Elana Erwin Schreiber** (*elana.schreiber@ssdsboston.org*), Solomon Schechter Day School of Greater Boston, Newton, Mass.

**Martha Short** (*mshort@ltd.net*), SEPA, Jackson, Mo.

**Julie Taylor**, Consultant/Solar System Educator, Victorville, Calif.

**Marlee Tierce** (*mtierce@aol.com*), Hampton, Ga.

**Deb Wickerham** (*dwickerham@findlaycityschools.org*), Chamberlain Hill Intermediate School, Findlay, Ohio

Presidential Awardees will present the outstanding science trade books selected by the CBC/NSTA committee and demonstrate connections to the real world through inquiry and hands-on and standards-based activities.

**Making Flexbooks Using CK12.org Software (Phys)**  
(Middle Level–High School) *Grand Salon J, Marriott*

**James H. Dann** (*jamdann@gmail.com*), Menlo School, Atherton, Calif.

**James J. Dann** (*dannja22@hotmail.com*), Natomas School District, Vacaville, Calif.

Make your own textbook and edit it to fit your class. It's free, the software is easy to use, and there are lots of books/material already posted! Participants are encouraged to bring their own laptops.

Age is just a number.  
Life is what you make of it.



The NSTA Retired Advisory Board invites you to a vibrant and useful information-sharing session. Join your fellow colleagues and share your ideas about staying active both in and out of the profession.

**Before and After Retirement:  
Practicalities and Possibilities**

Saturday, March 20  
11:00 AM–12 Noon  
*Philadelphia Marriott, 308*

For information on the Retired Members Advisory Board, contact Marily DeWall, chair, at *mdewall@cox.net*.



**Conceptual Continuity in Chemistry: Connecting Multiple Topics** (Chem)

(High School) Grand Salon K, Marriott

**Marion M. Reeves** (*mmree@uga.edu*), **Aris Reynold Cajigal** (*aris@uga.edu*), and **Gerri L. Cole** (*glcole@uga.edu*), University of Georgia, Athens

How could one lab connect multiple topics in chemistry? Experience the connection between reaction rates, equilibrium, and acid-base topics.

**Stellar Bar Codes** (Earth)

(High School–College/Informal Ed.) Freedom E, Sheraton

**Donna L. Young** (*donna.young@tufts.edu*), The Wright Center for Science Education, Tufts University, Medford, Mass.

**Pamela Perry** (*pperry@lewistonpublicschools.org*), Lewiston High School, Brunswick, Maine

Use spectra of different types of stars to investigate how the study of spectra provides scientists with important information about stellar temperatures and evolutionary history.

**Inquiring About the Universe: Build Skills (Phase 3)** (Earth)

(Middle Level–High School) Freedom G, Sheraton

**Jacob Noel-Storr** (*jake@cis.rit.edu*), Rochester Institute of Technology, Rochester, N.Y.

**Emilie Drobnes** (*emilie.drobnes@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

This is the third in a series of workshops from NASA Goddard Space Flight Center and the Rochester Institute of Technology Insight Lab to support your inquiry-based teaching of astronomy/space science.

**Adolescent Literacy and Science: An Interdisciplinary Approach** (Gen)

(General) Freedom H, Sheraton

**Terry Salinger**, American Institutes for Research, Washington, D.C.

**Carolyn Jacobs** (*carolyn\_jacobs@wgbh.org*), WGBH Teachers' Domain, Boston, Mass.

We will examine research conducted on adolescent literacy across content areas as well as opportunities, challenges, and best practice for science teachers.

**Urban Astronomy** (Earth)

(Middle Level–High School) Independence A, Sheraton

**Randall H. Landsberg** (*randy@oddjob.uchicago.edu*), University of Chicago, Ill.

**Walter G. Glogowski** (*wglogowski@ridgenet.org*), Ridgewood High School, Norridge, Ill.

Bright lights, big city...but it's still possible to engage students with hands-on explorations, like using tall buildings to measure the size of the universe.

**NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon** (Earth)

(Elementary–High School) Liberty A/B, Sheraton

**Michelle C. Harris** (*michelle\_harris@apsva.us*), Wakefield High School, Arlington, Va.

**Michael J. Passow** (*michael@earth2class.org*), Dwight Morrow High School, Englewood, N.J.

**Roberta M. Johnson** (*rmjohnsn@ucar.edu*) and **Lisa Gardiner** (*egardine@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.

**Samuel Bowser** (*bowser@wadsworth.org*), New York State Dept. of Health, Albany

**Ron Fabick** (*rfabick@zoominternet.net*), NESTA, Medina, Ohio

**Lollie Garay**, Redd School, Houston, Tex.

**Pamela Harman**, SETI Institute, Mountain View, Calif.

**Teresa Kennedy** and **Nandini McClurg**, The GLOBE Program, Tyler, Tex.

**Bob King** (*kingwhhs47@hotmail.com*), Friendship Christian School, Lebanon, Tenn.

**Tina King** (*tinakingtn@hotmail.com*), West Wilson Middle School, Mount Juliet, Tenn.

**Carol Landis**, The Ohio State University, Columbus

**Peter Larmour** (*peterlarmour25@hotmail.com*), St. Dagobert II of Austrasia, Claverack, N.Y.

**Susan W. Moore** (*susan.w.moore@nasa.gov*), SSAI/NASA Langley Research Center, Hampton, Va.

**Robert Myers** (*bob\_myers@strategies.org*), Institute for Global Environmental Strategies, Arlington, Va.

**Christopher J. Petrone** (*petrone@vims.edu*), Virginia Institute of Marine Science, Gloucester Point

**Carole Reesink** (*creesink@bemidjistate.edu*), Bemidji State University, Bemidji, Minn.

**Pamela Whiffen** (*pwpwr@aol.com*), NASA Educator Ambassador, Phoenix, Ariz.

Join NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!



**Integrating Science and Math Using NASA Materials (Earth)***(Middle Level)**Logans 2, Sheraton***Ota Lutz** (*ota.lutz@jpl.nasa.gov*), NASA Jet Propulsion Laboratory, Pomona, Calif.

Learn how science and math work together in space exploration. Try some standards-based hands-on activities you can quickly and easily implement in your classroom.

**Soils: More Than the Dirt Under Your Feet (Earth)***(Middle Level–High School/Inf. Ed.) Philadelphia North, Sheraton***Margaret A. Holzer** (*mholzer@monmouth.com*), Chatham High School, Chatham, N.J.**Sherry Fulk-Bringman** (*sherryfb@purdue.edu*), Purdue University, West Lafayette, Ind.**Susan Chapman** (*schapman@agronomy.org*), Soil Science Society of America, Madison, Wis.**Clay Robinson**, West Texas A&M University, Canyon**David Lindbo** (*david.lindbo@ncsu.edu*), Soil Science Society of America, North Carolina State University, Raleigh

Soil science is the best-kept secret to meeting earth science, chemistry, and biology standards. Come learn about soil resources and try some activities.

**Crabs Count Continued: A 10-Year Report (Env) (General)***Philadelphia South, Sheraton***Virginia Baltay**, Science Consultant, Guilford, Conn.**Elizabeth H. Taylor** (*etaylor@branford.k12.ct.us*), Walsh Intermediate School, Branford, Conn.

Crabs Count is an integrated 10-year population study of the invasive crab *Hemigrapsus sanguineus* for middle level students. We'll share methods, data, and hands-on activities.

**11:00 AM–12 Noon Exhibitor Workshops****Tough Topics in Chemistry and Physical Science: Chemical Reactions (Chem)***(Grades 6–12)**112A/B, Convention Center*

Sponsor: PASCO

**Geoffrey Clarion**, Rocklin High School, Rocklin, Calif.

This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of chemistry and physical science investigations—chemical reactions. In this hands-on workshop, you will quantify your observations of chemical reaction in a standards-based SPARKlab and experience how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

**Tough Topics in Life Science: Modeling Pressure Changes in the Lungs (Bio)***(Grades 6–12)**113A, Convention Center*

Sponsor: PASCO

**Ryan Reardon**, Alabama School of Fine Arts, Birmingham

This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of life science investigations—the physiology of breathing. In this hands-on workshop you will build a human lung model and measure the changes in pressure experienced in the lungs during breathing. Be one of the first to see how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

**Teenagers, Cars, and Driving...How to Get High School Students Actively Involved in Physical Science** (Phys)

(Grades 9–12)

201A, Convention Center

Sponsor: It's About Time

**Mary Lynn Jensen**, It's About Time, Armonk, N.Y.

Join us for hands-on activities to help your students become better drivers *AND* better physical science students. Discover the benefits of seatbelts and explore the different levels of protection provided by lap belts, shoulder harnesses, and air bags. You'll leave with hands-on activities that you can implement in your own classroom.

**Moon Phases: Teaching in an Immersive Environment** (Earth)

(Grades K–12) Booth #641, Exhibit Hall, Convention Center

Sponsor: Spitz, Inc.

**David Bradstreet** ([dbradstr@eastern.edu](mailto:dbradstr@eastern.edu)), Eastern University, St. Davids, Pa.

Moon phases is a frequently taught, challenging subject. Unfortunately, misconceptions are often taught or reinforced. Join educator/astronomer Dr. David Bradstreet and learn how our curriculum for immersive 3-D dome teaching is used to explore moon phases in a memorable, entertaining way.

**11:00 AM–12:30 PM Presentations**

SESSION 1

**PDI McREL Pathway Session: Scientific Discourse in the Classroom** (Gen)

(General)

401/402, Marriott

**Bj Stone** ([bstone@mcrel.org](mailto:bstone@mcrel.org)), Mid-continent Research for Education and Learning, Denver, Colo.

To learn science concepts, students need to talk about their ideas to clarify their thinking. Learn how to use inquiry questioning strategies to get students to discuss in class and make sense of their learning experiences. Practice using question stems.

SESSION 2

**PDI LHS Pathway Session: Differentiating Instruction Related to Science and Societal Issues** (Bio)

(Middle Level–High School)

404, Marriott

**Barbara Nagle** ([bnagle@berkeley.edu](mailto:bnagle@berkeley.edu)), Lawrence Hall of Science, University of California, Berkeley

**Kathaleen Burke** ([kathaleenburke1@mac.com](mailto:kathaleenburke1@mac.com)), Buffalo Science Teachers' Network, Buffalo, N.Y.

**Donna Markey**, Vista Magnet Middle School, Vista, Calif.

Participate in life science activities related to health and environmental issues and explore strategies you can use to modify activities for diverse learners in your classroom.

**11:00 AM–1:00 PM Presentations**

SESSION 1

**PDI TERC Pathway Session: Thinking Outside the Coordinate Graph—From Data to Art to Understanding** (Gen)

(Elementary–Middle Level)

406, Marriott

**Monica Chrambach** ([monica\\_chrambach@shs.org](mailto:monica_chrambach@shs.org)), Shady Hill School, Cambridge, Mass.

Presider: Sally Crissman, TERC, Cambridge, Mass.

Explore the benefits of finding nontraditional ways for students to represent data and find meaning in those representations.

SESSION 2

**PDI EDC Pathway Session: Linking Science and Literacy Through Nature Journals** (Gen)

(Elementary)

411/412, Marriott

**Mark Baldwin** ([mbaldwin@rtpi.org](mailto:mbaldwin@rtpi.org)), Roger Tory Peterson Institute of Natural History, Jamestown, N.Y.

I'll share three easy-to-learn, easy-to-teach methods to introduce your science students to nature journals as a tool for linking inquiry-based science to literacy.

**11:30 AM–12 Noon Presentation****SESSION 1****Mars Education Student Data Teams: Students Exploring the Red Planet (Earth)***(High School)**Freedom F, Sheraton***Presenter to be announced**

Student teams work with scientists to analyze Mars data, reaching out to other students, teachers, and the public through online presentations, articles, and websites.

**12 Noon–1:15 PM Exhibitor Workshop****Educational Science Lab Design and Implementation for the 21st Century Made Easy (Gen)***(Grades K–12)**109A/B, Convention Center*

Sponsor: Frey Scientific, School Specialty Science

**Gordon Strohminger**, Frey Scientific, School Specialty Science, Mansfield, Ohio

Come explore the process of designing and implementing educational science labs. See how technology and room design can push conventional boundaries to help students better understand science concepts. We'll discuss the lab design process, furniture and equipment basics, safety and accessibility, integration of technology, and 21st-century trends.

**12 Noon–1:30 PM Exhibitor Workshops****How to Design a Safe and Efficient Science Laboratory (Gen)***(Grades 7–12)**103C, Convention Center*

Sponsor: Flinn Scientific, Inc.

**Greg Chyson**, Flinn Scientific, Inc., Batavia, Ill.

Get answers to all your laboratory design questions! We'll share design priority tips and safety information gathered from years of experience helping science teachers plan their laboratory construction and remodeling projects. You'll learn what features to include in your laboratories and what common mistakes to avoid.

**ScholAR's Got a Brand-new Bag (Chem)***(Grades 6–12)**104A/B, Convention Center*

Sponsor: Sargent-Welch

**Jammin' Mark Meszaros** ([mark\\_meszaros@vwr.com](mailto:mark_meszaros@vwr.com)), Sargent-Welch, Buffalo, N.Y.

Chemistry ain't a drag 'cause ScholAR Chemistry's got it in the bag! Get jammin' with the NEW In the Bag Inquiry Activity series. Each activity is performed in a zipper-lock bag and is easy to perform and repeat. Practice performing five different activities and converting them into inquiry activities in this hands-on workshop.

**GIS for Earth Science Inquiry (Earth)***(Grades 6–College)**105A/B, Convention Center*

Sponsor: ESRI

**Joseph Kerski** ([jkerski@esri.com](mailto:jkerski@esri.com)), ESRI, Redlands, Calif.

**Roger T. Palmer** ([roger@gisetc.com](mailto:roger@gisetc.com)), GISetc, Dallas, Tex.

Explore how and why GIS (geographic information systems) and other geospatial technologies (GPS and remote sensing) are essential in earth science education and careers. Investigate local to global topics via practical classroom activities supporting science standards and inquiry. Receive free GIS software and classroom resources. For more information, visit us online at <http://edcommunity.esri.com>.

**Teaching Cells, Viruses, Disease, and Immunology with Free Resources from HHMI (Bio)***(Grades 9–College)**106A/B, Convention Center*

Sponsor: Howard Hughes Medical Institute

**Ann I. Brokaw**, Rocky River High School, Rocky River, Ohio

Enhance classroom instruction of cellular biology, biology of viruses, immunology, HIV/AIDS, and other infectious diseases with teacher-ready curriculum ideas using Howard Hughes Medical Institute (HHMI) resources, including DVDs and the BioInteractive website. Participants will receive free HHMI DVDs and teacher-generated curriculum guides, including classroom-ready activities.

**Optics with Light and Color: Bright Ideas—Our New Take on an Old Favorite** (Phys)

(Grades 5–12) 108A, Convention Center

Sponsor: CPO Science, School Specialty Science

**Erik Benton**, CPO Science, School Specialty Science, Nashua, N.H.

Our new Optics with Light and Color kit comes with LED flashlights, a laser, lenses, a prism, and more. Mix colors of light, learn about human vision, use diffraction grating glasses, measure angles of reflection and refraction, and experience total internal reflection when you shine a laser into a prism.

**Living by Chemistry: What Shape Is That Smell?** (Chem)

(Grades 9–12) 110A/B, Convention Center

Sponsor: Key Curriculum Press

**Jeffrey Dowling** ([jdowling@keypress.com](mailto:jdowling@keypress.com)), Key Curriculum Press, Emeryville, Calif.

Teach rigorous chemistry with guided inquiry! Let's explore activities that help students understand molecular structure and other core chemistry concepts through a smell context. Sample lessons from Living by Chemistry provided.

**Teaching Inquiry Science with Toys and Treats** (Gen)

(Grades 3–12) 111A/B, Convention Center

Sponsor: McGraw-Hill School Education Group

**Ralph Feather**, Bloomsburg University, Bloomsburg, Pa.  
**Sandy Feather**, Bloomsburg, Pa.

Learn fun, practical, and engaging hands-on inquiry teaching ideas using toys and treats. Everyone is a winner as you experience these classroom strategies and participate in the workshop activities.

**Increasing Physics Enrollments** (Phys)

(Grades 9–12) 113B, Convention Center

Sponsor: Pearson

**Paul Hewitt**, Retired Educator, St. Petersburg, Fla.

The low attendance in physics courses compared with other science courses is related to the view that physics is a “killer course,” one that is 90% math problems and 10% physics. This can be turned around. When a learner's first physics course is insightful and delightful, the rigor of a second course is welcomed. This workshop will demonstrate how *Conceptual Physics* presents an overview of the central concepts of nature in a mathematical way, but not necessarily in a computational way. There's a difference!

**Get Charged Up with Educational Innovations!** (Phys)

(Grades 5–12) 113C, Convention Center

Sponsor: Educational Innovations, Inc.

**Ken Byrne**, Educational Innovations, Inc., Norwalk, Conn.

Fun activities with static electricity. Make your own Franklin Static Motor and discover a plethora of activities to get your class charged up! Make and take and door prizes!

**Science Notebooking: Integrating Writing and Science** (Gen)

(Grades K–5) 201B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Solve a high-seas mystery in this workshop featuring lessons and materials from the STC Program™ unit Microworlds. Learn how student notebooks and scaffolded inquiry can increase student involvement and classroom outcomes. Explore how to create a mystery story using concepts your students have learned.

**Water Quality and Environmental Science with Vernier** (Env)

(Grades 7–College) 202A, Convention Center

Sponsor: Vernier Software & Technology

**Dan Holmquist** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Explore how to use Vernier LabQuest and sensors to study water quality and environmental science in the field. Learn how to care for your sensors, including their calibration and data management techniques. See the new Vernier GPS sensor and learn how to map your sampling sites with Google Maps.

**Video Analysis with Vernier** (Gen)

(Grades 7–College) 202B, Convention Center

Sponsor: Vernier Software & Technology

**Rick Sorensen** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Interested in learning about creating and analyzing your own videos in your science classroom? Come see how you can use the Logger Pro software from Vernier along with a digital video camera or still digital camera to enhance your data collection experiments. Ideas from the new book *Physics with Video Analysis*, written by the LivePhoto Physics Project, will be demonstrated. Topics will include video-synchronized data collection, video data analysis, and still digital photo analysis.

### **MS Degree in Geosciences via Distance Learning from Mississippi State University (Earth)**

(Grades K–12) 203A, Convention Center

Sponsor: Mississippi State University

**Kathleen M. Sherman-Morris** (*kms5@msstate.edu*) and **Doug Gillham** (*dmg3@msstate.edu*), Mississippi State University, Mississippi State, Miss.

Learn how you can earn a master's degree in geosciences via distance learning through the Teachers in Geosciences program. Our 12-course, 36-credit hour graduate program is designed to take two years and includes courses in meteorology, geology, planetary science, oceanography, hydrology, and environmental geoscience. Over 250 students from across the country and around the world are enrolled.

### **Human Health and Global Environmental Change for Educators (Env)**

(Grades 6–College) 203B, Convention Center

Sponsor: Center for Health and the Global Environment, Harvard Medical School

**Margaret Thomsen Katsumi** (*margaret\_katsumi@hms.harvard.edu*), Center for Health and the Global Environment, Harvard Medical School, Boston, Mass.

**Heather Foley** (*heather\_foley2@hms.harvard.edu*), Harvard Medical School, Boston, Mass.

The Harvard Medical School Human Health and Global Environmental Change course will be highlighted in this session. We will explore curriculum materials and discuss how to incorporate the connection between human health and the environment in already existing curricula, giving an overview of free-of-charge lectures and materials.

### **Introduction to Wisconsin Fast Plants® (Bio)**

(Grades K–12) 204A, Convention Center

Sponsor: Carolina Biological Supply Co.

#### **Carolina Teaching Partner**

Students can actively take part in science with new hands-on activities using Wisconsin Fast Plants. These minuscule and quick-growing plants are ideal classroom tools for exploring environmental effects, variation, life cycle, and nutrient cycling. Participants work with several hands-on activities, including planting and pollinating seeds. Free materials.

### **Amplify Your Genetics Teaching Skills with Carolina's New Inquiries in Science™ Biology Units (Bio)**

(Grades 9–12) 204B, Convention Center

Sponsor: Carolina Biological Supply Co.

#### **Carolina Teaching Partner**

Want to crack the mystery of genetics for your students?

Increase student achievement on difficult concepts such as nucleic acids, genetic inheritance, and biotechnology by using a guided-inquiry approach. Carolina's Inquiries in Science Biology units provide hands-on activities to make teaching challenging topics effortless. Free teacher materials and door prizes!

### **Building Inquiry with BSCS Science: An Inquiry Approach (Gen)**

(Grades 9–12) 304, Convention Center

Sponsor: Kendall Hunt Publishing Co.

**Betty Stennett**, BSCS, Colorado Springs, Colo.

*BSCS Science: An Inquiry Approach* is a three-year multidisciplinary high school science program. Students get every science every year through constructivist learning and inquiry activities. This workshop will give you an introduction to the program as well as a look at several learning strategies used in the program to help students make sense of scientific concepts.

### **A Natural Approach to Chemistry: Teaching About Spectrophotometry (Chem)**

(Grades 10–12) Hall D/Room 2, Convention Center

Sponsor: LAB-AIDS, Inc.

**Tom Hsu**, Author, Andover, Mass.

Join author Tom Hsu for a special preview and hands-on examination of selected laboratory activities from *A Natural Approach to Chemistry*, a new high school program that takes a fresh look at chemistry today. It features a new, innovative probeware system that is rugged, simple to use, and makes accurate, quantitative measurements accessible to all students. Selected lab activities will address concepts related to heat, specific heat, and temperature. Selected labs and other program materials will be provided for all participants.

### **Camera Magic: Strategies to Incorporate Visual Presenters into Your Lessons (Gen)**

(Grade 7) Hall D/Room 4, Convention Center

Sponsor: Lumens Integration, Inc.

**Eddy Boyette**, Lumens Integration, Inc., Fremont, Calif. Science is about seeing, touching, and understanding. With small objects, sometimes the best way to help students get close is through magnification and projection. Document cameras show all sides of objects and help the students in the back of the room see as much detail as those in the front row.

**12 Noon–2:00 PM ASTE/NSELA Luncheon**  
**Science Teachers as Researchers: Stories from the Field (M-6)**

(Tickets Required: \$55)

Lescaze, Loews



**Janice Koch** ([janice.koch@hofstra.edu](mailto:janice.koch@hofstra.edu)), Professor Emeritus, Science Education, Hofstra University, Hempstead, N.Y.

What happens when teachers examine their own practice and learn firsthand what works and what doesn't? Discover how K–12 science teachers explore their students'

experiences as science learners!

*Janice Koch, PhD, is professor emeritus of science education at Hofstra University on Long Island, New York, where she directed IDEAS, the Institute for the Development of Education in the Advanced Sciences. This outreach institute fosters public understanding of science as well as furthering the professional development of pre-college teachers of science. Dr. Koch is past president of the Association for Science Teacher Education (ASTE), an affiliate of NSTA and a partner in furthering pre-college science education and lifelong science learning. Janice Koch is known for her seminal work in encouraging the participation of girls and young women in science, engineering, and technology. She has many publications in edited texts and professional journals addressing science education, gender and science, and making science accessible to underrepresented groups.*

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**12 Noon–2:00 PM CESI/NSTA Elementary Science Luncheon**

**Making Science Meaningful (M-7)**

(Tickets Required: \$55)

Regency A, Loews



**Emily Morgan** ([emily@pictureperfectscience.com](mailto:emily@pictureperfectscience.com)), Science Leader, High AIMS Consortium, West Chester, Ohio

**Karen Ansberry** ([karen@pictureperfectscience.com](mailto:karen@pictureperfectscience.com)), Elementary Science Curriculum Leader, Mason City Schools, Lebanon, Ohio

*I sincerely believe that for the child...it is not half so important to know as to feel. If facts are the seeds that later produce knowledge and wisdom, then the emotions and the impressions of the senses are the fertile soil in which the seeds must grow. — Rachel Carson*

Rachel Carson's words still ring true today. As elementary teachers, you have the unique opportunity each and every day to "prepare the soil"...to give your students a sense of the beauty of science and nature and of the excitement of the new and the unknown. The goal in science teaching is not for students to memorize scientific facts but to see the world with wonder and awe, to ask questions, and to search for answers.

*Emily Morgan believes that every teacher is a reading teacher and enjoys writing lessons that use engaging picture books and integrate reading strategies. She is currently the science leader for the High AIMS Consortium in Cincinnati, where she plans professional development opportunities for science teachers.*

*As a former classroom teacher, Karen Ansberry understands that teachers are crunched for time and need high-interest, ready-to-use lessons that integrate children's literature, reading strategies, and science. She is currently the elementary science curriculum leader for Mason City Schools.*

*Ansberry and Morgan's books Picture-Perfect Science Lessons and More Picture-Perfect Science Lessons have helped teachers deepen their content knowledge and integrate science and reading in a meaningful way.*

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**12 Noon–2:00 PM NSTA/NMLSTA Middle Level Luncheon****The City of Materials: Using 21st-Century Skills (M-8)***(Tickets Required: \$55)**Howe, Loews*

**Debbie Goodwin** (*nywin@hotmail.com*), ASM Master Teacher, Chillicothe High School, Chillicothe, Mo.

**Andrew Nydam** (*andrewnydam@hotmail.com*), ASM Master Teacher, Olympia High School, Olympia, Wash.

Examining the field of material science, Debbie Goodwin and Andy Nydam will show the connections to science and all branches of engineering. Demos, humor, and audience participation will engage you in the “stuff” of the everyday world. The City of Materials, a new website sponsored by ASM International, is aimed at middle school students and teachers. We’ll look at the website, focusing on the national standards that promote engineering as a career incorporating all levels of STEM.

*Debbie Goodwin has 27 years of teaching experience in biology, chemistry, materials science, and physical science. Debbie has taught at Chillicothe High School for 15 years and is in her 13th year of teaching Materials Science and Technology (MST). She serves as an ASM Foundation “Master Teacher” for Materials Science Teacher Camps, as a lead trainer for the Materials Camp® Master Teacher training workshops, and a Polymer Ambassador for the Intersociety Polymer Education Council.*

*Andy Nydam is a licensed aircraft mechanic, Master Technician Automotive, and Master Technician Nissan Motor Corporation (first in nation). He was a community college instructor for 16 years, high school teacher for 23 years, and materials science teacher for 17 years. He has worked on several DOE and NSF grants to bring science and technology into the classroom. He assisted in authoring the Material Science Handbook (PNNL and Battelle). He is a material science “master teacher” for ASM and NACE and Polymer Ambassador for the Intersociety Polymer Education Council.*

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**12 Noon–2:00 PM Luncheon****Society of Elementary Presidential Awardees (SEPA) Luncheon***(By Registration Through SEPA)**Grand Salon I, Marriott*

Special guest speaker, seated luncheon, and door prizes. Contact SEPA Treasurer Ruth Ruud at *ruth.ruud@yahoo.com* or *www.sepamembers.org* for additional information.

**12 Noon–2:00 PM Exhibitor Workshop****Taking Science Outdoors with FOSS K–8 (Gen)***(Grades K–8)**107A/B, Convention Center*

Sponsor: Delta Education, School Specialty Science–FOSS

**Joanna Snyder** (*joanna\_snyder@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

**Erica Beck Spencer**, University of California, Berkeley

Learn about the ground-breaking work done by the Boston Schoolyard Initiative (BSI) and other projects. Explore how to use effective strategies to engage children in powerful science learning experiences in their own schoolyards and local outdoor environments. We’ll go outside, so dress accordingly. Sample materials will be provided.

**12:30–1:00 PM Presentations****SESSION 1****Learning Outside the Box: Site-based Learning****(Gen)***(Elementary–Middle Level) Hall D/Room 20, Convention Center*

**Vanessa L. LeCaine** (*vanessa.lecaine@epsb.ca*), Riverbend Junior High School, Edmonton, Alta., Canada

How does Zoo School sound? Or Museum School? Make the journey outside the classroom more meaningful by using site-based learning. We’ll explore successes and challenges.

**SESSION 2****NSTA Teacher and Principal Awards and Recognitions****(Gen)***(General)**Hall D/Room 30, Convention Center*

**Julie Thomas** (*julie.thomas@okstate.edu*), Oklahoma State University, Stillwater

NSTA recognizes and rewards exemplary teachers and principals with cash, trips, science materials, and more. Learn how to apply!

SESSION 3

**Designing for Excitement in Science Education: A Graduate Program Focused On Changing the Way Science Is Taught in the Grades 7–12 Classroom**

(Gen)

(College)

Congress A, Loews

**Susan H. Cusato** (*cusatos1@southernct.edu*), Southern Connecticut State University, New Haven

We'll look at an MS program for science educators that both excites students and meets the recommendations for professional development. Students complete coursework in the sciences, teaching with technology, the nature of science, the history and philosophy of science, laboratory practice, and curricular innovation.

SESSION 4

**Amending Student Mathematics Proficiency Concurrent with the Implementation of a Physics First Course in an Urban Setting**

(Phys)

(High School)

Franklin 7, Marriott

**Michael F. Harris** (*mharris4@boston.k12.ma.us*), Jeremiah E. Burke High School, Dorchester, Mass.

President: Jonathan W. McLaughlin, Boston (Mass.) Public Schools

Students coming to high school without good math skills hamstring the Physics First approach. Access district and state assessment data on students to redress students' deficits in mathematics concurrent with implementing the inquiry-based physics curriculum.

SESSION 5

**Vocabulary Success: Teaching Scientific Vocabulary to English Language Learners**

(Bio)

(Middle Level–High School)

Franklin 8, Marriott

**Yu Ren Dong**, Queens College, Flushing, N.Y.

I will share several strategies for tailoring scientific vocabulary instruction to English language learners' needs.

**12:30–1:30 PM SCST Marjorie Gardner Lecture**

**Too Much Content to Cover? Teach Using Competencies Instead**

(Gen)

(College)

Commonwealth A, Loews



**Dee U. Silverthorn**, Senior Lecturer, Integrative Biology, The University of Texas at Austin

President: Brian Shmaefsky, Kingwood College, Kingwood, Tex.

This presentation on competencies-based teaching is part of the HHMI-AAMC committee that just released the “Scientific Foundations for Future Physicians” report. The report focuses on competencies rather than being a laundry list of biology content. I’ll also describe the integration of chemistry, math, and physics content. This report also reflects the NSF “Vision & Change” project that identifies key concepts in teaching rather than content details.

*Dee Silverthorn teaches physiology at The University of Texas at Austin. Her bench research focuses on epithelial transport, but in recent years she has concentrated on strategies for incorporating active learning into traditional lecture classrooms and inquiry-student laboratories. She was an early adopter of “clickers” and uses them as one of many interactive teaching tools in her large lecture classes.*

*Dee has been the PI on three NSF-CCLI grants, two for laboratory teaching and one for developing classroom materials for student-centered teaching that turned into a study of why it is difficult to change how we teach. She has received many awards for her own teaching and for contributions to international physiology education, including the Arthur C. Guyton Educator of the Year and the Claude Bernard Distinguished Lectureship from the American Physiological Society (APS). She recently completed a six-year term as editor-in-chief of Advances in Physiology Education, and she is also the author of the award-winning Human Physiology: An Integrated Approach.*



## 12:30–1:30 PM Informal Science Day Keynote Address

### Surrounded by Science—Improve Your Practice by Exploring What Research Says About Learning Science in Informal Environments (Gen)

(General)

Grand Salon E/F, Marriott



**Dennis Schatz** ([dschatz@pacsci.org](mailto:dschatz@pacsci.org)), Senior Vice President, Pacific Science Center, Seattle, Wash.

**Andrew W. Shouse** ([awshouse@u.washington.edu](mailto:awshouse@u.washington.edu)), Associate Director, University of Washington Institute for Science and Mathematics Education, Seattle

The National Research Council recently released two new publications (*Learning Science in Informal Environments: People, Places, and Pursuits* and *Surrounded by Science*) regarding how people learn science in informal environments (e.g. home, museums, zoos, parks, after-school programs). Come learn more about the recently released *Surrounded by Science* by exploring the themes in the book and discovering these ideas to further learning within your own settings.

*Dennis Schatz is Senior Vice President for Strategic Programs at Pacific Science Center in Seattle, Washington. A research solar astronomer prior to his career in science education, he worked at the Lawrence Hall of Science at the University of California, Berkeley, prior to moving to Seattle in 1977. He provides leadership to several of Pacific Science Center's major initiatives, including Washington State LASER and Portal to the Public. He co-directs Washington State LASER (Leadership and Assistance for Science Education Reform), a program to implement a quality K–12 science program in all 295 school districts in Washington State. Dennis is the author of 21 science books for children and he is also co-author/editor of several curriculum resources for teachers.*

*Andrew Shouse is an education researcher whose interests include teacher learning, science education in formal and informal settings, and communication of educational research to policy and practice audiences. A former elementary and middle grades teacher and science center administrator, Dr. Shouse joined the University of Washington Institute for Science and Mathematics Education in September 2008 as Associate Director. Previously he served as Senior Program Officer with the National Research Council (NRC) where he directed the consensus study that resulted in the publication *Learning Science in Informal Environments: People, Places, and Pursuits*.*

## 12:30–1:30 PM Presentations

### SESSION 1

#### National Lab Day Is for Teachers! (Env)

(Middle Level–High School/Informal) 201C, Convention Center

**Jan Cuny**, National Science Foundation, Arlington, Va.

National Lab Day is a nationwide movement that's bringing hands-on, discovery-based lab experiences to students. Find out how to get your class involved.

### SESSION 2

#### NSTA Avenue Session: The NSTA Learning Center: Free Classroom Resources and Professional Development for Educators (Gen)

(Supervision/Administration) 307, Convention Center

**Flavio Méndez** ([fmendez@nsta.org](mailto:fmendez@nsta.org)), Senior Director, NSTA Learning Center, NSTA, Arlington, Va.

Looking for online resources for your classroom? Let the NSTA Learning Center show you how. With over 2,400 accurate, standards-aligned resources, 25% of which are free, and quality professional development opportunities to assist educators with core subject content, NSTA can help!

### SESSION 3

#### Science Buddies: High School and Elementary Students Learning Together (Gen)

(Elementary–High School) Hall D/Room 10, Convention Center

**Pete Vreeland** ([pvreeland@umasc.org](mailto:pvreeland@umasc.org)), Upper Merion Area High School, King of Prussia, Pa.

We paired our high school seniors with third-grade students to work on several science projects throughout the year.

### SESSION 4 (two presentations)

(Elementary) Hall D/Room 14, Convention Center

#### Nonfiction Reader Links and NSES in Elementary Classrooms (Gen)

**Carmen M. Andrews** ([andrewsc@ces.k12.ct.us](mailto:andrewsc@ces.k12.ct.us)), Six-to-Six Interdistrict Magnet School, Bridgeport, Conn.

We will examine specific reading strategies and resource ideas to improve NSES vocabulary and background knowledge for disadvantaged urban, rural, and ELL students.

#### Weaving Literacy into a Science Research Project: A Case Study on Volcanoes (Gen)

**Carie Szalay** ([cszalay@springside.org](mailto:cszalay@springside.org)) and **Christine Amicucci** ([camicucci@springside.org](mailto:camicucci@springside.org)), Springside School, Philadelphia, Pa.

Introduce your students to literacy skills while conducting a research project. Skills include voice, narrative writing, and knowing where to look for answers in nonfiction books.

**SESSION 5**

**Building a Science Foundation: PreK–3, Scientists of the Future (Gen)**

(Preschool–Elementary) Hall D/Room 15, Convention Center

**Christine Hickle** and **Kim Day** (*kim.day@fcps.org*), Frederick County Public Schools, Walkersville, Md.

Presider: Kim Day

Using science standards and integrated hands-on, inquiry-based activities brings science to life for your students and builds a foundation for future success. Handouts provided.

**SESSION 6**

**Science with a Story (Gen)**

(Preschool–Elementary) Hall D/Room 16, Convention Center

**Jaymee Herrington** (*jherrington@westga.edu*), West Georgia Youth Science and Technology Center, Carrollton

Use children’s literature to help young learners learn science concepts.

**SESSION 7**

**Do Birds Have Belly Buttons? Kids Answer the Funniest Questions! (Bio)**

(Elementary–Middle Level/Inf.) Hall D/Room 18, Conv. Center

**Jennifer Fee** (*jms327@cornell.edu*), Cornell Lab of Ornithology, Ithaca, N.Y.

**Norma J. Griffin** (*ngriffin@mexico.cnyric.org*), New Haven Elementary School, New Haven, N.Y.

Students engaged in the Cornell Lab of Ornithology’s Citizen Science projects ask and answer their own questions about birds, often through experimental studies. We collect and publish student scientific reports in our annual *Classroom BirdScope* publication.

**SESSION 8**

**Built STEM by Stem: Using Planaria to Rethink and Revitalize Science Education (Bio)**

(Middle Level–College) Hall D/Room 25, Convention Center

**Jeffrey F. Shannon**, Westhill High School, Stamford, Conn.

Integrating planaria into the curriculum develops expertise among students and teachers and promotes higher-level thinking and creative problem solving.

**SESSION 9**

**Factors Predicting Students’ Persistence in Science (Gen)**

(General) Hall D/Room 27, Convention Center

**Gerhard Sonnert** (*gsonnert@cfa.harvard.edu*) and **Jaimie Miller** (*jmiller@cfa.harvard.edu*), Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

We’ll share the results of a large nationally representative study of the predictors of students’ career intentions.

**SESSION 10**

**The Video Weblog: A Crash Course (Gen)**

(General) Hall D/Room 29, Convention Center

**Anthony M. Gettig** (*gettigam@kalamazoo.k12.mi.us*) and **Charles G. Tansey** (*tanseycg@kalamazoo.k12.mi.us*), Edison Environmental Science Academy, Kalamazoo, Mich.

Lights, camera, action, blog! Learn how to create your own video blog using free services and inexpensive equipment to generate interest and achievement.

**SESSION 11**

**CSSS Session: Authentic Multidisciplinary Student Research: Assessing Attitudes, Knowledge, and Behaviors Related to Water Quality (Env)**

(High School) Anthony, Loews

**Peter M. Mecca** (*meccap@fccps.org*), George Mason High School, Falls Church, Va.

I’ll describe the results of an authentic research experience for students in the content areas of ecology and psychology. Students examined pollution issues related to the Chesapeake Bay Watershed.

**SESSION 12**

**Engaging Science Teachers in Inquiry: Have Them Observe a Summer Science Camp (Gen)**

(General) Congress B, Loews

**Kevin J. Niemi** (*kjniemi@wisc.edu*), University of Wisconsin–Madison

This course for teachers requires them to observe a summer science camp and connect it to the research and methods of science inquiry.

## SESSION 13

**The First-Year Teacher Experience: Stories of Triumph and Challenges** (Gen)*(Middle Level–High School)**Congress C, Loews*

**Nanette I. Dietrich** ([ndietrich@millersville.edu](mailto:ndietrich@millersville.edu)) and **Oliver Dreon** ([oliver.dreon@millersville.edu](mailto:oliver.dreon@millersville.edu)), Millersville University of Pennsylvania, Millersville

Presider: **Patrisha A. Ross** ([pross@ucfsd.org](mailto:pross@ucfsd.org)), Unionville High School, Kennett Square, Pa.

First-year science teachers from around the country will share their trials and triumphs.

## SESSION 14

**Philadelphia Teachers Share Energy Education Successes** (Gen)*(Supervision/Administration)**Regency C1, Loews*

**Mary Spruill** ([info@need.org](mailto:info@need.org)), The NEED Project, Manassas, Va.

Learn how teachers in Philadelphia have incorporated hands-

on instruction about energy resources with field trips, school and home energy audits, and community outreach.

## SESSION 15

**Navigation Guides: A Unique Approach to Connecting the Curriculum** (Gen)*(General)**Tubman, Loews*

**Pam Pelletier, Suzanne Gill, and Beverly Nadeau**, Boston (Mass.) Public Schools

**Haven Ripley**, Perkins Elementary School, South Boston, Mass.

Boston teachers created 45 navigation guides for the K–12 curriculum, one for each kit. With them, teachers across the district have a way to focus on key ideas and ensure connections across years for all students.

*You're invited...*  
to the NSTA New Member  
Orientation

Please join us for this exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments while hearing about how preservice and new teachers can save money on BOTH their NSTA membership dues as well as auto insurance! If you joined NSTA as a member after June 1, 2009, and/or received an e-mail invitation to this event from NSTA, please join us!

Friday, March 19 • 2:00–3:00 PM  
Philadelphia Marriott • Grand Salon A/B

Compliments of GEICO



SESSION 16

**Building Capacity and Improving Instruction Through Sustained Educational Coaching (Gen)**

(Supervision/Administration) Washington B, Loews

**Melissa Stadtfeld** ([melissa.stadtfeld@fortbend.k12.tx.us](mailto:melissa.stadtfeld@fortbend.k12.tx.us)) and **Suzanne Kelley** ([suzanne.kelley@fortbend.k12.tx.us](mailto:suzanne.kelley@fortbend.k12.tx.us)), Fort Bend Independent School District, Sugar Land, Tex.

**Cindy Juarez** ([cindy.juarez@fortbend.k12.tx.us](mailto:cindy.juarez@fortbend.k12.tx.us)), Fort Settlement Middle School, Sugar Land, Tex.

We will share a two-tier model for implementing an educational coaching system within a school or district as well as strategies for long-term improvement.

SESSION 17

**We're So into Science! Writing and Talking That Enhances Science Learning (Gen)**

(Middle Level–High School) 302/303, Marriott

**JoAnne M. Katzmarek** ([jkatzmar@uwsp.edu](mailto:jkatzmar@uwsp.edu)), University of Wisconsin–Stevens Point

These writing and talking strategies engage adolescents and help them deepen their understanding of science concepts.

SESSION 18

**Motivating Students to “Want” to Learn the Scientific Method (Gen)**

(Middle Level–High School) 305/306, Marriott

**Dawn L. Cronauer** ([dawn.cronauer@hcps.org](mailto:dawn.cronauer@hcps.org)), North Harford Middle School, Pylesville, Md.

Presider: Allyson Prince ([princea@ocps.net](mailto:princea@ocps.net)), Stonewall Jackson Middle School, Orlando, Fla.

Use a mysterious clear liquid that turns blue when shaken to motivate students to learn the scientific method. Students feel like “real” scientists as they debate their conflicting theories.

SESSION 19

**DuPont Presents—Safety in the Science Classroom and Lab (Gen)**

(General) 307, Marriott

**Peggy Vavalla** ([marguerite.e.vavalla@usa.dupont.com](mailto:marguerite.e.vavalla@usa.dupont.com)), DuPont Co., Wilmington, Del.

Engage your colleagues in creating a safe science classroom environment. We'll share a template for writing a safety plan for your school district.

SESSION 20

**PDI LHS Pathway Session: Integrating World Health Issues into a Life Science Classroom (Gen)**

(Middle Level–High School) 404, Marriott

**Laura Lenz**, Lawrence Hall of Science, University of California, Berkeley

Help students understand the relevance of learning about cells and biology with these engaging classroom-tested activities that incorporate issues related to cell biology and world health. Activities can be adapted for use in middle and high school classrooms.

SESSION 21

**PDI Skills Pathway Session: Building 21st-Century Skills Through Innovative Technology Experiences for Students and Teachers (Gen)**

(Middle Level–High School) 405, Marriott

**Joyce Malyn-Smith** ([jmsmith@edc.org](mailto:jmsmith@edc.org)), Education Development Center, Inc., Newton, Mass.

**Bob Coulter** ([bob.coulter@mobot.org](mailto:bob.coulter@mobot.org)), Missouri Botanical Garden, St. Louis

Learn what youth knows and can do with technology in the service of STEM and about the “computational thinking” emerging among ITEST youth.

SESSION 22

**PDI BSCS Pathway Session: Student Talk: Who's Accountable? (Gen)**

(General) 414/415, Marriott

**Rebecca Kruse**, BSCS, Colorado Springs, Colo.

Learn how to use Accountable Talk™ as a means of facilitating discourse in the science classroom through classroom environments and routines that engage students as a community of learners.

SESSION 23

**Kids Judge! Science Education Partnerships in Urban Environments (Bio)**

(General) Franklin 2, Marriott

**Deborah L. Colbern** ([colbern@ca.rr.com](mailto:colbern@ca.rr.com)), National Kids Judge! Partnership, Venice, Calif.

**Michele J. Dixon** ([michelejoandixon@yahoo.com](mailto:michelejoandixon@yahoo.com)), Penn Alexander School, Philadelphia, Pa.

**Ted Abel** ([abele@sas.upenn.edu](mailto:abele@sas.upenn.edu)), University of Pennsylvania, Philadelphia

**Jacqueline Sanderlin** ([jsanderlin@compton.k12.ca.us](mailto:jsanderlin@compton.k12.ca.us)), Foster Elementary School, Compton, Calif.

A neuroscientist, K–5 teacher, K–5 principal, and commu-

nity liaison share perspectives on a collaborative approach to science education in West Philadelphia and South Los Angeles.

**SESSION 24****AP Biology Teachers' Open Forum (Bio)**

(High School) Franklin 3, Marriott

**Eileen Gregory** (*egregory@rollins.edu*), Rollins College, Winter Park, Fla.

**Israel Solon**, Educational Testing Service, Princeton, N.J.

**Melissa J. Cuellar** (*mcuellar@unitedisd.org*), J.B. Alexander High School, Laredo, Tex.

Join other AP Biology teachers and members of the AP Biology Development Committee for a discussion of teaching strategies, course activities, the redesign, and other issues in AP Biology.

**SESSION 25****A Scientific Point-of-View Program (Phys)**

(General) Franklin 6, Marriott

**Amy F. Hunt** (*amy.hunt@suhds.k12.ca.us*), Bonita Vista Middle School, Chula Vista, Calif.

How does a student's point of view change as he or she gains evidence through scientific inquiry investigations? Learn how a teacher-created program is helping middle school students WANT to "do science." Leave with handouts, examples, and strategies.

**SESSION 26****Buy 'em with One Notebook and Biotech! (Bio)**

(Middle Level–High School) Franklin 9, Marriott

**Tamica A. Stubbs** (*tamica.stubbs@cms.k12.nc.us*), E.E. Waddell High School, Charlotte, N.C.

Learn how to turn the average inner city student into an investigative scientist and publisher—all in one semester!

**SESSION 27****NOAA Climate Symposium Session: Explore Earth's Systems Using the 2007 GLOBE Earth System Poster (Earth)**

(Middle Level–High School/Informal) Franklin 11, Marriott

**Frank Niepold** (*frank.niepold@noaa.gov*), NOAA, Silver Spring, Md.

We'll look at an updated innovative poster activity that explores the processes that form Earth's interconnected environment.

**SESSION 28****Getting Connected: NSTA Student Chapter Interactive Television (ITV) Meetings (Gen)**

(College) Grand Salon G, Marriott

**Bambi L. Bailey** (*bambi\_bailey@uttyler.edu*), The University of Texas at Tyler

Interested in expanded experiences for preservice science teachers? We have organized and hosted exciting ITV meetings with student chapters across the U.S.

**SESSION 29****Nanotechnology in the Classroom (Chem)**

(Informal Education) Grand Salon L, Marriott

**Michael Davis** (*mdavis@ccc.edu*), Harold Washington College, Chicago, Ill.

Nanotechnology techniques pattern and manipulate matter at the molecular level. Join me as I share nano classroom modules.

**SESSION 30****Look to the Heavens: How to Use Google Sky in Your Science Classroom (Earth)**

(Middle Level–High School) Freedom F, Sheraton

**Ian C. Binns** (*ianbinns@lsu.edu*), Louisiana State University, Baton Rouge

**Tina S. Ornduff**, Google, Mountain View, Calif.

Learn how Google Sky can enhance science teaching and learning in grades 6–12, and try some lessons and activities for space science.

**SESSION 31****Make the Study of Science "Cool" with SSSNOW (Earth)**

(Middle Level/College) Independence B, Sheraton

**Kenneth L. Huff** (*khuff@williamsvillek12.org*), Williamsville (N.Y.) Central Schools

Discover "cool" ways to engage students in the study of the properties of snow. The SSSNOW project, which involves students in collecting and synthesizing authentic snow data, was made possible through an NSTA Toyota TAPESTRY grant.

**SESSION 32** (two presentations)

*(Elementary–High School) Independence C, Sheraton*

**How Muddy Is the Muddy River? (Env)**

**Patreka J. Wood-Blain** (*patreka.wood@gmail.com*), Boston (Mass.) Public Schools

Engage urban students by teaching them to explore their environment through the field of urban ecology.

**Rain Barrel Project: Rooftop to Tap (Env)**

**Vivian Williams** (*vwilliams@stroudcenter.org*), Stroud Water Research Center, Avondale, Pa.

Measure your school’s roofprint with Google Earth. Try an activity from Stroud Water Research Center’s Rain Barrel Project, which makes stormwater issues relevant, multidisciplinary, and engaging.

**SESSION 33**

**International Engineering Academy: Teaching Coastal Erosion, Water Quality, and Wind Energy in Thailand (Gen)**

*(General) Independence D, Sheraton*

**Chris R. Dalton** (*cdalton@ou.edu*), **Mark A. Nanny** (*nanny@ou.edu*), **Timothy A. Laubach** (*laubach@ou.edu*), **Allen R. LaBryer**, and **Karen J. Upton**, University of Oklahoma, Norman

Experience three authentic guided inquiry lessons that were developed through an NSF GK–12 program and implemented in a teacher workshop/student academy in southern Thailand.

**12:30–1:30 PM Workshops**



**ISTE: Podcasting for Students and Teachers in Science (Gen)**

*(General) Hall D/Room 1, Convention Center*

**Ben Smith** (*ben@edtechinnovators.com*), York, Pa.

**Jared Mader** (*jared@edtechinnovators.com*), Red Lion (Pa.) Area School District

Create your own podcasts, learn the details of publishing and subscribing to podcasts, and gain new ideas for how to use podcasting in your classroom. Come create a podcast and post it to a wiki.



**Get Moving! Kinesthetic Tools for Excellence in Middle School Science (Gen)**

*(Middle Level–High School) Hall D/Room 7, Convention Center*

**Brian J. Ciuffreda** (*bciuffreda@princetoncharter.org*) and **Mark F. Schlawin** (*mschlawin@princetoncharter.org*), Princeton Charter School, Princeton, N.J.

Learn to use some of the standards-based physical activities and “kinesthetic clue” mnemonic devices used at one of New Jersey’s top-performing middle schools.



**Sound Science: Learning About Sound and the Nature of Science Through Inquiry (Phys)**

*(Elementary) Hall D/Room 5, Convention Center*

**Aaron J. Sickel** (*ajsrhc@mail.mizzou.edu*) and **Michele H. Lee** (*scienceedchica@gmail.com*), University of Missouri, Columbia

Participate in an inquiry lesson for elementary students that explores sound as well as how science knowledge is produced. We’ll share a 5E lesson.



**Bringing the Icy Ends of the Earth Right into Your Classroom! (Gen)**

*(Middle Level/Informal) Hall D/Room 6, Convention Center*

**Margie K. Turrin** (*mkt@ideo.columbia.edu*), Columbia University, Palisades, N.Y.

Explore current polar science research through hands-on student-focused activities designed and tested by polar scientists.

**Nurturing Wonder in Young Children by Bringing the Outdoors Inside (Bio)**

*(Preschool–Elementary) Hall D/Room 8, Convention Center*

**M. Susan McWilliams** (*smcwilliams@unomaha.edu*), University of Nebraska at Omaha

**Scott E. Sala** (*scott\_sala@dpsk12.org*), Denver (Colo.) Public Schools

In this workshop, we will focus on nurturing wonder in young children through hands-on activities with “found” outdoor materials, simple science tools, and children’s literature.

**Earth Counts: Hands-On Human Ecology Across the Curriculum (Env)***(Elementary)* Hall D/Room 9, Convention Center**Carol Bliese** (*cbliese@popconnect.org*), Population Connection, Washington, D.C.

Try some interdisciplinary activities that explore human impacts on the environment while applying content and skills for elementary science, math, and social studies. Free CD with activities.

**Electromagnetic Pasta (Gen)***(General)* Hall D/Room 11, Convention Center**Donna L. Young** (*donna.young@tufts.edu*), The Wright Center for Science Education, Tufts University, Medford, Mass.**Pamela Perry** (*pperry@lewistonpublicschools.org*), Lewiston High School, Brunswick, Maine

Use different types of pasta to create a model of the electromagnetic spectrum, then defend your classification system with pasta analogies for frequency and wavelength.

**I'm a Real Scientist! Teaching the Scientific Method to Elementary Students (Gen)***(Elementary)* Hall D/Room 17, Convention Center**Julie A. Holmes** (*jholmes@latech.edu*), Louisiana Tech University, Ruston

Teach the scientific method so your students act like real scientists. Take home unit plans.

**Middle School Chemistry: Big Ideas About the Very Small (Chem)***(Middle Level)* Hall D/Room 19, Convention Center**James Kessler** (*j\_kessler@acs.org*), American Chemical Society, Washington, D.C.

Learn about a new middle school chemistry curriculum that will be available for free online. This completely developed unit of 5E lesson plans includes hands-on activities, molecular animations, activity sheets, assessments, and more.

**I SING: Integrated Science Inspires Neural Growth (Gen)***(Elementary–Middle Level)* Hall D/Room 22, Convention Center

**Margaret E. Bolick** (*margaret.bolick@tamucc.edu*), **Denise Hill** (*denise.hill@tamucc.edu*), and **Karen Paciotti** (*karen.paciotti@tamucc.edu*), Texas A&M University, Corpus Christi  
Come learn hands-on, activity-based experiences as you move through various science centers integrating literature, mathematics, and music.

**Smarter Science for Middle School: Literacy and Numeracy in Action (Gen)***(Middle Level)* Hall D/Room 23, Convention Center**Brad Parolin** (*brad.parolin@tdsb.on.ca*), Toronto (Ont.) District School Board, Canada

Smarter Science's research-based inquiry program teaches key concepts and process skills through hands-on investigations. Take home materials and door prizes.

**Low-Tech but High-Effect Inquiry-based Science Lab Activities (Gen)***(Elementary–High School)* Hall D/Room 28, Convention Center**Darin S. Munsell** (*dsmunsell@yahoo.com*), Illinois Institute of Technology, Chicago**Cheryl L. Heitzman** (*cherylheitzman@gmail.com*), Perspectives/IIT Math & Science Academy, Chicago, Ill.

Discover great low-tech inquiry activities for K–12 classrooms. Get hands-on experience, materials, and rubrics for a new level of classroom fun and learning.

**After-School Science Seminar (Gen)***(General)* Commonwealth B, Loews**Maryann Stimmer** (*mstimmer@aed.org*), Educational Equity Center at AED, New York, N.Y.

The perfect way to support and engage students' interest in inquiry-based science is the after-school science seminar. Create a teaching-learning team between teacher and student.

**Aipotu: An Interactive Simulation Linking Genetics, Biochemistry, Molecular Biology, and Evolution (Bio)***(High School–College)* Commonwealth C, Loews**Brian T. White** (*brian.white@umb.edu*), University of Massachusetts, Boston

Aipotu allows students to explore a biological phenomenon (simulated flower color) using genetics (crosses), biochemistry (protein folding), molecular biology (gene expression), and evolution (natural selection). This software is freely available on the web. For more information, see <http://intro.bio.umb.edu/aipotu>.

**A Hands-On/Minds-On Activity for Teaching Molecular Biology (Bio)**

(Middle Level–High School) Franklin 1, Marriott

**Jennifer H. Doherty**, **Ingrid Waldron** (*iwaldron@sas.upenn.edu*), and **Lori H. Spindler** (*lori.spindler@gmail.com*), University of Pennsylvania, Philadelphia

**Sabriya Dempsey** (*mdempsey@philasd.org*), School District of Philadelphia, Pa.

Presider: Jennifer H. Doherty

In this hands-on/minds-on activity, students learn how a gene provides the instructions for making a protein and how genes influence our characteristics.

**Inquiring Minds: Using Science to Teach Thinking (Bio)**

(Elementary–High School) Franklin 4, Marriott

**Donald DeRosa** (*donder@bu.edu*) and **Carla Romney** (*romney@bu.edu*), Boston University, Boston, Mass.

**Janet J. Hogan**, Mansfield (Mass.) Public Schools

Learn four fundamental questions of inquiry and apply them during an investigation to create descriptive, explanatory, and experimental models. Instructional strategies are based on current research by Boston University School of Medicine's CityLab program.

**Let's Get Physical! (Phys)**

(Elementary–High School) Franklin 5, Marriott

**Jennifer M. Edginton** (*jennifer.edginton@msichicago.org*), Museum of Science and Industry, Chicago, Ill.

Presider: Bryan W. Wunar, Museum of Science and Industry, Chicago, Ill.

These inquiry-based, hands-on physics activities will enliven any classroom. Handouts.

**Cuttin' Up in Chemistry (Chem)**

(Middle Level–High School/Supv.) Grand Salon C, Marriott

**Rosemary Martin** (*ssibastrop@gmail.com*), Consultant, Bastrop, Tex.

Struggling with teaching basic atomic structure? Physical/chemical changes? Balancing equations? Come see how you can engage your kids and enhance your teaching tool kit using manipulatives.

**Everyone Knows That Heavier Things Fall First (Phys)**

(Middle Level–High School) Grand Salon J, Marriott

**Joan S. Wagner** (*jsw2012@aol.com*), Focus on Learning, Saratoga Springs, N.Y.

Explore some strategies for using misconceptions to teach intermediate-level physical science. I'll share classroom demonstrations and activities.

**Chunking Content to Encourage Student Learning (Chem)**

(High School) Grand Salon K, Marriott

**Cynthia R. Murphy**, Pensacola Catholic High School, Pensacola, Fla.

These tested chemistry units help students assimilate material by actively engaging them in the learning process.

**NASA: At the Heart of a Supernova (Earth)**

(Middle Level–College) Freedom E, Sheraton

**Daryl L. Taylor** (*daryl@darylscience.com*), Greenwich High School, Greenwich, Conn.

Bring the science of supernovae down to Earth. Come perform two of four student-centric activities using the Crab Nebula and Pulsar. NASA freebies for all!

**Infrared Astronomy with NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA) (Earth)**

(Middle Level–High School) Freedom G, Sheraton

**Dana Backman** (*dbackman@sofia.usra.edu*), NASA's Stratospheric Observatory for Infrared Astronomy, Moffett Field, Calif.

See astronomical images from across the electromagnetic spectrum, learn about NASA's infrared observatory, compare and contrast infrared with visible light, and take home lesson plans.

**Changes in Earth and Sky: Weather Adages for Classroom Connections (Env)**

(Elementary–Middle Level) Freedom H, Sheraton

**Tina J. Cartwright** (*tina.cartwright@marshall.edu*) and **Katie McDilda** (*katie.mcdilda@marshall.edu*), Marshall University, Huntington, W.Va.

Red skies at night, teacher's delight. Red skies in morning, teachers take warning! By investigating weather proverbs in the classroom, changes in Earth and sky will be a breeze.



### NSTA High School Earth Science Share Session (Earth)

(High School) *Independence A, Sheraton*

**Bev DeVore-Wedding** (*bdevorewedding@meeker.k12.co.us*), NSTA Director, District XIV, and Meeker High School, Meeker, Colo.

Presider: Jean Tushie (*jtushie@comcast.net*), NSTA Director, High School Science Teaching, and Eden Prairie High School, Eden Prairie, Minn.

The NSTA High School Committee highlights excellent presenters sharing inquiry and assessment through best practice, teaching tips, labs, and activities. Join us for some great earth science ideas.

### NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon (Earth)

(Elementary–High School) *Liberty A/B, Sheraton*

**Michelle C. Harris** (*michelle\_harris@apsva.us*) and **Kimberly Warschaw** (*kimberly\_warschaw@apsva.us*), Wakefield High School, Arlington, Va.

**Michael J. Passow** (*michael@earth2class.org*), Dwight Morrow High School, Englewood, N.J.

**Roberta M. Johnson** (*rmjohnsn@ucar.edu*) and **Randy M. Russell**, University Corporation for Atmospheric Research, Boulder, Colo.

**Becky J. Cox** (*beckyc@utm.edu*), The University of Tennessee at Martin

**Peggy Eddy** (*mjeddy@aldine.k12.tx.us*), Carter Academy, Houston, Tex.

**Tom Ervin** (*tomervin@mchsi.com*), Retired Educator, Le Claire, Iowa

**Ron Fabick** (*rfabick@zoominternet.net*), NESTA, Medina, Ohio

**Pamela Harman**, SETI Institute, Mountain View, Calif.

**Lynne H. Hehr** (*lhehr@uark.edu*), University of Arkansas, Fayetteville

**Ardis Herrold**, Grosse Pointe North High School, Grosse Pointe Woods, Mich.

**Steele W. Hill** (*steele.w.hill@nasa.gov*) and **Carolyn Ng** (*carolyn.y.ng@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

**Michaëlle Jaeger** (*mjaeger@d231.rochelle.net*), Rochelle Middle School, Rochelle, Ill.

**Kara M. Russell** (*kmrusse09@earlham.edu*), Earlham College, Richmond, Ind.

**Robert Sparks** (*rsparks@noao.edu*), National Optical Astronomy Observatory, Tucson, Ariz.

**Pamela Whiffen** (*pwpwr@aol.com*), NASA Educator Ambassador, Phoenix, Ariz.

Join NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

### SETI Institute’s Earth and Space Science Guides for Grades 3–9 (Earth)

(Elementary–Middle Level) *Logans 2, Sheraton*

**Edna K. DeVore** (*edevore@seti.org*), SETI Institute, Mountain View, Calif.

Join the SETI Institute for an introduction to the “astro” side of astrobiology and our science supplemental guides for grades 3–9. Free NASA resources.

### Using the Seismograph in Your Student’s Backpack: Teaching Earth Science Content with iPods, Laptops, and Other Portable Accelerometers (Earth)

(Middle Level–High School) *Philadelphia North, Sheraton*

**Michael Hubenthal** (*hubenth@iris.edu*) and **John Taber** (*taber@iris.edu*), IRIS Consortium, Washington, D.C.

**Michael Wysesession** (*michael@wucore.wustl.edu*), Washington University in St. Louis, Mo.

Explore strategies for using accelerometers in modern “gizmos” as a hook to teach students about seismic waves and earthquakes.

### Equal Access to Environmental Science Through Program Modifications and Technology (Env)

(General) *Philadelphia South, Sheraton*

**Michele Daly** (*michele.daly@njmeadowlands.gov*), **Victoria H. Madden** (*victoria.madden@njmeadowlands.gov*), and **Debbie Rios** (*deborah.rios@njmeadowlands.gov*), Ramapo College of New Jersey, Lyndhurst

Learn strategies and specific assistive technology tools for engaging individuals with disabilities in informal science experiences.

## 12:30–1:30 PM Exhibitor Workshops

### Tough Topics in Biology: Circulatory Physiology (Bio)

(Grades 6–12)

112A/B, Convention Center

Sponsor: PASCO

**Ryan Reardon**, Alabama School of Fine Arts, Birmingham

This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of biology investigations—circulatory physiology. Participate in a lab activity from PASCO's new biology lab manuals. Using probeware and other technologies, you will design and conduct your own experiment to study the effects of different variables on human heart rate and blood pressure. Participants can also observe the physiological effects of different variables on endothermic organisms. Be one of the first to see how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

### Tough Topics in Physics and Physical Science: Circuits (Phys)

(Grades 6–12)

113A, Convention Center

Sponsor: PASCO

**Geoffrey Clarion**, Rocklin High School, Rocklin, Calif.

This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of physics and physical science investigations—circuits. Investigate the relationship between current, voltage, and resistance in a standards-based SPARKlab and experience how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

### Teaching in the 21st Century: Integrating Project-based Curricula and Probeware (Env)

(Grades 6–8)

201A, Convention Center

Sponsor: It's About Time

**Mary Lynn Jensen**, It's About Time, Armonk, N.Y.

How does water quality affect the ecology of a community? Join us to explore water quality using technology and a project-based inquiry approach to middle school science. You'll leave with activities that you can implement in your own classroom.



## 12:30–2:00 PM Workshop

### Toyota TAPESTRY Share-a-Thon (Gen)

(Elementary–High School)

Grand Salon H, Marriott

**Eric V. Crossley** ([ecrossley@nsta.org](mailto:ecrossley@nsta.org)), Director, Science Education Competitions, NSTA, Arlington, Va.

**Ray Barber** ([rbarber@chicousd.org](mailto:rbarber@chicousd.org)), Pleasant Valley High School, Chico, Calif.

**Ophelia Barizo** ([ombarizo@highlandviewacademy.com](mailto:ombarizo@highlandviewacademy.com)), Highland View Academy, Hagerstown, Md.

**Patricia Gill**, P.S. 115 Daniel Mucatel School, Brooklyn, N.Y.

**Kathleen Ireland** ([kireland@seaburyhall.org](mailto:kireland@seaburyhall.org)) and **Sherri Reed** ([sreed@seaburyhall.org](mailto:sreed@seaburyhall.org)), Seabury Hall, Makawao, Hawaii

Meet recent Toyota TAPESTRY Grants for Science Teacher awardees, learn about their successful projects, and find out how you can win up to \$10,000 for your own community-based science project!

## 12:30–2:30 PM Presentations

## SESSION 1

**PDI** CSME Pathway Session: Exploring Environmental Issues: Places We Live (Gen)*(Elementary–Middle Level)*

403, Marriott

**Al Stenstrup** ([astenstrup@forestfoundation.org](mailto:astenstrup@forestfoundation.org)), American Forest Foundation, Washington, D.C.

Project Learning Tree's Exploring Environmental Issues: Places We Live secondary module is a set of activities that allows students to examine how their community is changing. Each participant will receive the module.

## SESSION 2

**PDI** FHL Pathway Session: Outdoors After School (Gen)*(Elementary–Middle Level/Informal)*

407/408, Marriott

**William Rogers** ([inquiries@firsthandlearning.org](mailto:inquiries@firsthandlearning.org)), First Hand Learning, Inc., Buffalo, N.Y.

Science Firsthand–Partners in Discovery is a project that provides urban youth with an adult mentor and time after school for scientific exploration.

## SESSION 3

**PDI** FACET Innovations Pathway Session: Fostering Classroom Culture in Support of Formative Assessment (Gen)*(General)*

410, Marriott

**Jim Minstrell** ([jimminstrell@facetinnovations.com](mailto:jimminstrell@facetinnovations.com)) and **Ruth Anderson** ([randerson@facetinnovations.com](mailto:randerson@facetinnovations.com)), FACET Innovations, Seattle, Wash.**Eric Magi** ([ericm@spokaneschools.org](mailto:ericm@spokaneschools.org)), Spokane (Wash.) Public Schools

Effective formative assessment begins with teachers who are curious about how and why (not just what) students are learning and with students who are actively engaged in their own learning process. Participants will explore strategies for establishing a classroom culture conducive to formative assessment.

# Starting an NSTA Student Chapter: Faculty & Student Perspectives

Saturday  
March 20

8:00–9:00 AM

*Philadelphia Marriott, 308*

Interested in getting your preservice teachers more involved in the profession? You won't want to miss this must-see panel discussion conducted by NSTA student chapter advisors on the advantages of starting an NSTA student chapter at your college or university.



**NSTA** National  
Science  
Teachers  
Association

**12:30–2:30 PM Workshop**

**AMSE Session: Multicultural Biology Activities: Is This Just About Good Science Teaching? (Bio)**

(High School) Commonwealth D, Loews

**Mary M. Atwater** ([atwater@uga.edu](mailto:atwater@uga.edu)), **Regina L. Suriel** ([rsuriel@uga.edu](mailto:rsuriel@uga.edu)), **Mario Watkins** ([mario\\_watkins@comcast.net](mailto:mario_watkins@comcast.net)), and **Jennifer L. Atkinson** ([jlance@uga.edu](mailto:jlance@uga.edu)), The University of Georgia, Athens

Explore three multicultural biology inquiry-oriented activities geared for urban and rural learners.

**12:30–3:30 PM Presentation**

SESSION 1

**PDI WestEd Pathway Session: Understanding the Conceptual Flow in Instructional Materials (Gen)**

(General) 409, Marriott

**Jody Sherriff** ([jskidmo@wested.org](mailto:jskidmo@wested.org)), WestEd, Rocklin, Calif.

Science sense making revealed! Learn a collaborative process to identify the flow of conceptual understanding in instructional materials. Learn how to augment flows that are less than robust for student understanding.

**1:00–2:00 PM Exhibitor Workshop**

**Bio-Rad Genes in a Bottle™ Kit (Bio)**

(Grades 7–College) 103B, Convention Center

Sponsor: Bio-Rad Laboratories

**Stan Hitomi** ([biotechnology\\_explorer@bio-rad.com](mailto:biotechnology_explorer@bio-rad.com)), San Ramon Valley Unified School District, Danville, Calif.

**Kirk Brown** ([biotechnology\\_explorer@bio-rad.com](mailto:biotechnology_explorer@bio-rad.com)), Tracy High School, Tracy, Calif.

How do you fit a person in a bottle? Your DNA contains all of the information that makes you who you are. Isolate your own DNA and capture your unique essence in a stylish glass necklace!

**1:00–2:15 PM Exhibitor Workshop**

**Working as One with Hands and Minds (Gen)**

(Grades K–6) 108B, Convention Center

Sponsor: Delta Education, School Specialty Science

**Tom Graika**, Consultant, Lemont, Ill.

**Johanna Strange**, Consultant, Richmond, Ky.

Students learn best when both their minds and their hands are engaged in classroom activities. A problem-solving approach to teaching promotes this kind of student learning. Delta Science Modules and technological activities illustrate a variety of problem-solving strategies that lead to real learning. Take home a resource packet.

**1:00–3:00 PM Meeting**

**ATLSS Plenary Session**

(By Invitation Only)

Liberty C, Sheraton

For more information, visit [www.lhsgems.org](http://www.lhsgems.org).

**1:00–3:30 PM Exhibitor Workshop**

**Bio-Rad Forensic DNA Fingerprinting Kit (Bio)**

(Grades 7–College) 103A, Convention Center

Sponsor: Bio-Rad Laboratories

**Essy Levy** ([biotechnology\\_explorer@bio-rad.com](mailto:biotechnology_explorer@bio-rad.com)) and **Sherri Andrews** ([biotechnology\\_explorer@bio-rad.com](mailto:biotechnology_explorer@bio-rad.com)), Bio-Rad Laboratories, Hercules, Calif.

Use molecular scissors to create a DNA fingerprint. Restriction enzyme digestion and DNA gel electrophoresis are used to help determine which suspect committed the crime. Extend this kit with a plasmid mapping activity using the plasmid DNA restriction patterns from the experiment (AP Biology Lab 6).

**1:30–3:00 PM Featured Panel**

**Gathering Storm or Gathering Cobwebs? What Is the Federal Response to the Science Education Crisis? (Gen)**

(General)

201C, Convention Center



Moderator  
**Francis Q. Eberle**  
*(feberle@nsta.org)*  
 NSTA Executive Director  
 Arlington, Va.

The federal government annually invests more than \$3 billion in science education and training. Yet

most experts would agree with the National Academies of Science’s *Rising Above the Gathering Storm* (2007) report that other nations are catching up to and/or surpassing the U.S. in our efforts to educate and train the next generation of highly technical workers. This panel will explore the effectiveness of the current federal investment strategy in science education.



**Panelists:**

**Bill Valdez**, Associate Director, Workforce Development for Teachers and Scientists, U.S. Dept. of Energy, Washington, D.C.

**Cora Marrett**, Assistant Director for Education and Human Resources, National Science Foundation, Arlington, Va.

**Joyce Winterton**, Assistant Administrator for Education, NASA, Washington, D.C.

**Bruce Fuchs** (*bruce.fuchs@nih.gov*), Director, Office of Education, National Institutes of Health, Bethesda, Md.

**Bob McGahern** (*robert.mcghern@osd.mil*), Director, National Defense Education Program, U.S. Dept. of Defense, Washington, D.C.

**Michael Lach** (*michael.lach@ed.gov*), Special Assistant, STEM Education, U.S. Dept. of Education, Washington, D.C.

**Louisa Koch** (*louisa.koch@noaa.gov*), Director of Education, NOAA, Washington, D.C.

**Donald Zink**, Senior Science Advisor, Center for Science Safety and Applied Nutrition, U.S. Food and Drug Administration, College Park, Md.

### 1:30–3:00 PM Sigma Science Seminar

**It's Not Enough to Be a Good Scientist (Gen)**  
(General) 204C, Convention Center

Sponsored by Sigma Xi



**H. Kenneth Hudnell** (*kenhud@solarbee.com*), Vice President and Director of Science, SolarBee, Inc., Chapel Hill, N.C.

Presider: **Bates Mandel** (*bmandell@verizon.net*), School District of Philadelphia, Pa.

You often need to reach across scientific disciplines, engage the public, get legislation enacted, and interact with agencies and industry to solve some of the world's greatest problems. This presentation will describe the ongoing effort to protect health and aquatic ecosystems from the looming crisis of toxigenic freshwater harmful algal blooms (FHABs). FHABs are rapid and massive expansions of phytoplankton populations, particularly cyanobacteria, many of which produce some of the most potent toxins known. Humans can be exposed to the toxins, cyanotoxins, in drinking and recreational waters. Cyanotoxins also harm wildlife, domestic animals, and aquatic biota. The incidence of FHABs is increasing due to excessive nutrient inputs to freshwater, decreasing water flow rates, and increasing temperatures, each of which is related to global climate change. We must develop ways to prevent, control, and mitigate FHABs to protect health, ecosystems, and economies.

*Dr. Ken Hudnell served as a neurotoxicologist at the U.S. Environmental Protection Agency (EPA) for 23 years conducting studies of adverse human health effects caused by exposures to environmental pollutants. The last six years he led an interagency effort to address the problem of freshwater harmful algal blooms (FHABs). Dr. Hudnell assembled an interdisciplinary committee that organized an international conference on FHABs, explained the problem to White House Committees, co-authored a book on the state of FHAB science and research needs, and co-authored an FHAB report mandated by Congress.*

*Ken is currently Vice President and Director of Science at SolarBee Inc., a company that developed solar-powered, long-distance circulation technology for an ecological and sustainable approach to control of harmful algal blooms (HABs) and other water quality problems. An adjunct professor at The University of North Carolina at Chapel Hill's Institute for the Environment, he leads an informal coalition of over 500 scientists and interested parties who are petitioning Congress to introduce and enact the Freshwater Harmful Algal Bloom Research and Control Act of 2009.*

### 1:30–3:00 PM Exhibitor Workshop

**Improving Test Scores with Curriculum Games for High School Science (Gen)**  
(Grades 9–12) 303A/B, Convention Center

Sponsor: Fisher Science Education

#### Presenter to be announced

Join Fisher Science Education and New Path Learning for an in-depth overview of New Path Learning's award-winning classroom games, available exclusively through Fisher Science Education. These engaging board game-based learning systems provide comprehensive coverage of biology, physics, and earth science curricula and are designed to help increase student scores on standardized testing. Sample products will be provided.

### 1:30–6:00 PM NSTA Symposium

**FDA/NSTA Symposium: Teaching Science with Food Safety (SYM-3)**  
(Grades 5–12) Franklin 12, Marriott

**Tickets Required: \$54**

**Alan M. Tart**, U.S. Food and Drug Administration, Atlanta, Ga.

**Sufian Alkhalidi** and **Sherri McGarry**, U.S. Food and Drug Administration, College Park, Md.

**Ken Bingman**, Blue Valley West High School, Overland Park, Kans.

**Elena Stowell**, Kentwood High School, Covington, Wash.

**Mimi Cooper**, Consultant, Green Cove Springs, Fla.

For description, see Volume 1, page 57.

**2:00–2:30 PM Presentation****SESSION 1****“Bridging” the Span Between Lower and Middle School Science (Gen)***(General) Hall D/Room 17, Convention Center***Joy E. Paul** (*jpaul@springside.org*), Springside School, Philadelphia, Pa.**Darin Katz**, The Agnes Irwin School and Perelman Jewish Day School, Rosemont, Pa.**Glen Feinberg** (*gfeinberg@pjds.org*), Perelman Jewish Day School, Wynnewood, Pa.**Gail Korostoff**, Saligman Middle School and Perelman Jewish Day School, Melrose, Pa.

Create a fun, competitive, inquiry-oriented boats and bridges project to bring together elementary, middle level, and even college science students.

**2:00–3:00 PM Reception****GEICO/NSTA New Member Orientation***(By Invitation Only) Grand Salon A/B, Marriott*

Please join us for this exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments while hearing about how preservice and new teachers can save money on BOTH their NSTA membership dues as well as auto insurance! If you joined NSTA as a member after June 1, 2009, and/or received an e-mail invitation to this event from NSTA, please join us! This event is graciously sponsored by GEICO.

**2:00–3:00 PM American Geophysical Union (AGU) Lecture****Predicting Earthquakes and Volcanic Eruptions: What Can and Cannot Now Be Done? (Earth)***(General) 201C, Convention Center*

**Stephen Malone** (*steve@ess.washington.edu*), 2010 IRIS/SSA Distinguished Lecturer, University of Washington, Seattle

Predicting disastrous earthquakes and volcanic eruptions is a major goal of earth science research. What is the current state of the art in making such predictions? An ap-

parent paradox is that, while volcanic eruptions can often be predicted using earthquake data, there is currently no scientifically valid method of predicting earthquakes, despite claims often made in the popular press. A valid and socially useful prediction is one that includes size, place, and time in more detail than can be expected from random chance.

This talk will cover some successful predictions of volcanic eruptions and compare these to some previous attempts at earthquake prediction. What is fundamentally different about earthquakes that makes them so hard to predict? What are some promising avenues of research, such as “remote triggering” of earthquakes and the newly discovered Episodic Tremor and Slip (ETS) that may lead to success in the future?

*While Stephen Malone has formally retired as Director of the Pacific Northwest Seismic Network (PNSN), as a research professor emeritus he continues to be active in studying volcanic earthquakes, deep tremor, and seismic network operations. Earthquakes associated with volcanic processes have been a major research interest of his for the past 38 years. Dr. Malone was the principal scientist responsible for the seismic monitoring of Mount St. Helens and was very involved with the seismic predictions of its recent eruptions. He also seismically digs into the volcanic conduit systems at other Cascade volcanoes trying to understand how they work. With the reported discovery of deep non-volcanic tremors in Japan around 2000, he instigated a program at the University of Washington to study this phenomenon in Cascadia and continues to participate in field work, data analysis, and interpretation of these strange signals. Having led the transition of the PNSN from a small, local analog seismic network to a large, sophisticated digital network, Dr. Malone continues to advise and consult on matters of network operations.*

**2:00–3:00 PM Presentations**

**SESSION 1**

**NSTA Avenue Session: No Child Left Behind Update (Gen)**

(General) 307, Convention Center

**Jodi Peterson** (*jpeterson@nsta.org*), Assistant Executive Director, Legislative and Public Affairs, NSTA, Arlington, Va.

Come get an update on congressional efforts to reauthorize the Elementary and Secondary Education Act, or No Child Left Behind.

**SESSION 2**

 **ISTE: Emerging Technologies in the Science Classroom (Gen)**

(General) Hall D/Room 1, Convention Center

**Ben Smith** (*ben@edtechinnovators.com*), York, Pa.

**Jared Mader** (*jared@edtechinnovators.com*), Red Lion (Pa.) Area School District

Learn how to use the latest Web 2.0 tools, including Google Docs, Delicious, and VoiceThread. Get involved from the student's perspective.

**SESSION 3**

 **The Promise of Preschool Science (Gen)**

(Elementary–Middle Level/Supv.) Hall D/Room 5, Conv. Center

**Joy M. Barnes-Johnson**, Temple University, Philadelphia, Pa.

Urban schools have unique challenges when trying to advance equitable science teaching. Results from a case study of an urban elementary school reveal promising practices of engagement.

**SESSION 4**

 **Build an Interdisciplinary Polar Science Unit with Beyond Penguins and Polar Bears (Gen)**

(Elementary) Hall D/Room 6, Convention Center

**Jessica Fries-Gaither** (*fries-gaither.1@osu.edu*), The Ohio State University, Columbus

**Robert P. Payo** (*rpayo@ucar.edu*), The National Science Digital Library, Boulder, Colo.

Can a science topic meet multiple science standards and incorporate cross-curricular subjects? Yes! Come discover how polar science targets science, geography, literacy, and math standards.

**SESSION 5**

**A Head Start on Science (Bio)**

(Preschool) Hall D/Room 8, Convention Center

**Timshel E. Purdum** (*purdum@ansp.org*) and **Tiffany Allen** (*tallen@ansp.org*), Academy of Natural Sciences, Philadelphia, Pa.

**Mary Salisbury** (*rougehood@aol.com*), School District of Philadelphia, Pa.

**Claudia Setubal**, Please Touch Museum, Philadelphia, Pa.

Presider: Deborah Hansen, G.G. Meade School, Philadelphia, Pa.

The Head Start on Science program is a successful partnership between museums and a school district that provides science training for teachers, early childhood students, and families.

**SESSION 6** (two presentations)

(General) Hall D/Room 20, Convention Center

**Categorization of Concept-mapping Errors (Gen)**

**Jacob Thimor** (*jthimor@tx.technion.ac.il*), Technion—Israel Institute of Technology, Haifa

**Taha Massalha** (*tahamas@gmail.com*), The Academic Arab College of Education, Haifa, Israel

Students studying to be teachers in the science, technology, computer systems, and math disciplines studied the subject of hierarchical concept maps. We'll share some common errors.

**Designing and Using Concept Maps in the Science Classroom (Gen)**

**Michael M. O'Neal** (*moneal@mail.ucf.edu*) and **Sara Aronin** (*saronin8@mail.ucf.edu*), University of Central Florida, Orlando

Learn how to design and use concept maps in the science classroom as a means of formative and summative assessment.

**SESSION 7**

**She Discovered It! Bringing Women Scientists to Life in the Classroom (Gen)**

(General) Hall D/Room 25, Convention Center

**Christina N. Dragon** (*christina.dragon@gmail.com*), Smith College, Northampton, Mass.

Many women scientists may not have gotten the Nobel Prize, but they should have—they probably did most of the work!



**SESSION 8****Tips for Motivating Unmotivated Students (Gen)***(General)* Hall D/Room 27, Convention Center**Marvin Druger** (*mdrugr@syr.edu*), 1994–1995 NSTA President, and Syracuse University, Syracuse, N.Y.

Presider: Marian Grogan, TERC, Cambridge, Mass.

Come get some practical ideas for motivating unmotivated students at all educational levels. These tips are based upon 54 years of science teaching experience.

**SESSION 9****Writing a Successful Grant Proposal (Gen)***(General)* Hall D/Room 29, Convention Center**Patty McGinnis** (*pmcginnis@methacton.org*), Arcola Intermediate School, Eagleville, Pa.**Kitchka Petrova** (*kpetrova7@dadeschools.net*), Ponce De Leon Middle School, Coral Gables, Fla.

Make your ideas a reality—learn tips to writing successful grant proposals. We'll explore opportunities at state, federal, and corporate levels.

**SESSION 10****Podcasting Basics for Meaningful Learning (Gen)***(General)* Hall D/Room 30, Convention Center**Michael R. Gilchrist**, **Jennifer A. Brown** (*jbrown3@aum.edu*), and **Kellie Shumack** (*kshumack@aum.edu*), Auburn University at Montgomery, Ala.

Come get a crash course in podcasting and its practical uses in secondary education.

**SESSION 11****CSSS Session: Supporting Inquiry Using GIS Technology and Invasive Species (Env)***(Middle Level–High School)* Anthony, Loews**Anita Bernhardt** (*anita.bernhardt@maine.gov*), Maine Dept. of Education, Augusta**Sarah Kim** (*sarah@gmri.org*), Gulf of Maine Research Institute, Portland

The Gulf of Maine Research Institute and the Maine Department of Education partner to combine GIS technology, invasive plant investigation, and data collection and analysis to engage students in science inquiry.

**SESSION 12** (two presentations)*(College)* Commonwealth A, Loews**SCST Session: Teaching with Technology: Encouraging Students to Engage in Study Outside the Classroom (Bio)****Kaushik Dutta**, University of New England, Portland, Maine**Mary Schwanke** (*schwanke@maine.edu*), University of Maine, Farmington

We will look at the use of personal-response systems (clickers) for in-class quizzes on outside reading and for monitoring students' access to and time spent on web-based support using Blackboard.

**SCST Session: Stop Lecturing in Anatomy and Physiology and Allow Students to Truly Learn (Bio)****Thomas R. Lord** (*trlord@iup.edu*), Indiana University of Pennsylvania, Indiana

Anatomy and physiology are typically teacher centered. I'll show you how to get students involved.

**SESSION 13****Increasing Effective Interactions with Students: SATIC Coding and Self-Reflection (Gen)***(General)* Congress B, Loews**Scott Moore**, Ankeny High School, Ankeny, Iowa

Let's examine self-analysis and reflection methods that enable teachers to better engage students. Handouts provided.

**SESSION 14****NSELA Session: The Right Organization for All Science Education Leaders (Gen)***(General)* Congress C, Loews**Brenda Wojnowski** (*bwojnowski@gmail.com*), NSELA President, and Wojnowski and Associates, Inc., Dallas, Tex.**Linda Atkinson** (*latkinson@ou.edu*), University of Oklahoma, Norman**Janey Kaufmann** (*jkaufmann@susd.org*), Scottsdale (Ariz.) Unified School District

Visit with NSELA officers, district directors, and committee chairs and learn about NSELA services. See how the organization can be of benefit to you.

SESSION 15

**Coaching: The Tool for Renewal (Gen)**

(Supervision/Administration) *Regency C1, Loews*

**Kathy A. Yorks** (*kyorks@kcsd.us*), Central Mountain High School, Mill Hall, Pa.

Instructional coaching can provide you with the support necessary to re-energize and recommit yourself to your craft and students.

SESSION 16

**Frontiers of Physics for Mere Mortals (Phys)**

(High School–College/Informal Education) *Regency C2, Loews*

**Alex Griswold** (*agriswold@cfa.harvard.edu*), Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

**Michele McLeod** (*mmcleod@learner.org*), Annenberg Media, Washington, D.C.

Presider: Joyce M. Gleason (*joycegle@earthlink.net*), Educational Consultant, Punta Gorda, Fla.

Catch up on the latest physics research from string theory to the search for subatomic particles with a free multimedia resource in modern physics.

SESSION 17

**ASTE Session: Inquiring Minds, Inquiring Methods: The Science Fair as a Professional Renewal Experience for Teachers and Problem-solving Experience for Students (Gen)**

(General) *Tubman, Loews*

**Kenneth P. King** (*kking@roosevelt.edu*), Roosevelt University, Schaumburg, Ill.

Preservice teachers served as science fair mentors for elementary-level English language learners. We will examine both student academic growth and the intellectual and personal growth of the preservice teachers.

SESSION 18

**Growing Students NOT Grades (Gen)**

(Supervision/Administration) *Washington B, Loews*

**Todd B. Hilgendorff** (*hilgendorfft@guilderlandschools.org*), Farnsworth Middle School, Guilderland, N.Y.

Link achievement targets with assessment methods. We'll share samples of assessments and methods for communicating measurable student performance.

SESSION 19

**European Programs for Science Education (Gen)**

(Middle Level–High School) *302/303, Marriott*

**Martin Lindner** (*lindner@ipn.uni-kiel.de*), IPN Leibniz Institute for Science and Mathematics Education, University of Kiel, Germany

Presider: Wolfgang Graeber, IPN Leibniz Institute for Science and Mathematics Education, University of Kiel, Germany

Learn what's going on in Europe to foster science education in teacher professional development programs, especially addressing science literacy.

SESSION 20

**SmartGraphs (Gen)**

(Middle Level–High School) *305/306, Marriott*

**Carolyn J. Staudt** (*carolyn@concord.org*) and **Ed Hazzard** (*ehazzard@concord.org*), The Concord Consortium, Concord, Mass.

SmartGraphs are digital objects that “know” about themselves. SmartGraphs provide scaffolding to students to help them learn about graphs and the concepts conveyed in graphs.

SESSION 21

**How to Publish Your Ideas in a Professional Journal (Gen)**

(Middle Level–College) *401/402, Marriott*

**Erica K. Jacobsen** (*jacobsen@chem.wisc.edu*), *Journal of Chemical Education*, Madison, Wis.

**Patrice Pages** (*chemmatters@acs.org*), American Chemical Society, Washington, D.C.

Have great ideas you'd like to publish in a professional journal? Here is some information on getting started, overcoming common fears and obstacles, and more.

SESSION 22

**PDI Skills Pathway Session: Active Physics (Phys)**

(High School) *405, Marriott*

**Arthur Eisenkraft** (*arthur.eisenkraft@umb.edu*), 2000–2001 NSTA President, and University of Massachusetts, Boston

These guided inquiry activities prepare students to do a voice-over of a sports video and explain the physics of the action appearing on the screen. We will also look at how differential instructions can make physics accessible to all.

## SESSION 23

**Getting Published in an NSTA Journal (Gen)***(General)* 406, Marriott**Ken Roberts** (*kroberts@nsta.org*), Assistant Executive Director, Journals, NSTA, Arlington, Va.

Meet with the editors of NSTA's journals and learn how to prepare and submit your manuscript. Editors will be available to critique specific ideas for articles.

## SESSION 24

**PDI BSCS Pathway Session: Common Resources, Shared Consequences—Helping Students Understand****(Bio)***(High School–College)* 414/415, Marriott**Meridith Bruozas**, BSCS, Colorado Springs, Colo.

Experience activities that help students evaluate the issues surrounding population growth, resource consumption, and resource management and consider the consequences associated with their decisions.

## SESSION 25

**Developing Science Media Producers: Urban Students Build Identities as Creators of Media Instead of Consumers (Bio)***(General)* Franklin 2, Marriott**Dan Gilbert** (*daniel.gilbert@ops.org*), Omaha (Neb.) Public Schools**Melissa Hartman** (*melissa.hartman@ops.org*), McMillan Magnet Middle School, Omaha, Neb.**Todd LeMense** (*todd.lemense@ops.org*), Benson High School, Omaha, Neb.

Presenter: Jeff Erixon (*jeffery.erixon@ops.org*), Beveridge Magnet Middle School, Omaha, Neb.

Omaha Public Schools students and teachers produce original documentaries that challenge youth to become creators of science media as opposed to consumers.

## SESSION 26

**Near-Space Engineering (Phys)***(Middle Level–College)* Franklin 6, Marriott**Pat Blount** (*blountp@sd281.k12.id.us*), Moscow High School, Moscow, Idaho

Through a unique partnership with the University of Idaho, students design and fabricate experimental payloads, which are launched via weather balloon to between 90 and 100,000 feet. After the modules are recovered, the data and images are analyzed.

## SESSION 27 (two presentations)

*(Middle Level–High School/Informal)* Franklin 7, Marriott**Using NASA Computer Animations of the EM Spectrum to Teach Seventh Graders (Phys)****Virginia J. Butcher** (*ginger.butcher-1@nasa.gov*), NASA/Indyne, Arlington, Va.

New NASA videos use computer animation to help students visualize the EM spectrum and its use in studies of Earth and outer space.

**“Seeing” the Light: Using Ground- and Space-based Telescope Data to Support Understanding of the Electromagnetic Spectrum (Phys)****Susan M. Kelly** (*susankelly.ct@gmail.com*), Blind Brook High School, Rye Brook, N.Y.**Christopher Martin** (*martinbrockie@gmail.com*), Howenstine High Magnet School, Tucson, Ariz.

Astronomy research projects can provide an engaging, authentic context from which a collaborative team of students can expand their understanding of light.

## SESSION 28 (two presentations)

*(High School)* Franklin 8, Marriott**Toward Success in Advanced Placement Biology in an Urban High School: Bringing Students Up to Par (Bio)****Fred A. Pontillas** (*upontillas@boston.k12.ma.us*), John D. O’Bryant School of Mathematics and Science, Roxbury, Mass.**Jonathan W. McLaughlin** (*jmclaughlin4@boston.k12.ma.us*), Boston (Mass.) Public Schools

Urban biology teachers demonstrate how vertical and horizontal curriculum alignment was used to determine curriculum enhancements in biology that prepare students for AP Biology.

**Misconceptions in Biology: Results of the 2009 AP Biology Free Response Questions (Bio)****Eileen Gregory** (*egregory@rollins.edu*), Rollins College, Winter Park, Fla.**Melissa J. Cuellar** (*mcuellar@unitedisd.org*), J.B. Alexander High School, Laredo, Tex.**Israel Solon**, Educational Testing Service, Princeton, N.J.

Join members of the AP Biology Development Committee to examine common student misconceptions and methods for helping students avoid these mistakes.

**SESSION 29**

**Starting a Biotechnology Loan Program (Bio)**

(Middle Level–High School) Franklin 9, Marriott

**Julie Potter** ([jpotter@curennet.org](mailto:jpotter@curennet.org)), **Sarah Berke** ([sberke@curennet.org](mailto:sberke@curennet.org)), and **Kerry Donahue** ([kdonahue@curennet.org](mailto:kdonahue@curennet.org)), BioScience Explorations, New Haven, Conn.

Learn how to start a biotechnology equipment loan program. We'll share a wealth of information and personal experience.

**SESSION 30**

**Free, Powerful Molecular Simulations for Teaching Chemistry (Chem)**

(Middle Level–High School) Franklin 10, Marriott

**Chad W. Dorsey** ([cdorsey@concord.org](mailto:cdorsey@concord.org)), The Concord Consortium, Concord, Mass.

Free molecular simulations from The Concord Consortium can add a new dimension to your chemistry teaching. Take home a CD with software and resources. Bring your laptop if you like.

**SESSION 31**

**NOAA Climate Symposium Session: Climate Information in Your Neighborhood (Earth)**

(Elementary–High School) Franklin 11, Marriott

**Judy Koepsell**, NOAA National Weather Service, Silver Spring, Md.

**Barbara Mayes Boustead** ([barbara.mayes@noaa.gov](mailto:barbara.mayes@noaa.gov)), National Weather Service Omaha/Valley NE, Valley, Neb.

**Richard L. Thoman, Jr.** ([richard.thoman@noaa.gov](mailto:richard.thoman@noaa.gov)), National Weather Service Forecast Office, Fairbanks, Alaska  
Discover climate and weather information available to you from NOAA's National Weather Service and how you can access it for classroom activities.

**SESSION 32**

**Informal Science Day Session: Zoo Academy: Creation of a Smaller Learning Community Within the Community (Gen)**

(High School/Informal Ed) Grand Salon E/F, Group 1, Marriott

**Paul Hans** ([phans@paplv.esu3.org](mailto:phans@paplv.esu3.org)) and **Melissa Jabens** ([mjabens@paplv.esu3.org](mailto:mjabens@paplv.esu3.org)), Papillion-La Vista School District, Papillion, Neb.

Presider: Melissa Jabens

The Papillion-La Vista Schools and Omaha's Henry Doorly Zoo partnership has developed an academy to improve secondary student academic performance and promote post-secondary and college preparation.

**SESSION 33**

**Informal Science Day Session: Science in After School (Gen)**

(Informal Education) Grand Salon E/F, Group 2, Marriott

**Jason Freeman**, Lawrence Hall of Science, University of California, Berkeley

The Coalition for Science After School invites you to join its national campaign to provide meaningful science learning experiences through after-school programs.

**SESSION 34**

**Informal Science Day Session: Place-based Education and 21st-Century Skills Using New Mapping Technologies (Gen)**

(General) Grand Salon E/F, Group 3, Marriott

**Jessica Neely** ([scienceed@kqed.org](mailto:scienceed@kqed.org)), KQED/QUEST, San Francisco, Calif.

Explore how students can learn science and gain 21st-century skills by investigating and teaching others about the world using online mapping technologies.

**SESSION 35**

**Increase Science Enthusiasm on Your Higher Education Campus: Start an NSTA Student Chapter (Gen)**

(College) Grand Salon G, Marriott

**Jeremy Ervin** ([erwinja@muc.edu](mailto:erwinja@muc.edu)), Mount Union College, Alliance, Ohio

College/university science and science methods instructors! Want to supplement your courses in an exciting way? Come learn how to start an NSTA student chapter.

**SESSION 36**

**Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) (Gen)**

(Elementary–High School) Grand Salon K, Marriott

**Nafeesa Owens** ([nowens@nsf.gov](mailto:nowens@nsf.gov)) and **Elizabeth VanderPutten** ([evanderp@nsf.gov](mailto:evanderp@nsf.gov)), National Science Foundation, Arlington, Va.

If you're an outstanding teacher who would like to receive a Presidential citation and \$10,000, then stop by our session to learn more about PAEMST.

**SESSION 37****Moodle Your Way into Using Online Course Management (Chem)***(Middle Level/Supervision)* Grand Salon L, Marriott**Nancy Taylor** (*ntaylor@sdcoe.net*), San Diego County Office of Education, San Diego, Calif.

Driving professional learning with the Moodle course management tools translates directly to classroom implementation. Learn how students help support and drive the implementation.

**SESSION 38****Students as Space Professionals—Yes, Really!****(Earth)***(High School–College/Informal Education)* Freedom F, Sheraton**Suzanne T. Metlay** (*stmetlay@swfound.org*), Secure World Foundation, Superior, Colo.

Presider: Barbara Sprungman David (*barbaradavid321@aol.com*), Space Data Resources and Information, Golden, Colo.

Encourage your students to become space professionals with hands-on experiences. Artists and policy makers already use images and data taken from space—so can your students.

**SESSION 39****Bring the Real World of Ocean Science to Your Classroom! (Earth)***(Informal Education)* Independence B, Sheraton**Sharon K. Cooper** (*scooper@oceanleadership.org*), Consortium for Ocean Leadership, Washington, D.C.**Bob King** (*kingwhhs47@hotmail.com*), Friendship Christian School, Lebanon, Tenn.**Tina King** (*tinakingtn@hotmail.com*), West Wilson Middle School, Mount Juliet, Tenn.

Learn how to link your students directly to shipboard research through online tools and get free classroom resources to explore alongside the ship.

**SESSION 40** (two presentations)*(High School)*

Independence C, Sheraton

**Inspiring STEM Careers: Title 1 Urban Middle School-SUNY Maritime College Collaboration (Env)****Gioya Anita DeSouza-Fennelly** (*gioyafennelly@aol.com*), Eleanor Roosevelt I.S. 143M, New York, N.Y.**Marie de Angelis** (*mariedeangelis@sunymaritime.edu*), SUNY Maritime College, Throggs Neck, N.Y.

This project allows students to do college-level environmental science research on the campus of SUNY Maritime College under the guidance of cadets and graduate students. We'll share the results.

**SENSE IT****(Env)****Liesl A. Hotaling**, Beacon Institute for Rivers and Estuaries, Beacon, N.Y.**Leah Penniman** (*lpenniman@techvalleyhigh.org*), University at Albany East, Rensselaer, N.Y.

The SENSE IT program challenges participating students to design, build, deploy, and interpret data from their own environmental sensors.

**SESSION 41****Where Have All the Trees Gone? (Env)***(Middle Level)*

Independence D, Sheraton

**Deborah N. Harris** (*dharris@sfsedshouston.org*), St. Francis Episcopal Day School, Houston, Tex.

Presider: Julie Lakehomer (*julie@juliesimonlakehomer.com*), Retired Educator, Chicago, Ill.

Middle school students tackle the problem of local and global deforestation using activities across the curriculum and by planting trees to save their city and planet.

## 2:00–3:00 PM Workshops

### **The Magnet Lab: Magnets Are What We Do! (Grades K–6) (Phys)**

*(Preschool–Elementary) Hall D/Room 9, Convention Center*

**Carlos R. Villa** (*villa@magnet.fsu.edu*), National High Magnetic Field Laboratory, Tallahassee, Fla.

If you see only one session on magnets and magnetism, get it from the pros right here. Aimed at elementary students, this session will cover magnetism completely. And did I mention the giveaways?

### **Ready-to-Go Space Science Activities for Young Explorers (Earth)**

*(Elementary) Hall D/Room 10, Convention Center*

**Ruth L. Paglierani** (*ruthp@ssl.berkeley.edu*), University of California, Berkeley

Make the most of K–4 students' curiosity about space with these fun hands-on activities exploring the solar system and the Sun.

### **Recording the Rhythms of Stellar Heartbeats (Gen)**

*(General) Hall D/Room 11, Convention Center*

**Donna L. Young** (*donna.young@tufts.edu*), The Wright Center for Science Education, Tufts University, Medford, Mass.

**Pamela Perry** (*pperry@lewistonpublicschools.org*), Lewiston High School, Brunswick, Maine

Estimate and graph the changing brightness of a variable star over time and use the resulting light curve to determine the properties of the star.

### **Adapting Elementary Inquiry to Include All Students (Gen)**

*(Elementary) Hall D/Room 14, Convention Center*

**David A. Wiley** (*david.wiley@lr.edu*), NSTA Director, Pre-service Teacher Preparation, and Lenoir-Rhyne University, Hickory, N.C.

**Vanessa Silla-Zaleski** (*sillav2@scranton.edu*), The University of Scranton, Pa.

Explore a framework for making appropriate adaptations to engage all students and try some sample activities.

### **Planting the Seeds of Science at Kindergarten Centers (Gen)**

*(Preschool–Elementary) Hall D/Room 15, Convention Center*

**Jennifer C. Mesa** (*uloa@ufl.edu*), Terwilliger Elementary School, Gainesville, Fla.

**Michelle L. Klosterman** (*klosteml@gmail.com*), University of Florida, Gainesville

**Michele Krank**, P.K. Yonge Developmental Research School, Gainesville, Fla.

Stressed about science centers, standards, or inquiry? Come explore kindergarten science centers and learn how to adapt them for your class.

### **Shoobox Science: Science Activities That Fit in a Shoobox (Gen)**

*(Elementary) Hall D/Room 16, Convention Center*

**Patricia Patrick** (*ppatrick@bennett.edu*), Bennett College, Greensboro, N.C.

Combine science, math, and writing in a shoobox. Teachers of grades K–2 will leave this workshop with several ideas and their own shoobox activity.

### **Writing in Science: As Simple as 1, 2, 3 (Gen)**

*(Middle Level) Hall D/Room 18, Convention Center*

**Mary Pat Coburn** (*coburnmp@yahoo.com*), Smith Middle School, Glastonbury, Conn.

Learn how to incorporate simple writing strategies into the science curriculum. I'll show you how to develop and implement writing assignments and assessments. Handouts.

### **Simple Machines Made Easy! (Phys)**

*(Elementary–Middle Level/Inf) Hall D/Room 19, Conv. Center*

**Jennifer M. Edginton** (*jennifer.edginton@msichicago.org*),

**Laura Rico-Beck** (*laura.rico-beck@msichicago.org*), and

**April Chancellor**, Museum of Science and Industry, Chicago, Ill.

President: Nicole Kowrach, Museum of Science and Industry, Chicago, Ill.

Learn how to teach simple machines using everyday classroom objects. Free lesson plans and prizes.

### Development and Implementation of Inquiry-oriented Activities for the Middle School Science Classroom (Gen)

(Middle Level) Hall D/Room 21, Convention Center

**Craig A. Wilson** ([cwilson@po-box.esu.edu](mailto:cwilson@po-box.esu.edu)), East Stroudsburg University, East Stroudsburg, Pa.

Follow these steps to enhance your teaching through the use of scientific inquiry.

### Developing Questions That Yield Important K–8 Science Content (Gen)

(Elementary–Middle Level) Hall D/Room 22, Convention Center

**Rebecca E. Dyasi** ([bdyasi@aol.com](mailto:bdyasi@aol.com)), Long Island University, Brooklyn, N.Y.

**Hubert M. Dyasi**, Retired Educator, Yonkers, N.Y.

Use materials commonly found in urban environments to generate productive science-oriented questions and draw out important science concepts.

### Assessing Preservice Teachers in Preparation for Teaching Science (Gen)

(Elementary–Middle Level) Hall D/Room 23, Convention Center

**Meghan Twiest** ([mmtwiest@iup.edu](mailto:mmtwiest@iup.edu)) and **Mark Twiest** ([mgtwiest@iup.edu](mailto:mgtwiest@iup.edu)), Indiana University of Pennsylvania, Indiana

How can we model assessment with our preservice teachers in a way that is meaningful and goes beyond a midterm and a final? See what has worked in our combined 40 years of teaching science methods.

### Science E-Portfolio Assessments: Create Higher Levels of Thinking (Gen)

(General) Hall D/Room 28, Convention Center

**Tracey L. Wheeler** ([wheeler@dixie.edu](mailto:wheeler@dixie.edu)) and **Shirley Sung Davis** ([davis@dixie.edu](mailto:davis@dixie.edu)), Dixie State College of Utah, St. George

President: Shirley Davis

Learn how to create a science e-portfolio that can be used in a variety of ways to demonstrate higher levels of thinking.

### Science Performance Assessment Tasks According to Structure, Transfer, Sequence, and Organization (Gen)

(Middle Level–High School)

Commonwealth B, Loews

**Ann W. Wright** ([wrighta@canisius.edu](mailto:wrighta@canisius.edu)), Canisius College, Buffalo, N.Y.

**Rodney Doran** ([rdoran@buffalo.edu](mailto:rdoran@buffalo.edu)), SUNY at Buffalo, N.Y.

**Joe Engemann** ([engemann@brocku.ca](mailto:engemann@brocku.ca)), Brock University, St. Catharines, Ont., Canada

President: Ann W. Wright

Performance assessments have been developed in earth science, physics, chemistry, and biology, and in various instructional dimensions with the intent to improve laboratory scientific inquiry.

### Teaching Science to Diverse Learners (Bio)

(High School–College)

Commonwealth C, Loews

**Thomas R. Hinckley** ([thinckley@landmark.edu](mailto:thinckley@landmark.edu)), Landmark College, Putney, Vt.

Science courses are especially difficult for students who have what are often called “learning differences.” It’s possible to design effective courses that reach many kinds of students.

### CESI Session: Let Animals Teach Your Students Science (Phys)

(Elementary)

Washington A, Loews

**Sue Dale Tunnicliffe** ([lady.tunnicliffe@mac.com](mailto:lady.tunnicliffe@mac.com)), University of London, U.K.

These activities using low-cost items are a great way to explore and do hands-on science with inquiry.

### DuPont Presents—WOW! That’s Engineering! (Gen)

(Middle Level–High School)

307, Marriott

**Ronna Robertson** ([ronna.f.robertson@usa.dupont.com](mailto:ronna.f.robertson@usa.dupont.com)), DuPont Fayetteville Site, Fayetteville, N.C.

Help middle and high school girls experience engineering careers. Get an overview of the Society of Women Engineers’ “WOW! That’s Engineering” in a box.

**Using the Hardy-Weinberg Equilibrium to Illustrate Evolutionary Change (Bio)**

(High School) *Franklin 1, Marriott*  
**William H. Leonard** (*leonard@clemson.edu*), Clemson University, Clemson, S.C.

**John E. Penick** (*john\_penick@ncsu.edu*), 2003–2004 NSTA President, and Sangari USA, Cary, N.C.

Engage in a mathematical and calculator population genetics activity using a single trait that shows evolutionary change through founder effect and natural selection.

**Introduction to Heredity: What Traits Do I Have and Where Do They Come From? (Bio)**

(Middle Level–High School) *Franklin 3, Marriott*  
**Louisa A. Stark** (*louisa.stark@utah.edu*), University of Utah, Salt Lake City

Presider: Camille Ferguson, EDC’s Center for Children & Technology, New York, N.Y.

Introduce basic concepts about traits, inheritance, and DNA with math and graphing integration. Visit <http://learn.genetics.utah.edu> for online, paper, and take-home family activities.

**Linking Biology and Algebra with Population (Bio)**

(Middle Level–College) *Franklin 4, Marriott*  
**Cory Cloud** (*pcc02c@fsu.edu*) and **Melanie Hester** (*mhester@fsu.edu*), Florida State University School, Tallahassee

Here is a hands-on model for linking biology and algebra in a population activity.

**Parents as Science Teachers? Absolutely! (Phys)**

(General) *Franklin 5, Marriott*  
**John D. Hunt** (*jhunt@mc.edu*), Mississippi College, Clinton

Presider: Catherine Hunt (*hunt01@bellsouth.net*), Education Consultant, Pearl, Miss.

Come learn how to involve parents in the science curriculum. Parents teach, students learn, and everyone has lots of fun!

**Problem-based Learning and Technology Bring Molecular Bonding to Life (Chem)**

(General) *Grand Salon C, Marriott*  
**Alexander J. Poplawsky** (*ajp419@gmail.com*), Emory University, Atlanta, Ga.

**Aruna Kailasa** (*akailasa@yahoo.com*), Benjamin E. Mays High School, Atlanta, Ga.

Participate in a novel problem-based learning case as we explore ways to invigorate your students and help them become self-motivated learners of general chemistry.



**NSTA Press Session: Uncovering Student Ideas with Everyday Science Mysteries (Gen)**

(Elementary–Middle Level) *Grand Salon D, Marriott*  
**Richard Konicek-Moran** (*konmor@comcast.net*), Retired Educator, Amherst, Mass.

**Joyce Tugel** (*jtugel@mmsa.org*), Maine Mathematics and Science Alliance, Augusta

Presider: Anne K. Powers (*powersa@limestone.on.ca*), Limestone District School Board, Kingston, Ont., Canada

Learn how science stories can engage all students, elicit ideas encountered in the K–8 curriculum, and provide an entry into inquiry.

**Informal Science Day Session: STEM for All: An Overview (Gen)**

(Informal Education) *Grand Salon E/F, Group 4, Marriott*  
**Yonoco Evans** (*yevans@foundationsinc.org*), Foundations, Inc., Moorestown, N.J.

Out-of-school time can be a natural fit for STEM learning. We’ll look at techniques for facilitating STEM experiences and connecting after-school activities.

**Blinky Bots and New Age Graffiti (Phys)**

(Elementary–High School) *Grand Salon J, Marriott*  
**Craig Yokoi**, Purche Elementary School, Gardena, Calif.

Make the latest gizmos such as blinky bots and spinning mice using light-emitting diodes. Excite your students with 3-D “graffiti” art objects.

**NASA’s Planet Hunting Mission (Earth)**

(General) *Freedom E, Sheraton*  
**Alan Gould**, Lawrence Hall of Science, University of California, Berkeley

**Edna K. DeVore** (*edevore@seti.org*) and **Pamela Harman** (*pharman@seti.org*), SETI Institute, Mountain View, Calif.

The NASA Kepler mission is designed to discover Earth-sized planets in habitable zones of other stars. Learn classroom activities that model this discovery technique.



**Project SPECTRA!** (Earth)*(Middle Level–High School) Freedom G, Sheraton***Erin L. Wood** (*erin.wood@lasp.colorado.edu*), Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder

Presider: Neil Marks, Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder

Use light to bring solar system exploration, engineering, and real mission data into the classroom with these lessons and activities. Build and use an “open” spectrograph. Free CD with activities.

**National Marine Sanctuaries: Sentinels for Monitoring Climate and Ecosystem Change** (Env)*(Middle Level–High School) Freedom H, Sheraton***Jonathan Shannon** (*jonathan.shannon@noaa.gov*) and **Michiko J. Martin** (*michiko.martin@noaa.gov*), NOAA Office of National Marine Sanctuaries, Silver Spring, Md.Presider: Kate Thompson (*kate.thompson@noaa.gov*), NOAA Office of National Marine Sanctuaries, Silver Spring, Md.

Learn the science behind monitoring programs used by sanctuary scientists and educators as well as examples for use in classroom activities.

**NSTA High School Chemistry Share Session (Chem)***(High School) Independence A, Sheraton***Ted Koehn** (*tkoehn@lps.org*), Lincoln East High School, Lincoln, Neb.**Sandra Prejean** (*sprejean@htdiocese.org*), Vandebilt Catholic High School, Houma, La.Presiders: Jean Tushie (*jtushie@comcast.net*), NSTA Director, High School Science Teaching, and Eden Prairie High School, Eden Prairie, Minn., and Edward Lee (*ed.lee2@gmail.com*), Brooklyn Latin School, Brooklyn, N.Y.

The NSTA High School Committee highlights excellent presenters sharing inquiry and assessment through best practice, teaching tips, labs, and activities. Join us for some great chemistry ideas!

**What’s Up, Part 1: Classroom Activities from the Association of Astronomy Educators—Sun, Earth, and Planets** (Earth)*(Elementary–High School) Liberty A/B, Sheraton***Emilie Drobnes** (*emilie.drobnes@nasa.gov*) and **Aleya Van Doren** (*aleya.j.vandoren@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.**Jacob Noel-Storr** (*jake@cis.rit.edu*), Rochester Institute of Technology, Rochester, N.Y.

Presider: Aleya Van Doren

Master astronomy teachers from the Association of Astronomy Educators will share classroom-ready, hands-on astronomy activities that really work.

**“Astronishing” Astronomy: Active Galaxies and the Black Holes at Their Centers** (Earth)*(Middle Level) Logans 2, Sheraton***Pamela Whiffen** (*pwpwr@aol.com*), NASA Educator Ambassador, Scottsdale, Ariz.

Explore black holes and spark that sense of wonder in your students. Free NASA CD-ROM.

**Activities from Across the Earth System** (Earth)*(Elementary–Middle Level) Philadelphia North, Sheraton***Becca Hatheway, Randy M. Russell, and Lisa Gardiner** (*egardine@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.**David F. Mastie** (*mastie@umich.edu*), Retired Educator, Chelsea, Mich.

Educators and scientists share their repertoire of hands-on, inquiry-based activities spanning the five “spheres” of Earth system science. Handouts provided!

**Living Energy and Restoration of the Environment** (Env)*(General) Philadelphia South, Sheraton***Louise Chapman** (*rosebayone@aol.com*), Brewster Center, Deland, Fla.

Help students see the connection between leaves and the processes of photosynthesis and respiration. Learn to assess carbon dioxide and oxygen production of plants as disturbed habitats are restored with native plants. This work is connected to an environmental project that teaches inner city kids to appreciate nature and steward it.

### 2:00–3:00 PM Exhibitor Workshops

#### Advanced Placement® Chemistry: Determining the Rate Constant of a Chemical Reaction (Chem)

(Grades 9–12) 112A/B, Convention Center

Sponsor: PASCO

**Geoffrey Clarion**, Rocklin High School, Rocklin, Calif. This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of AP chemistry investigations—determining the rate constant of a chemical reaction. Participate in standards-based probeware lab activities from PASCO's new AP chemistry lab manual. Be one of the first to see how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

#### Renewable Energy Exploration: Solar Energy and Photovoltaic Cells (Earth)

(Grades 6–12) 113A, Convention Center

Sponsor: PASCO

**Elizabeth Kennedy**, PASCO, Roseville, Calif.

This session highlights the state-of-the-art science teaching solutions created through a partnership between Horizon Fuel Cell Technologies and PASCO. Investigate the energy output from a solar cell under different lighting and temperature conditions. Participate in a standards-based earth science SPARKlab and experience how SPARKscience™ can enhance your teaching practice and improve student understanding of relevant topics in alternative energy.

#### El Niño and Its Effects on Weather, Climate, and the Food Chain (Earth)

(Grades 9–12) 201A, Convention Center

Sponsor: It's About Time

**Mary Lynn Jensen**, It's About Time, Armonk, N.Y.

We've all heard the threats of global warming and climate change. Join us for activities that will help your students understand one of the major factors in climatic variation—El Niño. Practice data interpretation and graphing skills and discover how El Niño can even affect the price of a pizza!

### 2:00–3:15 PM Exhibitor Workshop

#### Introducing Inquiry Investigations™: Hands-On Inquiry Activities Focusing On Technology (Gen)

(Grades 7–10) 109A/B, Convention Center

Sponsor: Frey Scientific, School Specialty Science

**Ken Rainis** and **Lisa Bowman**, Frey Scientific, School Specialty Science, Ann Arbor, Mich.

Explore new hands-on, active-learning science modules and kits geared for students in grades 7–10. See how technology and inquiry help students understand essential science content in 10 science areas: Forensics, Physical Science, Cellular World, Biotechnology, Genetics, Life's Kingdoms, Environmental Issues and Solutions, Chemistry, Earth's Resources, and Human Biology.

### 2:00–3:30 PM Reception

#### NSTA District Meet and Greet in Honor of Wendell G. Mohling

Exhibit Hall, Convention Center

Join us in the exhibit hall for free refreshments, networking, and your chance to get to know your NSTA leadership! Discover ways to get and stay involved in all the workings of NSTA at the local, regional, and national level!

### 2:00–3:30 PM Presentation

#### SESSION 1

#### **PDI** LHS Pathway Session: Teaching About Trade-offs: How Science Can Inform the Decision-making Process (Gen)

(Middle Level–High School)

404, Marriott

**John Howarth** and **Barbara Nagle**, Lawrence Hall of Science, University of California, Berkeley

Explore strategies for integrating scientific issues related to biology, chemistry, and earth science into standards-based science units.

**2:00–3:30 PM Exhibitor Workshops****Teaching Advanced Placement Chemistry: Optimize Your Students' Laboratory Experiences (Chem)***(Grades 10–12)* 103C, Convention Center

Sponsor: Flinn Scientific, Inc.

**Scott Stahler**, Flinn Scientific, Inc., Batavia, Ill.

What makes a good AP Chemistry lab experiment? It's one that stimulates students to really think about the principles conceptually so that they can explain and predict the behavior of matter at any level, from the microscopic to the macroscopic. In this hands-on workshop you'll perform an experiment from *Laboratory Experiments for Advanced Placement Chemistry*, the best-selling manual for AP Chemistry available from Flinn Scientific. We will also present several interactive demonstrations from our new series of AP Chemistry Review Demonstrations. Handouts provided for all activities.

**There's Nothing Cheesy About the Scientific Method (Bio)***(Grades 8–12)* 104A/B, Convention Center

Sponsor: Sargent-Welch

**Ellyn Daugherty**, San Mateo Biotechnology Career Pathway, San Mateo, Calif.

This cheese-making lesson is a wonderful opportunity to show how advances in biotechnology, including the production of recombinant DNA proteins, have impacted an industry. In this interactive jam session, the presenter will model how she uses this cheesy activity to engage students and focus them on scientific methodologies and the business of biotech.

**GIS for Environmental Science Inquiry (Env)***(Grades 5–College)* 105A/B, Convention Center

Sponsor: ESRI

**Joseph Kerski** ([jkerski@esri.com](mailto:jkerski@esri.com)), ESRI, Redlands, Calif.**Roger T. Palmer** ([roger@gisetc.com](mailto:roger@gisetc.com)), GISetc, Dallas, Tex.

Explore how and why GIS (geographic information systems) and other geospatial technologies (GPS and remote sensing) are essential in environmental science education and careers. Investigate local to global topics such as biodiversity and human/environment interaction via practical classroom activities supporting science standards and inquiry. Receive free GIS software and resources.

**The Science of Stem Cells: Introductory Activities (Bio)***(Grades 9–College)* 106A/B, Convention Center

Sponsor: Howard Hughes Medical Institute

**Mary Colvard**, Deposit, N.Y.

Inexpensive materials such as Uno® cards and the Connect 4 game are used for this inquiry-based, hands-on workshop. Classroom-ready activities move from a basic understanding of stem cells to how DNA chip technology is used by researchers to determine which genes are being expressed or not expressed as a stem cell differentiates to become an insulin-secreting cell in the pancreas. Attendees will receive the *Potent Biology* DVD and a CD with the activities appropriate for high school, honors, AP, and introductory college biology students.

**Race into Physics with the CPO Science Energy Car (Phys)***(Grades 5–12)* 108A, Convention Center

Sponsor: CPO Science, School Specialty Science

**Patsy Eldridge**, CPO Science, School Specialty Science, Nashua, N.H.

Explore the concepts of velocity, force, mass, and acceleration with this exciting equipment. Friction, momentum, efficiency, potential energy, kinetic energy, and energy transformations are made simple with the Energy Car. If you want your students to learn how to measure, hypothesize, graph, predict, and perform repeatable experiments, this is for you.

**The Sky Through the Ages! (Earth)***(Grades 4–12)* 110A/B, Convention Center

Sponsor: Simulation Curriculum Corp.

**Herb Koller** ([hkoller@simcur.com](mailto:hkoller@simcur.com)), Simulation Curriculum Corp., Edina, Minn.

When our ancestors looked up at the night sky, what did they see and how did they explain what they saw? Join us as we use Starry Night on the big screen to recreate the night skies at different times throughout history and try to explain what we see.

**Teaching Science with Foldables** (Gen)  
(Grades 3–12) 111A/B, Convention Center

Sponsor: McGraw-Hill School Education Group

**Dinah Zike** ([jeanne@dinah.com](mailto:jeanne@dinah.com)), Dinah-Might Adventures, LP, San Antonio, Tex.

Learn how to improve your students' reading and study skills with Foldables. These interactive, hands-on graphic organizers will revolutionize the way you teach and the way your students study. Participants will make their own examples and learn strategies for implementing this powerful learning tool.

**The Big Questions of Science! Starting with the End in Mind Using *Understanding by Design*** (Gen)  
(Grades K–8) 113B, Convention Center

Sponsor: Pearson

**Grant Wiggins**, Authentic Education, Hopewell, N.J.

Grant Wiggins, coauthor of *Understanding by Design* and one of today's most influential educational reformers, will show you a new way of thinking about curriculum design, assessment, and instruction that will help you ensure student understanding. Take home handouts and free lesson activities.

**If You Can't Stand the Pressure, Get Out of the Classroom** (Gen)  
(Grades 4–8) 113C, Convention Center

Sponsor: Educational Innovations, Inc.

**Tami O'Connor**, Educational Innovations, Inc., Norwalk, Conn.

Pressure can be a difficult topic to teach. Educational Innovations carries awesome products that fit your budget to help teach this topic in a fun and motivational way! Teachers in grades 4–8 will discover great ideas they can immediately use in their classrooms.

**Energy Works!** (Phys)  
(Grades 3–5) 201B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Build an electric circuit, connect a solar cell, light a bulb, get a buzzer buzzing, and set a motor spinning. Work like a scientist to trace the flow of energy through a circuit, then investigate alternative, potential, and kinetic energy in systems powered by wind, sun, and water.

**Earth Science with Vernier** (Earth)  
(Grades 7–12) 202A, Convention Center

Sponsor: Vernier Software & Technology

**Robyn Johnson** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Perform experiments such as exploring magnetism, acid rain, and comparing UV protection of sunglasses from our popular *Earth Science with Vernier* lab book. Try these experiments using LabQuest or our new LabQuest Mini.

**AP and IB Science with Vernier** (Gen)  
(Grades 9–12) 202B, Convention Center

Sponsor: Vernier Software & Technology

**Gretchen Stahmer DeMoss** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Do you want to learn how to conduct AP and IB experiments using Vernier probeware? We'll show you how to do many experiments in less time with greater accuracy and precision. See how our award-winning data collection programs Logger Pro and LabQuest App allow students to meaningfully analyze their data. Participants will appreciate our new "Manual Configuration" mode in Logger Pro.

**The JASON Project** (Phys)  
(Grades 6–8) 203A, Convention Center

Sponsor: National Geographic–The JASON Project

**Peter Haydock** ([phaydock@jason.org](mailto:phaydock@jason.org)), The JASON Project, Ashburn, Va.

The JASON Project embeds the cutting-edge research of its partners—National Geographic Society, NOAA, and NASA—into core science curricula and professional development. This workshop will explore three standards-based curricula—Operation: Monster Storms, Operation: Resilient Planet, and Operation: Infinite Potential—and include hands-on demonstrations of lab activities that can be done in a classroom with minimal preparation and maximum results. Participants will analyze balloon rockets to determine the relationship between potential and kinetic energy transformations. Additional hands-on activities will allow participants to explore cutting-edge research in weather dynamics.

**It's Easy to Go Digital!****(Bio)***(Grades 6–College)*

203B, Convention Center

Sponsor: Swift Optical Instruments, Inc.

**Cynthia Syverson-Mercer** ([cynthia@swiftoptical.com](mailto:cynthia@swiftoptical.com)) and **David Doty** ([david@swiftoptical.com](mailto:david@swiftoptical.com)), Swift Optical Instruments, Inc., San Antonio, Tex.

Make science come alive by turning your classroom into a digital classroom. We'll show you simple and affordable techniques using microscopes and digital-imaging products that you can use every day. Learn how easy it is to use software and make it work with interactive whiteboards and technology.

**It's Alive! Carolina's Classroom Genetics****(Bio)***(Grades 8–College)*

204A, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Experience hands-on approaches to teaching the principles of genetics. This workshop features Carolina's Wisconsin Fast Plants®, C-FERN®, genetic corn, and flightless fruit flies. Effectively use these model classroom organisms to make genetics tangible for students. Free teacher materials and door prizes.

**Take the Leap: Carolina's Perfect Solution® Frog Dissection****(Bio)***(Grades 6–12)*

204B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Frogs are ideal specimens for introducing basic human anatomy and body systems. Experience Carolina's Perfect Solution frogs, the most lifelike and safest preserved frog specimens available. You'll practice basic classroom dissection techniques and explore the anatomy and physiology of the frog. Free dissection supplies and door prizes.

**Building Inquiry with BSCS Biology: A Human Approach****(Bio)***(Grades 9–12)*

304, Convention Center

Sponsor: Kendall Hunt Publishing Co.

**Paul Beardsley** ([pbeardsley@bscs.org](mailto:pbeardsley@bscs.org)), BSCS, Colorado Springs, Colo.

*BSCS Biology: A Human Approach* is based on inquiry-based activities and constructivist-learning strategies. Students transition from activities that explicitly guide their inquiry to doing their own inquiry. Along their journey, students learn how asking questions, conducting experiments, gathering data, forming explanations, and communicating their explanations are valuable skills.

**Inquiry Teaching and Learning: The Periodic Table****(Chem)***(Grades 8–10)*

Hall D/Room 2, Convention Center

Sponsor: LAB-AIDS, Inc.

**Mark Koker**, LAB-AIDS, Inc., Ronkonkoma, N.Y.

This middle level activity series is taken from the Matter unit from the SEPUP Issues and Physical Science course, developed with support from the National Science Foundation and used in classrooms across the country. Participants will classify a series of 20 element cards—first using criteria of their own choosing, then using current classifications used by modern chemists. They then examine ways to support the analysis questions, literacy, assessment, and technology associated with the activity. Take away handouts and materials to use in class next week!

**Teaching Physics with Roller Coasters: A Hands-On Approach****(Phys)***(Grades 4–10)*

Hall D/Room 4, Convention Center

Sponsor: CoasterDynamix

**Daniel Linden**, The Ohio State University, Columbus

**Jack Rimer** ([info@coasterdynamix.com](mailto:info@coasterdynamix.com)), CoasterDynamix, Elkton, Va.

Teach concepts such as position, energy, and speed using realistic roller coaster models and photo gates. Come explore our award-winning roller coaster system and try out an included lab.

**2:00–4:00 PM Meeting****SESD Business Meeting***Registration I, Marriott*

## 2:00–4:00 PM Presentation

### SESSION 1

#### **PDI** EDC and TERC Pathway Session: The Art of Talk and the Power of the Circle (Gen)

(Elementary) 411/412, Marriott

**Jeff Winokur** ([jwinokur@edc.org](mailto:jwinokur@edc.org)) and **Karen Worth** ([kworth@edc.org](mailto:kworth@edc.org)), Education Development Center, Inc., Newton, Mass.

**Martha Heller-Winokur** ([martha.heller\\_winokur@tufts.edu](mailto:martha.heller_winokur@tufts.edu)), Tufts University, Medford, Mass.

Learn strategies for developing the ability of students in grades 3–5 to engage in productive classroom science discussions.

## 2:00–5:00 PM Short Courses



#### Using Technology to Teach Inquiry and Science Concepts Through Outdoor Studies (SC-9)

(General) Maestro A/B, Doubletree

Tickets Required: \$79

**William J. Klein** ([wjmsklein@aol.com](mailto:wjmsklein@aol.com)), Western Iowa Tech Community College, Sioux City, Iowa

For description, see Volume 1, page 62.



#### Nurturing Science in Students Using Outstanding Science Trade Books (SC-10)

(Elementary–High School) Ormandy East, Doubletree

Tickets Required: \$34

**Kristin T. Rearden** ([krearden@utk.edu](mailto:krearden@utk.edu)), University of Tennessee, Knoxville

**Carla Billups** ([cbillups@haywood.k12.nc.us](mailto:cbillups@haywood.k12.nc.us)), Jonathan Valley Elementary School, Waynesville, N.C.

**Patricia Bricker** ([bricker@email.wcu.edu](mailto:bricker@email.wcu.edu)), Western Carolina University, Cullowhee, N.C.

**Suzanne Flynn** ([suzannemflynn@earthlink.net](mailto:suzannemflynn@earthlink.net)), Cambridge College, Cambridge, Mass.

**Donna L. Knoell** ([dknoell@sbcglobal.net](mailto:dknoell@sbcglobal.net)), Educational Consultant, Shawnee Mission, Kans.

**J. Carrie Launius** ([janetcarrie@gmail.com](mailto:janetcarrie@gmail.com)), Hazelwood School District, St. Louis, Mo.

**E. Wendy Saul**, University of Missouri–St. Louis

**Cindi Smith-Walters** ([csmithwa@mtsu.edu](mailto:csmithwa@mtsu.edu)), Middle Tennessee State University, Murfreesboro

**Diana Wiig** ([dwiig@uwyo.edu](mailto:dwiig@uwyo.edu)), University of Wyoming, Laramie

**Sally M. Walker** ([sally@sallymwalker.com](mailto:sally@sallymwalker.com)), DeKalb, Ill.

For description, see Volume 1, page 62.

## 2:30–3:00 PM Presentation

### SESSION 1

#### Undergraduate Studies for Earthquake Information Technology (UseIT) (Gen)

(College) Congress A, Loews

**Robert M. de Groot** ([degroot@usc.edu](mailto:degroot@usc.edu)), University of Southern California, Los Angeles

UseIT interns work in multidisciplinary, collaborative teams to tackle a scientific “grand challenge.” The topic varies each year but always entails doing computer science research.

## 3:00–4:00 PM Exhibitor Workshop

#### Moon Phases: Teaching in an Immersive Environment (Earth)

(Grades K–8) Booth #641, Exhibit Hall, Convention Center

Sponsor: Spitz, Inc.

**David Bradstreet** ([dbradstr@eastern.edu](mailto:dbradstr@eastern.edu)), Eastern University, St. Davids, Pa.

Moon phases is a frequently taught, challenging subject. Unfortunately, misconceptions are often taught or reinforced. Join educator/astronomer Dr. David Bradstreet and learn how our curriculum for immersive 3-D dome teaching is used to explore moon phases in a memorable, entertaining way.

## 3:00–4:30 PM Social

### NMLSTA Ice Cream Social

Howe, Loews

An invitation to all middle level science teachers—meet and network with colleagues. Free ice cream, friends, door prizes, and fun! For further information, visit [www.nmlsta.org](http://www.nmlsta.org).

**3:00–4:30 PM Exhibitor Workshops****Bio-Rad—Finding Funds for Biotechnology Studies: Grant-writing Workshop (Bio)***(Grades 7–College) 103B, Convention Center*

Sponsor: Bio-Rad Laboratories

**Kirk Brown** (*biotechnology\_explorer@bio-rad.com*), Tracy High School, Tracy, Calif.**Stan Hitomi** (*biotechnology\_explorer@bio-rad.com*), San Ramon Valley Unified School District, Danville, Calif.

Whether you want to introduce hands-on laboratory coursework or build an entire biotechnology program at your school, this workshop will help you get started and turn your dreams into reality. You'll receive grant-writing tools such as samples of proposals, letters of support, budgets, and justifications. For a practical application of the new tools, you are encouraged to submit proposals for a competitive grant from Bio-Rad for \$500 in materials.

**A Sneak Preview of the FOSS 2010 Planetary Science Middle School Course (Earth)***(Grades 5–8) 107A/B, Convention Center*

Sponsor: Delta Education, School Specialty Science—FOSS

**Larry Malone, Alan Gould, and Jessica Penchos**, Lawrence Hall of Science, University of California, Berkeley

How have we come to understand the solar system? How many other planetary systems are there and how do we find and explore them? These are some of the questions students engage with in FOSS Planetary Science 2010. This sneak preview will highlight new features, strategies, and content incorporated in the course.

**FOSS and DSM Kit Refurbishment/Material Management (Gen)***(Grades K–6) 108B, Convention Center*

Sponsor: Delta Education, School Specialty Science

**Kyle Gibson**, Delta Education, School Specialty Science, Nashua, N.H.

Management of science kit materials is a significant challenge for many districts. Delta Science Resource Service (DSRS) is a cost-effective way to manage your science kit program. A teacher's valuable time is better spent teaching science than chasing science materials. Join us to learn how DSRS can benefit your science program.

**3:00–5:00 PM Meetings****SCST Business Meeting***Commonwealth A, Loews***International Advisory Board Meeting***Conference Suite III, Marriott***3:30–4:00 PM Presentation****SESSION 1****Using Social Media Tools to Support Earth Science Education (Gen)***(General) Hall D/Room 10, Convention Center***Robert X. Trent**, Velocity7, Nevada City, Calif.**Sharon K. Cooper** (*scooper@oceanleadership.org*), Consortium for Ocean Leadership, Washington, D.C.

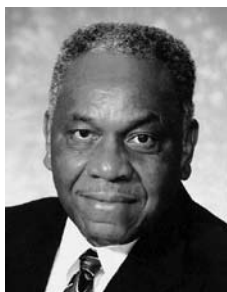
Connect teachers, students, and scientists with Facebook, YouTube, MySpace, Twitter, and other social networks.

**3:30–4:30 PM Robert H. Carleton Lecture**

**Innovations in Teaching and Learning That Prepare Students for World-Class Opportunities in Science, Technology, Engineering, and Mathematics (STEM) Careers (Gen)**

(General)

201C, Convention Center



**Fred D. Johnson**, 1997–1998 NSTA President, Science Education Consultant, and Adjunct Professor, University of Memphis, Cordova

President: G. Kip Bollinger ([kboll02@comcast.net](mailto:kboll02@comcast.net)), Retired Pennsylvania Dept. of Education Science Supervisor, Carlisle

Insights into teacher preparation, creative instructional strategies, and student motivational approaches must be envisioned in order to ensure that college readiness is achieved by our high school graduates. These are imperatives if we are to remain economically competitive in developing the 21st-century workforce.

*Fred D. Johnson began his 50 years of dedication to the advancement of science education as a young science teacher at a rural high school in the years prior to integration. His skills as a teacher and mentor produced outstanding graduates who have become leaders in the community, state, and nation, and Fred quickly became a leader both in his school system (teacher, supervisor, assistant superintendent, and superintendent) and professionally. A 40-year member of NSTA, he is a model of outstanding leadership and service for the organization as well as for the field of science education. His service to NSTA extends from president (1997–1998) to numerous other positions, including membership on the Executive Committee, Board of Directors, and Nomination Committee. His accomplishments range from addressing major challenges within NSTA to advocating for standards-based science education across the United States and internationally. He is the recipient of numerous civic and science education awards.*

**3:30–4:30 PM NSTA ESP Symposium II**

**NSTA Exemplary Science Program (ESP)...Realizing the Visions of the National Standards: It Takes ESP to Find Exemplary Science Programs (Gen)**

(General)

Grand Salon K, Marriott

Organized by Robert E. Yager, 1982–1983 NSTA President and Editor of the NSTA ESP Program

Coordinator: Robert E. Yager, University of Iowa, Iowa City

This session will include brief descriptions of programs that exemplify how the four NSES goals have been met. Discussion will center on how NSES *More Emphasis* suggestions have guided instruction. Participants in this symposium will include the following authors from specific monographs in the series.

**Inquiry: The Key to Exemplary Science**

**Bonnie S. Wood** ([bonnie.s.wood@umpi.edu](mailto:bonnie.s.wood@umpi.edu)), University of Maine at Presque Isle

**Holly Harrick** ([hharrick@ctsciencecenter.org](mailto:hharrick@ctsciencecenter.org)), Connecticut Science Center, Hartford

**Thomas R. Lord** ([trlord@iup.edu](mailto:trlord@iup.edu)), Indiana University of Pennsylvania, Indiana

**Tina Harris** ([taharris79@yahoo.com](mailto:taharris79@yahoo.com)), Anderson (Ind.) Community School Corporation

**3:30–4:30 PM Social**

**ExploraVision Ice Cream Social and Information Session**

Regency B, Loews

Discover elements of winning ExploraVision projects and succeeding in this leading K–12 science competition while enjoying an afternoon treat and a chance to win a Toshiba product door prize. Gain insight into the rules, developing innovative project ideas, and getting students involved and recognized. For more information, visit [www.exploravision.org](http://www.exploravision.org).



## 3:30–4:30 PM Presentations

## SESSION 1

**NSTA** NSTA Avenue Session: **SciLinks: Using the Online Assignment Tool** (Gen)*(Elementary–High School)* 307, Convention Center**Virginie L. Chokouanga** (*vchokouanga@nsta.org*), Customer Service and Database Administration, NSTA, Arlington, Va.**Tyson Brown** (*tbrown@nsta.org*), Director, SciLinks, NSTA, Arlington, Va.

The SciLinks Assignment Tool allows students to show what they have learned from the web resources SciLinks provides. Learn to create and distribute assignments.

## SESSION 2

**What Is Even More Amazing Than Google Earth?** (Earth)*(Middle Level–High School)* Hall D/Room 1, Convention Center**David W. Curry** (*scienceguydave@mac.com*) and **Joseph Holm** (*jholm@crsd.org*), Holland Middle School, Holland, Pa.

Learn how students at Holland Middle School in suburban Philadelphia use NASA's free, innovative ISS EarthKAM program to take pictures from the International Space Station.

## SESSION 3

**Engaging Urban Students in Urban Ecological Studies Through GIS** (Env)*(Middle Level–High School)* Hall D/Room 5, Convention Center**Mike Barnett** (*barnetge@bc.edu*), Boston College, Chestnut Hill, Mass.**Mike Lehman** (*mlehman@amfor.org*), American Forests, Urban Ecosystems Center, Washington, D.C.

Learn how to use GIS and computer modeling software to support urban students in becoming urban planners.

## SESSION 4

**Bridging the Outdoors with Science Education, ELA, Art, and Historical Perspectives** (Env)*(Informal Education)* Hall D/Room 6, Convention Center**Sheri I. Amsel** (*sheri@exploringnature.org*), Exploring Nature Educational Resource, Elizabethtown, N.Y.

Learn how to use nature trails and other outdoor resources to enhance science education while integrating ELA, art, and historical perspectives. Science activities/handouts included.

## SESSION 5

**Add It Up! Metacognitive Strategies + Good Science Curricula = Increased Student Learning!** (Gen)*(Middle Level–High School/Supv.)* Hall D/Room 7, Conv. Center**Donna Cleland**, The 21st Century Center for Research and Development in Cognition and Science Instruction, Conshohocken, Pa.

Find out who wins a \$10 million bet that adding cognitive science principles to existing middle school science materials will result in increased student achievement in science.

## SESSION 6

**The Science of Readers Theater** (Bio)*(Elementary/Informal Ed)* Hall D/Room 8, Convention Center**Melissa A. Stewart** (*hbeeprod@msn.com*), Children's Book Author, Acton, Mass.

Build literacy and teach science concepts in the elementary classroom by adapting science-themed picture books as fun Readers Theater scripts.

## SESSION 7

**Enhancing Science Vocabulary** (Gen)*(Elementary)* Hall D/Room 15, Convention Center**James Bane**, Glendale, Ariz.**Jodi Sanchez**, Luster Charter School, New Orleans, La.

President: Linda Bryson, Laurelton-Pardee Intermediate School, Rochester, N.Y.

The Enhancing Science Vocabulary program helps K–5 educators improve student understanding and retention of key scientific terms and concepts.

## SESSION 8

**Technology Goes Outdoors: Integrating Technology and Student Notebooks to Capture Seasonal Changes in the Schoolyard** (Env)*(Elementary)* Hall D/Room 16, Convention Center**Kimber A. Hershberger** (*khm12@scasd.org*) and **Judi Kur** (*jjk11@scasd.org*), Radio Park Elementary School, State College, Pa.

Our multi-age project for elementary students involved the use of digital equipment such as binoculars, microscopes, and integrated probeware to create schoolyard notebooks and podcasts.

**SESSION 9** (two presentations)

(Preschool–Middle Level) Hall D/Room 17, Convention Center

**Beyond Penguins and Polar Bears: An NSF-IPY 'zine** (Gen)

**Carol E. Landis**, The Ohio State University, Columbus  
I'll share successes and lessons learned from *Beyond Penguins and Polar Bears*, an online 'zine that helps K–5 teachers integrate science content with literacy skills.

**Bird-watching Inquiries Build Literacy Skills in Young Children** (Gen)

**M. Susan McWilliams** (*smcwilliams@unomaha.edu*), University of Nebraska at Omaha

In this session, participants will learn how a teacher incorporated a bird-watching project to develop science concepts and literacy skills in her young students.

**SESSION 10**

**The Cell and Ancient Egypt** (Bio)

(Elementary–Middle Level) Hall D/Room 18, Convention Center

**David Purvis** (*david.purvis@marist.edu*), Marist College, Poughkeepsie, N.Y.

Integrate an exciting unit on the cell with the ancient Egyptians, relating study of the cell and osmosis to their mummification process.

**SESSION 11**

**Bounce and Bend: Reflection and Refraction of Light** (Phys)

(Middle Level) Hall D/Room 19, Convention Center

**Meera Chandrasekhar** (*meerac@missouri.edu*), University of Missouri, Columbia

**Becky Litherland** (*slitherland@pkwy.k12.mo.us*), Parkway School District, St. Louis, Mo.

Introduce students to concepts and measurements on how light bounces and bends with these hands-on activities developed with NSF funding. Activities include experimental design, measurements, and projects. Handouts!

**SESSION 12**

**Using Fiction to Introduce and Reinforce Science Content in the Middle Grades** (Gen)

(Middle Level) Hall D/Room 20, Convention Center

**Cathleen W. Skidmore** (*cathleen.skidmore@hardin.kyschools.us*), West Hardin Middle School, Cecilia, Ky.

Use popular fiction to supplement grades 5–9 science content. I'll share a list of books and strategies.

**SESSION 13**

**Teaching About Scientific Research and the Process of Science** (Gen)

(General) Hall D/Room 25, Convention Center

**Anthony Carpi** (*acarpi@jjay.cuny.edu*), John Jay College, The City University of New York, N.Y.

We have developed a set of materials that discuss the nature of science and the practice of scientific research. Topics include scientific theories, research methods, data analysis and interpretation, and public perception of science.

**SESSION 14**

**Building Networks of Teacher Leaders in Rural North Carolina Communities** (Gen)

(General) Hall D/Room 27, Convention Center

**Colleen M. Karl** (*colleen\_karl@ncsu.edu*), North Carolina State University, Raleigh

**Mary Arnaudin** (*mary\_arnaudin@ncsu.edu*), North Carolina State University, Brevard

Presenter: Mary Arnaudin

Teacher learning networks are developing around place-based student environmental research programs. Learn how rural schools are supporting teacher leadership through active collaboration with community partners.

**SESSION 15**

**Using Humor to Enhance Scientific Literacy** (Gen)

(General) Hall D/Room 29, Convention Center

**Susan Clay** (*suzieclay@aol.com*), Maple Heights High School, Maple Heights, Ohio

**Diana M. Hunn** (*diana.hunn@notes.udayton.edu*), University of Dayton, Ohio

Humor in science can reinforce vocabulary; enhance story telling; and help in the recognition of irony, sarcasm, and satire. Humorous communications can connect science to many subjects!

**SESSION 16**

**Science Classrooms That Work for English Learner Students** (Gen)

(General) Hall D/Room 30, Convention Center

**Jerry D. Valadez**, Fresno, Calif.

**Ana G. Lopez** (*aglopez@comcast.net*), Yokomi Elementary Science and Technology Magnet School, Fresno, Calif.

Close the achievement gap in literacy and science for English learners with these research-based instructional strategies.

**SESSION 17****CSSS Session: Inquiry and Good Science Instruction: Are They the Same? (Gen)***(General)**Anthony, Loews*

**Linda Schoen-Giddings** (*lschoen@sde.sc.us*), South Carolina Dept. of Education, Columbia

Let's discuss the meaning of "inquiry," the research-based criteria for "effective instruction," and whether inquiry and good science instruction are synonymous.

**SESSION 18****Past AP Chemistry Exams Help the Future (Chem)***(High School–College)**Congress A, Loews*

**Harvey Gendreau** (*hgendreau@labsafety.org*), Laboratory Safety Institute, Natick, Mass.

Learn how to access past exams and use them in your classroom to increase students' learning and improve their performance on the College Board's AP Exam.

**SESSION 19****Genes, Health, and Society: A Web-based Course in Genetics and Genomics (Bio)***(High School–College)**Congress B, Loews*

**Ronald L. McNeel** (*rmcneel@bcm.edu*), **Nancy P. Moreno**, and **Deanne B. Erdmann** (*derdmann@bcm.edu*), Baylor College of Medicine, Houston, Tex.

Presider: Ronald L. McNeel

Gain access to an interactive web-based course for those seeking a broader understanding of genetics and genomics (applicability for professional development and advanced high school students).

**SESSION 20****NSELA Session: NSELA Working Groups: Network with Science Education Leaders (Gen)***(General)**Congress C, Loews*

**Brenda Wojnowski** (*bwojnowski@gmail.com*), NSELA President, and Wojnowski and Associates, Inc., Dallas, Tex.

**Janey Kaufmann** (*jkaufmann@susd.org*), Scottsdale (Ariz.) Unified School District

**Linda Atkinson** (*latkinson@ou.edu*), University of Oklahoma, Norman

NSELA working groups focus on topics of high interest to NSELA members. Meet with other science education leaders to collaborate and share in areas of common interest.

**SESSION 21****Science Staff Development Training Program (Gen)***(Supervision/Administration)**Regency C1, Loews*

**Julie E. Mosley** (*julie\_mosley@gwinnett.k12.ga.us*) and **Ken Leach** (*ken\_b\_leach@gwinnett.k12.ga.us*), Gwinnett County Public Schools, Suwanee, Ga.

**Alicia Y. Jackson**, Louise Radloff Middle School, Duluth, Ga.

**Heather Switzer**, Snellville Middle School, Snellville, Ga.

Discover a program designed to build capacity for science leadership among teachers as they prepare to develop educational resources and deliver staff development.

**SESSION 22****Helping Exceptional Students Thrive, Not Just Survive, in the Secondary Science Class (Gen)***(High School)**Regency C2, Loews*

**Bonnie Nelson** (*bnelson@arlington.k12.va.us*), Wakefield High School, Arlington, Va.

Effective accommodations and resources make science, including AP science, accessible for all (including gifted students with learning disabilities, ADHD, and autism).

**SESSION 23****ASTE Session: EQUIPPing Teachers to Achieve Meaningful Inquiry-based Teaching and Learning (Gen)***(General)**Tubman, Loews*

**Jeff Marshall** (*marsha9@clemsun.edu*), Clemson University, Clemson, S.C.

I'll share practical suggestions for improving inquiry-based teaching and learning, including a descriptive rubric to help measure the quality of inquiry being conducted in classrooms.

**SESSION 24****CESI Session: Oh, the Science You Can Teach: Strategies That Strengthen Science Through Literacy (Gen)***(Elementary)**Washington A, Loews*

**Jeannelle B. Day** (*dayj@easternct.edu*) and **Susannah Richards** (*richardss@easternct.edu*), Eastern Connecticut State University, Willimantic

**Cheryl W. Sundberg** (*sundbergc@att.net*), The University of Alabama, Millbrook

Extend scientific learning by integrating accurate high-quality science trade books into your reading and language arts instruction. Complete bibliographies will be supplied electronically.

**SESSION 25**

**Collaborative Coaching and Learning in Science: A Strand of the Boston Science Partnership (Gen)**

(Middle Level—College/Supervision) Washington B, Loews

**Jonathan W. McLaughlin** (*jmclaughlin4@boston.k12.ma.us*), **Suzanne Gill**, and **Pam Pelletier**, Boston (Mass.)

Public Schools

We will share our experiences in rolling out a collaborative coaching and learning in science model in Boston Public Schools, a partner in the Boston Science Partnership.

**SESSION 26**

**Science Map Making for Everyone (Gen)**

(Middle Level—High School/Informal) 302/303, Marriott

**Andrea Swensrud** (*scienceed@kqed.org*), KQED Public Media, San Francisco, Calif.

Students can learn science and gain 21st-century skills by teaching others about their local area through simple projects using Google Maps.

**SESSION 27**

**Say It with Animations (Gen)**

(Middle Level—High School) 305/306, Marriott

**Tess Ewart** (*mrsewart@aol.com*), A.I. Root Middle School, Medina, Ohio

Learn how students can create animations to illustrate science concepts. Brainstorm project ideas and see examples of student projects and rubrics.

**SESSION 28**

**Middle School Activities Focused On Addressing Gender Equity (Gen)**

(Middle Level) 307, Marriott

**Ronna Robertson** (*ronna.f.robertson@usa.dupont.com*) and **Barbara Knight**, DuPont Fayetteville Site, Fayetteville, N.C.

We'll look at how parents, teachers, and counselors can educate young women about opportunities in engineering and science-related fields.

**SESSION 29**

**PDI LHS Pathway Session: Using Issues as a Context for Teaching Science Content and Inquiry (Gen)**

(Middle Level—High School) 404, Marriott

**John Howarth** (*john\_howarth@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

Examine how personal and societal issues provide a context to motivate students to learn and apply content in the physical, life, and earth sciences.

**SESSION 30**

**Join an NSTA Journal Review Panel (Gen)**

(General) 406, Marriott

**Ken Roberts** (*kr Roberts@nsta.org*), Assistant Executive Director, Journals, NSTA, Arlington, Va.

Are you interested in becoming a reviewer for one of NSTA's journals? Meet with the editors to learn what is required, and how to apply.

**SESSION 31**

**PDI FHL Pathway Session: Local Knowledge—Addressing the Gap Between What Students Already Know and What Gets Taught (Gen)**

(Informal Education) 407/408, Marriott

**Leanne M. Avery** (*averylm@oneonta.edu*), SUNY College at Oneonta, N.Y.

**David Hartney** (*dhartney@firsthandlearning.org*), First Hand Learning, Inc., Buffalo, N.Y.

President: David Hartney

Share your experiences and ideas for addressing the gap between student conceptions of natural phenomena and scientific descriptions presented in formal academic settings and language.

**SESSION 32**

**Mapping Migration Routes Using Ancient DNA (Bio)**

(General) Franklin 2, Marriott

**Nancy L. Elwess** (*nancy.elwess@plattsburgh.edu*) and **Sandra Latourelle** (*latours@plattsburgh.edu*), SUNY Plattsburgh, N.Y.

What do ancient Maya skeletons reveal? Learn what DNA extraction, amplification, and analysis have disclosed about ancient Maya remains.

**SESSION 33**

**Beyond the Text: Using Trade Books, Picture Books, Magazine Articles, and Current Events in the Science Classroom (Bio)**

(Middle Level—High School) Franklin 3, Marriott

**Heather M. Worsham** (*hmw7a5@mizzou.edu*), University of Missouri, Columbia

**Hillary Enloe** (*henloe@mc-wildcats.org*), Montgomery County R-II High School, Montgomery City, Mo.

President: Jane Horwitz (*janeh@sas.upenn.edu*), University of Pennsylvania, Philadelphia

We'll examine the use of nontraditional reading materials in middle and high school science classrooms. We'll share ideas, examples, and suggestions.

**SESSION 34****Having Students Develop Collaborative Wiki Books (Phys)***(General) Franklin 6, Marriott***Curtis W. Hendricks**, American International School Dhaka, Bangladesh

Wikis can be used as a powerful tool for students to research, discuss, and reflect on information that is meaningful to their own coursework.

**SESSION 35****Using Art to Teach Ocean Science Topics to Formal and Informal Audiences (Gen)***(Middle Level–High School/Informal) Franklin 7, Marriott***Amy H. Cline**, University of New Hampshire, Durham  
**Perrin Chick** (*p.chick@seacentr.org*), Seacoast Science Center, Rye, N.H.

Learn how to effectively incorporate art in your science classroom to teach complex science topics. We'll focus on ocean science examples.

**SESSION 36** (two presentations)*(General) Franklin 8, Marriott***Free Online Teaching Resources from the National Institutes of Health (Bio)****Alisa Z. Machalek** (*alisa.machalek@nih.gov*), National Institute of General Medical Sciences, Bethesda, Md.

Free online materials from NIH focusing on medically relevant life sciences include interactive games, image galleries, stories, and the opportunity to submit questions to scientists.

**Medical Mysteries: A Web Adventure for Teaching Science Through Inquiry (Bio)****Kristi G. Bowling** (*kmg4@rice.edu*), Rice University, Houston, Tex.**Lynn Lauterbach** (*lynnlauterbach@gmail.com*), Erwin Middle School, Loveland, Colo.

Want a fun way to reinforce inquiry and process skills? Come experience a free website where students investigate the outbreak of a mysterious disease.

**SESSION 37****What Works for Inclusion Works for All Biology Students (Bio)***(Middle Level–High School) Franklin 9, Marriott***James J. Spagnoli** (*mistspag@aol.com*), East Meadow High School, East Meadow, N.Y.

These strategies based on current research allow all students to be successful without adding to the teacher's workload.

**SESSION 38****Detecting, Diagnosing, and Coping with Students' Chemistry and Physics Misconceptions (Chem)***(High School) Franklin 10, Marriott***Bettina Dembek** (*bdembek@edc.org*), Education Development Center, Inc., Newton, Mass.

Learn to use and analyze open-ended questions to uncover student misconceptions. Explore strategies that help students reach a solid and deeper understanding of the concepts.

**SESSION 39****NOAA Climate Symposium Session: Climate Change Toolkit (Env)***(Elementary–High School) Franklin 11, Marriott***Peggy Steffen** (*peg.steffen@noaa.gov*), NOAA National Ocean Service, Silver Spring, Md.

A new Climate Change Toolkit provides resources to teach students about the effects of climate change on wildlife and public lands and how they can become "climate stewards."

**SESSION 40****Assisting Preservice Teachers in Presenting at NSTA and Other Science Conferences: An NSTA Student Chapter Roundtable (Gen)***(College) Grand Salon G, Marriott***Matthew J. Maurer** (*maurerm@rmu.edu*), **Christina Lach**, **Rebecca Tokarsky**, and **Katie Chirdon**, Robert Morris University, Moon Township, Pa.

NSTA student members, are you interested in making a presentation at a future conference? Come learn about session proposals, travel funding, scheduling, and other topics.

**SESSION 41** (two presentations)

(General) *Grand Salon L, Marriott*  
**Clickers as Assessment and Pedagogical Research Tools** (Chem)

**Daniel B. King** ([daniel.king@drexel.edu](mailto:daniel.king@drexel.edu)), Drexel University, Philadelphia, Pa.

Clickers can do more than increase engagement. They can be used as both formative and summative assessments and can provide valuable pedagogical research data.

**Using Clickers as Formative Assessment in a Chemistry Classroom** (Chem)

**Fred Vital** ([fvital@fairfield.k12.ct.us](mailto:fvital@fairfield.k12.ct.us)), Fairfield Ludlowe High School, Fairfield, Conn.

Clickers are a great way to assess student knowledge. Q&A sessions engage all students and allow for discussion of incorrect or “gray” answers. Active participation by all students provides feedback.

**SESSION 42**

**Analyzing Black Holes and Supernovae Through International X-ray Eyes** (Earth)

(General) *Freedom F, Sheraton*

**A. Marie Pool** ([ampool@cablone.net](mailto:ampool@cablone.net)), Clinton High School, Clinton, Okla.

Learn how your students can explore the universe through X-ray light using recent data from the NASA-Japanese Suzaku satellite.

**SESSION 43**

**NSTA High School Physics Share Session** (Phys)  
(High School) *Independence A, Sheraton*

**Peter Hopkinson** ([phopkinson@vcc.ca](mailto:phopkinson@vcc.ca)), Vancouver Community College, Vancouver, B.C., Canada

**Fred Myers** ([myersf@glastonburyus.org](mailto:myersf@glastonburyus.org)), Glastonbury (Conn.) Public Schools

Presiders: Jean Tushie ([jtushie@comcast.net](mailto:jtushie@comcast.net)), NSTA Director, High School Science Teaching, and Eden Prairie High School, Eden Prairie, Minn., and James Madsen ([james.madsen@uwrf.edu](mailto:james.madsen@uwrf.edu)), University of Wisconsin, River Falls

The NSTA High School Committee highlights excellent presenters sharing inquiry and assessment through best practices, teaching tips, labs, and activities. Join us for some great ideas!

**SESSION 44**

**Integrating Online Professional Development with Field Investigations in Earth Systems Science** (Earth)

(Middle Level–High School) *Independence B, Sheraton*

**Christopher Soldat** ([csoldat@aea10.k12.ia.us](mailto:csoldat@aea10.k12.ia.us)), Grant Wood Area Education Agency, Cedar Rapids, Iowa

**Carolyn W. Jacobs**, WGBH, Boston, Mass.

We will showcase an online learning community’s use of WGBH Teachers’ Domain’s rich digital media combined with field investigations in Earth systems science.

**SESSION 45**

**I’m Too Busy for Social Networking—Why Bother?** (Env)

(General) *Independence C, Sheraton*

**Nancy M. Trautmann** ([nmt2@cornell.edu](mailto:nmt2@cornell.edu)), Cornell University, Ithaca, N.Y.

**Jennifer Fee** ([jms327@cornell.edu](mailto:jms327@cornell.edu)), Cornell Lab of Ornithology, Ithaca, N.Y.

**B.J. Berquist** ([bjb@tappedin.org](mailto:bjb@tappedin.org)), Retired Educator, New Bloomfield, Pa.

Facebook, Tapped-In, Second Life, NSTA Communities... it’s tempting to ignore the ever-growing list of networking options. We’ll look at how online interactions can enrich your teaching.

**SESSION 46**

**Watershed Moments: Designing an Environmental Curriculum That Flows** (Env)

(Elementary–Middle Level) *Independence D, Sheraton*

**Sandra J. Vander Velden** ([vanderveldensa@aasd.k12.wi.us](mailto:vanderveldensa@aasd.k12.wi.us)),

**Joann Engel** ([engeljoann@aasd.k12.wi.us](mailto:engeljoann@aasd.k12.wi.us)), and **Marisa Gressler** ([gresslermarisa@aasd.k12.wi.us](mailto:gresslermarisa@aasd.k12.wi.us)), Fox River Academy, Appleton, Wis.

Gather the tributaries of life, physical, and earth sciences and anchor them in a local waterway. Create a successful hands-on multidisciplinary environmental education curriculum focused on your own watershed.

**3:30–4:30 PM Workshops****General Science and Environmental Activities for Elementary Students (Env)***(Elementary)* Hall D/Room 9, Convention Center**Angela M. Restivo** (*restivo.angela@epa.gov*), U.S. Environmental Protection Agency, Dallas, Tex.

These inexpensive, integrated activities teach basic standardized science concepts while also enhancing environmental and ecological awareness.

**Project-Based Learning: Reviving and Fostering the Naturalist in the Urban Child (Gen)***(Elementary)* Hall D/Room 11, Convention Center

**Karen L. Anderson** (*karenanderson@stonehill.edu*), **Susan Mooney** (*smooney@stonehill.edu*), **Dana Gilfeather** (*dgilfeather@students.stonehill.edu*), **Nicole Klemonsky** (*nklemonsky@students.stonehill.edu*), and **Brittany Montano** (*bmontano@students.stonehill.edu*), Stonehill College, Easton, Mass.

Structured around active engagement with real-world problems or environmental issues, PBL emphasizes the role of the environment as a tool for motivating students.

**SOAR into Inquiry (Gen)***(Elementary/Informal Ed)* Hall D/Room 14, Convention Center**Adrienne S. Lopez** (*alopez@lsu.edu*), Louisiana State University, Baton Rouge

Science comes alive when students are free to inquire about the world around them. Learn to use video microscopes to facilitate cross-curricular inquiry lessons.

**Engaging Hands-On Inquiry Activities (Gen)***(Middle Level)* Hall D/Room 21, Convention Center**Sandra H. Van Natta** (*svanna1064@roadrunner.com*), Inter-society Polymer Education Council, Hamilton, Ohio**Sue E. Hall**, Polymer Ambassador, Stevens Point, Wis.

Learn techniques and receive materials for turning individual activities into inquiry-based experiments using inexpensive supplies such as polymers. Math and literature integration is included.

**The Outdoor Class Study Area: An Integrated Learning Experience (Gen)***(Preschool–Middle Level)* Hall D/Room 22, Convention Center**Carol A. Brennan** (*carolb@hawaii.edu*), University of Hawaii, Honolulu

A small area of your schoolyard can engage students in uncovering the mysteries behind how nature works. Handouts provided.

**The Broken Water Cycle (Gen)***(Elementary–Middle Level)* Hall D/Room 23, Convention Center**Kim Notin** (*notink@caryinstitute.org*) and **Cornelia B. Harris** (*harrisc@caryinstitute.org*), Cary Institute of Ecosystem Studies, Millbrook, N.Y.

Don't fall short of teaching the "real" broken water cycle. We will demonstrate diverse methods to investigate water.

**Inquiry: Practical Advice for the Classroom (Gen)***(General)* Hall D/Room 26, Convention Center**Jon E. Pedersen** (*jep@unl.edu*), ASTE President, and University of Nebraska–Lincoln**Jeffery A. Patterson** (*jefferyp@norman.k12.ok.us*), Norman (Okla.) Public Schools

Here are some simple steps and advice on how to build inquiry lessons.

**Connecting the Dots: Using Elluminate and Video Conferencing to Stay Connected to Rural Teachers (Gen)***(General)* Hall D/Room 28, Convention Center**Jennifer Albert** (*jennifer\_albert@ncsu.edu*) and **Margaret R. Blanchard** (*meg\_blanchard@ncsu.edu*), North Carolina State University, Raleigh

Join us with your computer for a demonstration of Elluminate and video conferencing and learn about our experiences with teachers in rural North Carolina.

**A Coherent Approach to Energy in High School Chemistry (Chem)***(High School–College)* Commonwealth B, Loews**Larry Dukerich** (*ldukerich@mac.com*), Arizona State University, Tempe

Learn to apply the tools developed in Modeling Instruction in High School Physics to represent energy storage and transfer in high school chemistry.

**Extreme Makeover: Science Edition! (Gen)***(Elementary–High School)* Commonwealth C, Loews**Deborah L. Hanuscin** (*hanuscind@missouri.edu*), **Aaron J. Sickel** (*ajsrhc@mizzou.edu*), **Kimberly Winkler**, and **Natalie Freeman**, University of Missouri, Columbia

Come rekindle the fires of science teaching and learning as we "make over" familiar activities to focus on inquiry and stimulate students' curiosity.

**AMSE Session: Integrating Physics in the Middle School Curriculum (Phys)**

(Elementary–High School) *Commonwealth D, Loews*

**Bobby Jeanpierre** (*bjeanpie@mail.ucf.edu*), **Frank McDonald** (*mcdonald@creol.ucf.edu*), and **Fatma Salman** (*salman@physics.ucf.edu*), University of Central Florida, Orlando

These hands-on, inquiry-based activities focus on content outlined in the Florida state standards.

**Screen Your Genes! (Bio)**

(Middle Level–High School) *Franklin 1, Marriott*

**Kerry Donahue** (*kdonahue@curennet.org*), **Sarah Berke** (*sberke@curennet.org*), and **Juli A. Potter** (*jpotter@curennet.org*), BioScience Explorations, New Haven, Conn.

Experience our newest BioBus experiment “The Gene Screen,” which teaches students about DNA mutations, skin cancer, and sun protection.

**Using Socratic Seminars in Science (Bio)**

(Middle Level–College) *Franklin 4, Marriott*

**Jeanne T. Chowning** (*jchowning@nwabr.org*), Northwest Association for Biomedical Research, Seattle, Wash.

Socratic seminars can be used to foster discussion of a challenging text. Come engage in an actual seminar.

**Exploring Newton’s Laws with NASA and Common Items (Phys)**

(Informal Education) *Franklin 5, Marriott*

**Daryl L. Taylor** (*daryl@darylscience.com*), Greenwich High School, Greenwich, Conn.

Using common household items, we will explore 18 different ways to demonstrate Newton’s laws in class. NASA freebies!

**NASA: Cool Astronomy (Earth)**

(Middle Level–High School) *Freedom E, Sheraton*

**Bryan J. Mendez** (*bmendez@berkeley.edu*), University of California, Berkeley

Learn about the infrared portion of the electromagnetic spectrum and what astronomers learn by studying objects in the universe using this invisible light.

**Scale the Universe (Gen)**

(Middle Level–High School) *Freedom H, Sheraton*

**Pamela Whiffen** (*pwpwr@aol.com*), NASA Educator Ambassador, Scottsdale, Ariz.

Release the power—the power of 10! Engage students using NASA science and show them how to scale magnitudes from submicroscopic to astronomical distances. Free CD.

**What’s Up, Part 2: Beyond the Solar System (Earth)**

(Elementary–High School) *Liberty A/B, Sheraton*  
**Jacob Noel-Storr** (*jake@cis.rit.edu*), Rochester Institute of Technology, Rochester, N.Y.

**Emilie Drobnes** (*emilie.drobnes@nasa.gov*) and **Aleya Van Doren** (*aleya.j.vandoren@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

Presider: Aleya Van Doren

Master astronomy teachers from the Association of Astronomy Educators (AAE) will share classroom-ready, hands-on astronomy activities that really work.

**The “Other” Side of Planet Mercury (Earth)**

(Elementary–Middle Level) *Logans 2, Sheraton*

**Lollie Garay**, Redd School, Houston, Tex.

**Nancy Tashima** (*tashima@aloha.net*), Onizuka Space Center, Kailua-Kona, Hawaii

The MESSENGER spacecraft has traveled over three billion miles and revealed a never-before-seen Mercury. Enjoy interactive fun and learn more about the mission.

**Teachers on the Estuary (Earth)**

(Middle Level–High School) *Philadelphia North, Sheraton*

**Sue Ellen Lyons** (*slyons@holycrossigers.com*), Holy Cross School, New Orleans, La.

**Atziri Ibanez** (*atziri.ibanez@noaa.gov*), NOAA National Estuarine Research System, Silver Spring, Md.

We will share investigations and activities from a course offered at National Estuarine Research Reserve that integrates coastal research, technology, field studies, and classroom lessons.

**Explore, Connect, and Change...Make an Earth Difference (Env)**

(General) *Philadelphia South, Sheraton*

**Ann Butcher** (*abutcher@sd129.org*), West Aurora School District #129, Aurora, Ill.

**Madhu Uppal** (*madhuuppal@sd54.k12.il.us*), Schaumburg School District 54, Schaumburg, Ill.

Help your elementary students connect to Earth. We’ll share reading resources, writing ideas, math connections, and technology links, as well as a plethora of hands-on activities.



**3:30–4:30 PM Exhibitor Workshops****Advanced Placement® Environmental Science: Modeling an Ecosystem (Env)***(Grades 9–12) 112A/B, Convention Center*

Sponsor: PASCO

**Ryan Reardon**, Alabama School of Fine Arts, Birmingham

This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of AP environmental science investigations—modeling ecosystems. Participate in standards-based probeware lab activities from PASCO's new AP environmental science lab manual by designing an experiment that explores the interrelationships of abiotic and biotic factors in a terrestrial ecosystem. Be one of the first to see how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

**Tough Topics in Elementary School Science: What Is a Circuit? (Phys)***(Grades K–5) 113A, Convention Center*

Sponsor: PASCO

**Geoffrey Clarion**, Rocklin High School, Rocklin, Calif.

This session explores PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of elementary school science investigations—circuits. Build simple circuits in a standards-based SPARKlab and experience how SPARKscience™ can enhance your teaching practice and improve student understanding of core topics.

**Investigating in Environmental Science: A Case-based Approach (Env)***(Grades 9–12) 201A, Convention Center*

Sponsor: It's About Time

**Tom Custer**, It's About Time, Armonk, N.Y.

Learn how to incorporate case-based units into your curriculum, support students in making environmental decisions, and identify the key components to a case-based unit. Leave with a practical hands-on activity that you can do in your classroom. Hear from teachers who have used the program and find out how it's working with their students.

**3:30–5:00 PM Reception****GEMS Network Reception***Liberty C, Sheraton*

Learn more about our growing network of educators and resources, featuring our new Space Science Sequences and the Seeds of Science™ program combining science and literacy! For more information, visit [www.lhsgems.org](http://www.lhsgems.org).

**3:30–5:00 PM Presentations****SESSION 1****PDI McREL Pathway Session: Designing Effective Science Lessons—Helping Students Think Scientifically (Gen)***(General) 401/402, Marriott*

**Anne L. Tweed** ([atweed@mcrel.org](mailto:atweed@mcrel.org)), 2004–2005 NSTA President, and Mid-continent Research for Education and Learning, Denver, Colo.

Learn more about designing instruction to promote students' scientific thinking and understanding. Take home sample lesson materials.

**SESSION 2****PDI BSCS Pathway Session: Using Science Notebooks to Develop Conceptual Understanding in Science (Gen)***(Middle Level–High School) 414/415, Marriott*

**Rebecca Kruse**, BSCS, Colorado Springs, Colo.

Explore the use of science notebooks as an effective sense-making and assessment tool in the science classroom.

### 3:30–5:00 PM Exhibitor Workshop

#### **Innovating Science: Chemistry Demonstrations That Really Get a Reaction!** (Chem)

(Grades 7–12) 303A/B, Convention Center

Sponsor: Fisher Science Education

**Alex Molinich**, Aldon Corp., Avon, N.Y.

Fisher Science Education and Innovating Science will teach you how to incorporate exciting, engaging chemical demonstrations into your chemistry curriculum. These demonstrations are guaranteed to grab students' attention and enhance their learning experience—all while teaching fundamental science concepts. These dynamic chemistry demonstrations will get your students to ask questions and help you present inquiry-based labs.

### 4:00–5:15 PM Exhibitor Workshop

#### **Inquiry Investigations™ Biotechnology Curriculum Modules and Kits** (Gen)

(Grades 7–10) 109A/B, Convention Center

Sponsor: Frey Scientific, School Specialty Science

**Ken Rainis** and **Lisa Bowman**, Frey Scientific, School Specialty Science, Ann Arbor, Mich.

With our new Inquiry Investigations biotechnology series, students learn foundational analysis skills that help them understand foundational science concepts. See how program software allows the preparation of web-based content along with individualized assessment. Compare both virtual and actual gel electrophoretic separations and conduct a DNA chip investigation.

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### 4:00–5:30 PM Exhibitor Workshops

#### **A World In Motion: The Elementary Design Experience** (Phys)

(Grades 3–6) 103C, Convention Center

Sponsor: SAE International

**Julie Nalducci**, SAE International, Warrendale, Pa.

SAE International's A World In Motion (AWIM) program is a series of design challenges that incorporate math, science, and technology standards. Benchmarked to the national standards, each of the AWIM activities incorporates the laws of physics, motion, and flight into age-appropriate hands-on activities that reinforce classroom STEM (science, technology, engineering, and math) curricula.

#### **Gettin' Funky with the Fundamentals of Physics** (Phys)

(Grades 7–12) 104A/B, Convention Center

Sponsor: Science Kit & Boreal Laboratories

**Matty-Matt Benware** ([mbenware@vwreducation.com](mailto:mbenware@vwreducation.com)), Science Kit & Boreal Laboratories, Tonawanda, N.Y.

Get down with the basics of physical science while you groove along with gravity, mechanics, conservation of energy, and more. Fun, new, innovative, and affordable, these middle/high school physical science experiments and demonstrations offer a fresh way to teach physics. Test-drive the systems yourself and learn how to use them for teaching physics at different levels.

#### **Living Large** (Gen)

(Grades 9–12) 105A/B, Convention Center

Sponsor: Alliance for Climate Education (ACE)

**Matt Lappe** ([matt.lappe@climateeducation.org](mailto:matt.lappe@climateeducation.org)), Alliance for Climate Education, Oakland, Calif.

Come experience ACE's assembly presentation! This presentation, which we give to high school students throughout the U.S., examines the science and background of climate change as well as solutions and ways students can get involved with meaningful carbon-reducing projects. Take part in an open conversation about climate education. Check a trailer of the presentation online at [www.acespace.org](http://www.acespace.org)

#### **Learning from Patients: Developing Models and Searching for Answers** (Bio)

(Grades 9–College) 106A/B, Convention Center

Sponsor: Howard Hughes Medical Institute

**Mary Colvard**, Deposit, N.Y.

Through a guided inquiry activity that uses segments of the HHMI DVD *Learning from Patients*, participants will develop and test models to explain a particular nervous system disorder. While developing these models, participants assume the role of medical researchers searching for the cause of ataxia. Take home the *Learning from Patients* DVD and a CD with the classroom-ready activity and PowerPoint appropriate for high school, honors, AP, and introductory college biology students.

**Chemistry and the Atom: Fun with the Atom-building Game (Gen)***(Grades 5–12)* 108A, Convention Center

Sponsor: CPO Science, School Specialty Science

**Scott Eddleman**, CPO Science, School Specialty Science, Nashua, N.H.

Our understanding of matter at the atomic level can be abstract, and students can have a hard time making sense of these fascinating concepts. Come experience innovative games and activities that give students fun opportunities to explore and grasp atomic structure and the periodic table.

**Experience a Digital Physics Curriculum (Phys)***(Grades 9–College)* 110A/B, Convention Center

Sponsor: Kinetic Books

**Mark Bretl** (*markb@kbooks.com*), Kinetic Books, Seattle, Wash.

Learn how a fully integrated digital physics curriculum can aid your instruction. Application of multiple learning styles and inquiry-based learning in a self-paced package provides students with experimentation and involvement. Join us for an overview of the design and use of our products along with many subject highlights.

**Teaching Science with Foldables (Gen)***(Grades 3–12)* 111A/B, Convention Center

Sponsor: McGraw-Hill School Education Group

**Dinah Zike**, Dinah-Might Adventures, LP, San Antonio, Tex.

Learn how to improve your students' reading and study skills with Foldables. These interactive, hands-on graphic organizers will revolutionize the way you teach and the way your students study. Participants will make their own examples and learn strategies for implementing this powerful learning tool.

**Real Issues, Real Data, Real Choices: Teaching Environmental Science in Today's High School (Env)***(Grades 9–12)* 113B, Convention Center

Sponsor: Pearson

**Karlie Termotto**, Pearson, Manalapan, N.J.

Discover new ways to engage and empower students of differing abilities in your high school environmental science classroom. Come learn how to integrate real-world case studies, up-to-date data and maps, and hands-on activities into your curriculum.

**The Private Eye: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (Gen)***(General)* 113C, Convention Center

Sponsor: Educational Innovations, Inc.

**Kerry Ruef** and **David Melody**, The Private Eye Project, Lyle, Wash.

Dandelions! Crickets! Eyeballs! Use a jeweler's loupe, everyday objects, simple questions, and thinking by analogy to go REALLY close-up—and develop the essential skills of scientist, writer, and artist in all your students. Explore this acclaimed program for creativity and critical thinking across subjects, K–16 through life. Free loupes, specimens, and lessons.

**Creepy Crawlers in the Middle School Classroom (Bio)***(Grades 6–8)* 201B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

This workshop offers a sampling of the plants, insects, and microorganisms that middle school students encounter as they investigate concepts such as life cycle, reproduction, growth, and heredity. Using hands-on activities from the STC Program™, participants explore body structure using a WOWBug™ and examine regeneration of blackworms.

**Incorporating Social Networking and Gaming in the Classroom (Gen)***(Grades 6–9)* 203A, Convention Center

Sponsor: National Geographic—The JASON Project

**Bill Jewell** (*bjewell@jason.org*), Digital Media and Technology, Ashburn, Va.**Marjee Chmiel** (*mchmiel@jason.org*), The JASON Project, Ashburn, Va.

While many educators have expressed interest in using video games to teach, few games have been designed as core curriculum with the educator in mind. This workshop illustrates The JASON Project's suite of standards-based games designed to be integrated directly into the middle school science curriculum. The workshop will also explore how trends in social media allow for meaningful, ongoing opportunities to engage and motivate students.

**The Watershed Tour** (Env)  
(Grades 4–8) 203B, Convention Center

Sponsor: LaMotte Co.

**Kristen Travers**, Stroud Water Research Center, Avondale, Pa.

Join us for a virtual tour of four stream sites and gather data on their chemistry and biology. Filled with hands-on experiences, the Watershed Tour, developed by Stroud Water Research Center and LaMotte, is an ideal introduction to watersheds, stream ecology, and the impact of land use on water quality. Door prizes!

**From Fast Gels to Fruit Flies** (Bio)  
(Grades 9–College) 204A, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

Run DNA fingerprinting gels in as little as 12–18 minutes! This workshop provides hands-on experience with Carolina's new Fast Gels Kit, which includes both environmental forensic and genetic screening scenarios. Also, observe Carolina's new Easy Fly™ system, which simplifies teaching with *Drosophila* by eliminating the need to manually collect virgin females.

**SQUID INK-UIRY: Inquiry-based Invertebrate Anatomy Through Squid Dissection** (Bio)

(Grades 9–12) 204B, Convention Center

Sponsor: Carolina Biological Supply Co.

**Carolina Teaching Partner**

These beautiful, mysterious creatures fascinate students and teachers. Learn morphology and anatomy of the common squid, a representative mollusk, through hands-on, guided, basic dissection and detailed dissection of the organ systems. Much easier than other mollusks such as clams, large specimens provide a clear view of invertebrate anatomy.

**Charge the Battery...Change the World!** (Env)  
(Grades 5–12) 304, Convention Center

Sponsor: General Motors

**Chevy Volt Expert**

It's time to get students charged up about the electrification of the automobile! This workshop, presented by a leading Chevrolet Volt expert, will cover electricity, the future of cars, and lessons that you can use in your classroom. USB drives with educational resources will also be available.

**Inquiry Teaching and Learning: Classifying Space Objects** (Earth)

(Grades 6–7) Hall D/Room 2, Convention Center

Sponsor: LAB-AIDS, Inc.

**Mark Koker**, LAB-AIDS, Inc., Ronkonkoma, N.Y.

This middle level activity series is taken from the Solar System unit from the SEPUP Issues and Earth Science course, developed with support from the National Science Foundation and used in classrooms across the country. Participants will classify a series of 24 space object cards—first using criteria of their own choosing, then using current classifications used by astronomers. They will then examine ways to support the analysis questions, literacy, assessment, and technology associated with the activity. Take away handouts and materials to use in class next week!

**Get Smart About Biotechnology** (Gen)

(Grades 6–12) Hall D/Room 4, Convention Center

Sponsor: GetBiotechSmart

**Tony Smarrella** ([tsmarrella@adayana.com](mailto:tsmarrella@adayana.com)), Adayana, Indianapolis, Ind.

A comprehensive online resource sponsored by the United Soybean Board, GetBiotechSmart.com provides biotechnology and educational resources for teachers, including online educational modules, video podcasts, lesson plans, and presentations. Lesson plans and educational resources will be provided.

**4:00–6:00 PM Meeting**

**ACTS Teachers Meeting**

Franklin 13, Marriott

Department of Energy (DOE) Academies Creating Teacher Scientists (ACTS) participants will introduce their work connecting cutting-edge research to secondary science teaching through poster presentations.

**4:00–6:00 PM Workshop****Informal Science Day Session: Informal Science Education Share-a-Thon (Gen)***(General)**Grand Salon E/F, Marriott*

Presider: Elizabeth Mulkerrin (*elizabethm@omahazoo.com*), NSTA Director, Informal Science, and Omaha's Henry Doorly Zoo, Omaha, Neb.

**Phyllis Katz** (*pkatz15@gmail.com*), Retired Educator, Silver Spring, Md.

**American Museum of Natural History**, New York, N.Y.

**Eric Hamilton** (*ehamilton@amnh.org*)

**Exploratorium**, San Francisco, Calif.

**Julie Yu** (*jyu@exploratorium.edu*)

**Great Lakes Science Center**, Cleveland, Ohio

**Tracey Meilander** (*broaderimpacts@yahoo.com* and *meilandert@glsc.org*)

**Lawrence Hall of Science**, University of California, Berkeley

**Jonathan Curley** (*jcurley@berkeley.edu*)

**LIGO Science Education Center**, Livingston, La.

**Tien Huynh-Dinh** (*tien@ligo-la.caltech.edu*)

**Museum of Science and Industry**, Chicago, Ill.

**April Chancellor** (*april.chancellor@msichicago.org*)

**Nicole Kowrach** (*nicole.kowrach@msichicago.org*)

**Bryan Wunar** (*bryan.wunar@msichicago.org*)

**NASA Goddard Space Flight Center**, Greenbelt, Md.

**Carolyn Ng** (*carolyn.y.ng@nasa.gov*)

**National Center for Atmospheric Research**,

Boulder, Colo.

**Kyle Ham** (*kyleham@ucar.edu*)

**National Research Council**, Washington, D.C.

**Michael Feder** (*mfeder@nas.edu*)

**New York Hall of Science**, Queens

**Michaela Labriole** (*mlabriole@nysci.org*)

**Demetrius M. Lutz** (*dlutz@nysci.org*)

**Jasmine Maldonado** (*jmaldonado@nyscience.org*)

**Karen Saur** (*ksaur@nysci.org*)

**Omaha (Neb.) Public Schools**

**Chris Schaben** (*chris.schaben@ops.org*)

**Omaha's Henry Doorly Zoo**, Omaha, Neb.

**Emily Brown** (*educate@omahazoo.com*)

**San Diego Zoo's Institute for Conservation Research**, Escondido, Calif.

**Maggie Reinbold** (*mreinbold@sandiegozoo.org*)

**Sciencenter**, Ithaca, N.Y.

**Katie Levedahl** (*klevelandahl@sciencenter.org*)

**Rae Ostman** (*rostman@sciencenter.org*)

**TERC**, Cambridge, Mass.

**Marian Grogan**

**The Academy of Natural Sciences**, Philadelphia, Pa.

**Timshel Purdum** (*purdum@ansp.org*)

**The Field Museum**, Chicago, Ill.

**Anne Marie Fayen** (*afayen@fieldmuseum.org*)

**The Franklin Institute**, Philadelphia, Pa.

**Jessica Keil** (*jkeil@fi.edu*)

**Thirteen/WNET**, New York, N.Y.

**Maura Thompson**

**Twin Cities Public Television/PBS**, St. Paul, Minn.

**Lisa Regalla**

**University of Maryland**, College Park

**J. Randy McGinnis** (*jmcginni@umd.edu*)

**WGBH**, Boston, Mass.

**Susan Buckey** (*susan\_buckey@wgbh.org*)

**WNET.org**, New York, N.Y.

**Janice Fuld**

Forget the books...put the homework aside...and grab hold of a real live animal, views from space, or exciting real-world data at the Informal Science Share-a-Thon. This share-a-thon is intended to build awareness of the abundance of high-quality informal science education resources, tools, and opportunities available to enhance science learning. Spend the time exploring a multitude of opportunities informal educators can provide for your students. Informal organizations represented include zoos, museums, aquariums, media, and university outreach programs.

**5:00–6:00 PM Presentations**

**SESSION 1**

✓ **Lessons Learned from Implementing Engineering Learning Activities in an Urban Elementary Science Classroom (Gen)**

(Elementary) Hall D/Room 5, Convention Center

**Brenda M. Capobianco** (*bcapo@purdue.edu*), Purdue University, West Lafayette, Ind.

**Lisa Wujczyk** (*wujczyk1@clps.org*), **Genevieve Gelle** (*gelle@clps.org*), and **Steve Haney** (*haney@clps.org*), Miller Elementary School, Center Line, Mich.

Presider: Brenda M. Capobianco

Learn some practical strategies for integrating successful, standards-based, interdisciplinary K–5 engineering activities that promote science learning among urban school students.

**SESSION 2**

**Differentiation in the Science Classroom: Tips and Strategies That Work (Gen)**

(Elementary–High School) Hall D/Room 11, Convention Center

**Mary Lightbody** (*lightbody.1@osu.edu*), The Ohio State University, Newark

Effective use of differentiated instruction can help you meet the needs of your students. Learn some proven strategies that promote increased understanding.

**SESSION 3 (two presentations)**

(Elementary) Hall D/Room 14, Convention Center

**The Standards-based Science Fair: A New Tool for Full Inquiry (Gen)**

**Peter Rillero** (*peter.rillero@asu.edu*), Arizona State University West, Phoenix

Imagine a science fair with happy students, with no problems recruiting judges, where parent involvement feels appropriate, and where children have multiple opportunities to describe full-inquiry projects.

**Creating Eager Scientists Through School Science Clubs (Gen)**

**Casandra A. Flores** (*casandra.flores@ocps.net*), **Brett Scanlon** (*brett.scanlon@ocps.net*), and **Christine Smith** (*christine.smith@ocps.net*), Eagle’s Nest Elementary School, Orlando, Fla.

We created and maintained a successful science club in a Title 1 school.

**SESSION 4**

**Addressing Climate Change and the Impact It Has on Wildlife (Bio)**

(Elementary–Middle Level) Hall D/Room 18, Convention Center

**Kristen M. Waldron**, Philadelphia Zoo, Philadelphia, Pa.

**Antonia Davis**, Audubon Pennsylvania, Audubon

Presider: Kristen M. Waldron

The Philadelphia Zoo and Audubon Pennsylvania have partnered to help science teachers address the topic of climate change and its impact on wildlife.

**SESSION 5**

**Using Videoconferencing to Connect Students to Community Science: A “Real” Virtual Field Trip (Gen)**

(General) Hall D/Room 20, Convention Center

**Ray Barber** (*rbarber@chicousd.org*), Pleasant Valley High School, Chico, Calif.

Learn how readily available videoconferencing technology can connect your classroom to the field. Live, interactive, inexpensive...and it’s ALL produced by YOUR own students!

**SESSION 6**

**Science Inquiry and Computer-based Manipulatives: Improving Student Understanding and Achievement (Gen)**

(General) Hall D/Room 22, Convention Center

**Donna Abbruzzese**, Farnsworth Middle School, Guilderland, N.Y.

Experience science inquiry using computer-based activities created to engage and challenge students.

**SESSION 7**

**Using Innovation to Develop an Understanding and Appreciation of Science, Technology, and Societal Needs (Gen)**

(General) Hall D/Room 25, Convention Center

**Shari L. Laprise** (*slaprise@babson.edu*) and **Charles Winrich**, Babson College, Babson Park, Mass.

A cross-curricular group project allows students to apply their scientific knowledge to solve a problem using business innovation.

## SESSION 8

**Beyond the Bells and Whistles: Online Resources for Deepening STEM Literacy (Gen)***(General)* Hall D/Room 27, Convention Center**Robert V. Steiner** (*rsteiner@amnh.org*), American Museum of Natural History, New York, N.Y.**Susan Van Gundy** (*vangundy@ucar.edu*), The National Science Digital Library, Boulder, Colo.**Howard Lurie** (*howard\_lurie@wgbh.org*), WGBH Teachers' Domain, Boston, Mass.**Janice Koch** (*janice.koch@hofstra.edu*), Professor Emerita, Hofstra University, Hempstead, N.Y.

Presider: Ro Kinzler, American Museum of Natural History, New York, N.Y.

Despite the profusion of online sources for STEM, questions remain about quality, relevance, and classroom viability. Join the conversation as we explore these issues.

## SESSION 9

**Super Science for Special Education Teachers: An Integrated Professional Learning Community (Gen)***(General)* Hall D/Room 29, Convention Center**Elizabeth Niehaus** (*niehaus\_p@msn.com*), Niehaus and Associates, South Lyon, Mich.**Carol L. Jones** (*cjones@mysd.org*), Macomb Independent School District, Clinton Township, Mich.**Paul Niehaus** (*niehaus\_p@msn.com*), Washtenaw Community College, Ann Arbor, Mich.**Anthony Sky** (*asky@ltu.edu*), Lawrence Technological University, Southfield, Mich.

Come see what this first-ever science content grant funded in Michigan has done to increase content knowledge, inquiry pedagogy, and assessment for special education students and teachers.

## SESSION 10

**Anchoring Common Writing Assignments in the Content of District-approved Science Curriculum Materials (Gen)***(General)* Hall D/Room 30, Convention Center**Jonathan W. McLaughlin** (*jmclaughlin4@boston.k12.ma.us*), **Pam Pelletier**, **Bev Nadeau**, and **Suzanne Gill**, Boston (Mass.) Public Schools

A new literacy initiative in Boston anchors the content of student writing prompts in district-approved science curricula.

## SESSION 11

**CSSS Session: Go Green with GIS (Gen)***(General)* Anthony, Loews**Mozell P. Lang** (*mozell.lang@detroitk12.org*), Detroit (Mich.) Public Schools**Gwendolyn Johnson** (*gwendolyn.johnson02@detroitk12.org*), Breithaupt Career and Technical Center, Detroit, Mich.

Come explore how Geographic Information System (GIS) technology is used to inform science instruction in school greenhouses and classroom gardens. See how elementary, middle, and high school students map designs for creating a visual for gardening ecosystems. Designs include healthy garden layouts, nutrient balance of the soil, biodiversity in plant populations, and variations in the visual environment and landscape.

## SESSION 12 (two presentations)

*(High School–College)* Congress A, Loews**Creating Online Blended Courses a Nibble at a Time (Gen)****Gordon L. Wells** (*gordon.wells@ovu.edu*), Ohio Valley University, Vienna, W.Va.

Get started incorporating online course management systems in your classes one step at a time.

**Can Social Networking Sites Improve Your Class? (Gen)****Jason T. Abbitt**, Miami University, Miami, Ohio

Can sites like Facebook add to the quality of your class or are they a hindrance? We surveyed college students to find an answer.

## SESSION 13

**Standards-based Assessments (Gen)***(Middle Level–High School)* Congress B, Loews**Ted Willard** (*twillard@aaas.org*) and **George E. DeBoer** (*gdeboer@aaas.org*), AAAS Project 2061, Washington, D.C.

Come see how AAAS Project 2061 is developing standards-based assessment items and how to make use of their criteria to develop your own items.

**SESSION 14**

**NSELA Session: Middle School Science Teachers: Providing What They Need (Gen)**

(General) Congress C, Loews

**Barbara J. Reinert** (*breinert@susd.org*), Copper Ridge School, Scottsdale, Ariz.

Discover an innovative professional development model to keep teachers in middle school science by providing materials, training, and support. We'll share what one district is doing.

**SESSION 15**

**Professional Development and Improved Instruction Through Lesson Study (Gen)**

(Middle Level–High School/Supervision) Regency C1, Loews

**David L. Radford** (*dradford@uab.edu*), The University of Alabama at Birmingham

Teachers and university faculty relate their challenges and successes in improving teaching and learning in urban schools through collaborative lesson study.

**SESSION 16**

**Building Bridges (Gen)**

(Middle Level–High School) Regency C2, Loews

**Joel Gluck** (*jglucl@aol.com*) and **John Santangelo** (*jsantangelo13@verizon.net*), NEL-CPS Construction Career Academy, Cranston, R.I.

Problem-Based Learning (PBL) is a different way of presenting content and assessing students. Come see how science, math, technology, English, and social studies teachers collaborated in a PBL unit called Building Bridges.

**SESSION 17** (two presentations)

(Elementary/Supervision) Washington B, Loews

**Using Science Notebooks to Integrate Math and Science (Gen)**

**Christine L. Purkiss** (*cpurkiss@angelo.edu*) and **Donna Gee**, Angelo State University, San Angelo, Tex.

Help preservice teachers understand the integration of science and math. We'll share some activities.

**The Curriculum Umbrella: Asking Big Questions (Gen)**

**Sara B. Sweetman**, University of Rhode Island, Narragansett

**Faith Krause** (*fbkrause@yahoo.com*), Jamestown (R.I.) Public Schools

Learn about a second-grade classroom's journey to posing big questions, allowing students to determine methods of

learning while covering reading, writing, math, science, social studies, and engineering standards.

**SESSION 18**

**Connecting Content to the Real World Using Public Television and Radio (Gen)**

(Middle Level–High School) 302/303, Marriott

**Andrea Swensrud** (*scienceed@kqed.org*), KQED Public Media, San Francisco, Calif.

Learn how to engage diverse learners, promote science careers, and connect science standards to real-world stories with free multimedia resources from PBS stations.

**SESSION 19**

**Sci-Casting/Podcasting in the Science Classroom (Gen)**

(Middle Level–High School) 305/306, Marriott

**Robert T. Jefferson, Jr.** (*mrrtj@yahoo.com*), Tantasqua Regional Junior High School, Fiskdale, Mass.

Learn how to design and use sci-casting (podcasting) as an instructional tool that will engage, motivate, and inspire your science students.

**SESSION 20**

**Integrating Biology and Mathematics Through NIMBioS and Biology in a Box (Bio)**

(General) Franklin 2, Marriott

**Linda G. Stanley** (*douglasl2@k12tn.net*), Jacksboro Middle School, Jacksboro, Tenn.

**Sarah Duncan** (*sduncan7@utk.edu*), University of Tennessee, Knoxville

**Kathy DeWein** (*deweink@apsu.edu*), Austin Peay University, Clarksville, Tenn.

Learn about the education goals and activities of the new National Institute for Mathematical and Biological Synthesis (NIMBioS) at the University of Tennessee. This institute fosters research, education, and outreach at the interface of biological and mathematical sciences. Flash drive with math-biology lessons for the first 50 participants. Learn about a free program—a two-day workshop to get a set of Biology in a Box (10 units).



**SESSION 21** (two presentations)*(Middle Level–High School/Informal) Franklin 3, Marriott***Partnering Research Scientists and Secondary Science Teachers (Bio)****Ben Koo** (*ben.koo@ucsf.edu*) and **Andrew Grillo-Hill** (*andrew.grillo-hill@ucsf.edu*), University of California at San Francisco

Learn about the benefits of partnering early-career research scientists with secondary science teachers to co-plan and co-teach science lessons for middle and high school students.

**Optimizing Scientific Lab Placements for High School Students (Bio)****Maggie Jacobs** (*mjacobs@amnh.org*) and **Hilleary Osheroff** (*hosheroff@amnh.org*), American Museum of Natural History, New York, N.Y.

Explore a new model of scientific mentorship for high school students within a large urban natural history museum.

**SESSION 22****Using Inquiry and Modeling to Study Electrical Resistance (Phys)***(Middle Level–High School) Franklin 6, Marriott***Meera Chandrasekhar** (*meerac@missouri.edu*) and **Dorina Kosztin** (*kosztind@missouri.edu*), University of Missouri, Columbia

We will share three hands-on activities developed at A TIME for Physics First Summer Academies. Two investigate parameters that affect electrical resistance and one connects voltage, current, and resistance. Handouts.

**SESSION 23****Plants Can Do That? Addressing Student Misconceptions About Photosynthesis (Bio)***(Elementary–High School) Franklin 8, Marriott***Dan Vincent** (*dvincent@uco.edu*), University of Central Oklahoma, Edmond

Many students have misconceptions about photosynthesis. I'll share six activities that challenge student ideas about how plants work.

**SESSION 24****Using Superheroes to Connect Animal Structure and Function (Bio)***(Middle Level–High School) Franklin 9, Marriott***Jody L. Vogelzang** (*vogelzangj@libertychristian.com*), Liberty Christian School, Argyle, Tex.

Encourage creativity and imagination as you use the powers of superheroes to teach animal structure and function. Students use the basics of science to explain how body parts could be made invincible.

**SESSION 25****Simple and Engaging Chemistry Demonstrations (Chem)***(Middle Level–High School) Franklin 10, Marriott***Jill M. Barker**, Millbrook High School, Winchester, Va.

Demonstrations are a wonderful way to get students excited about chemistry. I'll share video demonstrations covering a variety of key chemistry topics, including density, equilibrium, and reactions.

**SESSION 26****NOAA Climate Symposium Session: Using Data to Teach About Climate Change in Estuaries Nationwide (Earth)***(Informal Education) Franklin 11, Marriott***Kristin Van Wagner** (*kristin@nbnerr.org*), Narragansett Bay Research Reserve, Prudence Island, R.I.**Atziri O. Ibanez**, NOAA, Silver Spring, Md.

Get background information on climate change impacts on our nation's estuaries and learn how to access and use innovative online data visualization tools.

**SESSION 27****NSTA Press Session: Classroom Community-building 21st-Century Style—Blogs, Wikis, and Video (Gen)***(General) Grand Salon D, Marriott***Joan A. Gallagher-Bolos** (*katiramom@gmail.com*), Glenbrook North High School, Northbrook, Ill.**Dennis W. Smithenry** (*dsmithenry@gmail.com*), Elmhurst College, Elmhurst, Ill.

Using Whole-Class Inquiry (WCI), there is a way to create a self-sufficient scientific community of learners. Web 2.0 and video aid tremendously in this effort.

**SESSION 28** (two presentations)

(General) *Grand Salon L, Marriott*  
Presider: Kimberly S. Loomis ([klloomis@kennesaw.edu](mailto:klloomis@kennesaw.edu)), Kennesaw State University, Kennesaw, Ga.

**High School Science Through the Eyes of an ELL**  
(Chem)

**Rochelle L. Lofstrand** ([lofstrand@fultonschoools.org](mailto:lofstrand@fultonschoools.org)), North Springs Charter High School, Sandy Springs, Ga.

ELL students struggle through science content in sheltered and mixed classrooms. Learn techniques to help these students master science concepts as well as the English language.

**Making Science Accessible to English Language Learners: Instructional Strategies for 6–12 Teachers**  
(Gen)

**Jacqueline T. McDonnough** and **Seonhee Cho**, Virginia Commonwealth University, Richmond

These classroom-tested strategies make difficult science content accessible to your ELL students. We'll share examples and student work from life, physical, and earth sciences.

**SESSION 29**

**“Out of This World” Opportunities from NASA’s Teaching From Space Project**  
(Earth)

(Informal Education) *Freedom E, Sheraton*

**René Flores**, NASA Johnson Space Center, Houston, Tex.

NASA’s Teaching From Space Office provides educators and students with opportunities to enhance STEM education using the unique experience of NASA space missions and research.

**SESSION 30**

**Meteorites Decoded: A Sideways Take on Asteroids, Comets, and the Wonderful World of the “Poor Man’s Space Probe”**  
(Gen)

(Middle Level–High School) *Independence B, Sheraton*

**Martin G. Horejsi** ([martin.horejsi@umontana.edu](mailto:martin.horejsi@umontana.edu)), The University of Montana, Missoula

Meteorites cross all science disciplines with reckless abandon. Whether physics, chemistry, biology, or geology, meteorites are a fascinating vehicle to teach it all.

**SESSION 31**

**Environmental Pathways: Cultivating Children’s Natural Desire to Learn**  
(Env)

(Elementary–High School) *Independence C, Sheraton*

**Linda Beyt** ([lbeyt@lpssonline.com](mailto:lbeyt@lpssonline.com)), Vermilion Conference Center, Lafayette, La.

**Paula Guidry**, L. Leo Judice Montessori and Nature School, Lafayette, La.

**Stacy Hess** ([smhess@lpssonline.com](mailto:smhess@lpssonline.com)), Lafayette Middle School, Lafayette, La.

**Chad Broussard** ([chbroussard@lpssonline.com](mailto:chbroussard@lpssonline.com)), Northside High School, Lafayette, La.

Butterfly gardens, worm farms, science partnerships, designing outdoor classrooms, coastal restoration projects, cross-curricular environmental integration! Join our K–12 environmental pathway team to share ideas.

**SESSION 32**

**Teaching and Learning with Monarch Butterflies**  
(Env)

(Preschool–Middle Level) *Independence D, Sheraton*

**Luella C. Vengenoek**, Alloway (N.J.) Township School Monarch Teacher Network (MTN) is an emerging network of teachers who are bringing monarchs into their classrooms and communities. Learn how you can join us.

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**5:00–6:00 PM Workshops**



**Reading and Writing Science with Fun Polymer Activities and Children’s Literature**  
(Gen)

(Elementary–Middle Level) *Hall D/Room 6, Convention Center*

**Cora S. Salumbides** ([cora\\_salumbides@yahoo.com](mailto:cora_salumbides@yahoo.com)), Jefferson Union High School District, Daly City, Calif.

Learn reading and writing strategies while doing fun hands-on polymer activities. Each activity relates to popular children’s books and literature.

**Keeping Things in Motion: Using Newton’s Laws to Understand the Universe**  
(Phys)

(Preschool–Middle Level) *Hall D/Room 7, Convention Center*

**Linda Lee Smith**, Paulsboro (N.J.) Public Schools

Use NASA space science to spice up your classes and teach about Newton’s laws of motion at the same time.

**Light! Sound! Action! (Phys)***(Elementary)* Hall D/Room 9, Convention Center

**Kristy W. Wellborn** (*kristi\_wellborn@gwinnett.k12.ga.us*), **Karen Hartung** (*karen\_hartung@gwinnett.k12.ga.us*), and **Kelly Gruhn** (*kelly\_gruhn@gwinnett.k12.ga.us*), Benefield Elementary School, Lawrenceville, Ga.

Integrate light and sound into language arts, math, and technology with these lesson ideas, hands-on activities, and technology productivity projects.

**Helping Young Children Understand the Concept of Time (Earth)***(Preschool–Elementary)* Hall D/Room 10, Convention Center

**Carol A. Brennan** (*carolb@hawaii.edu*), University of Hawaii, Honolulu

Experience a sequence of integrated inquiry activities proven to help preK–3 students construct their understanding of time.

**MicroExplorers: Going Beyond Small with Inquiry-based Microscopy for Elementary School Students (Gen)***(Elementary)* Hall D/Room 15, Convention Center

**Troy Dassler**, Aldo Leopold Elementary School, Madison, Wis.

This bilingual inquiry-based curriculum helps elementary school students learn about microscopy and the world that lies beyond the visible.

**You Teach the Science, Now Add the Engineering (Gen)***(Elementary)* Hall D/Room 16, Convention Center

**Charles H. Parsons** (*cparleefer@aol.com*) and **Robin Little** (*robinlittle.fl@gmail.com*), Douglas L. Jamerson, Jr., Elementary School Center for Mathematics and Engineering, St. Petersburg, Fla.

Walk through the steps of applying science and mathematics to develop age-appropriate engineering concepts. Leave with engineering lessons.

**Linking Literature and Science: A “Hook” for All Ages (Gen)***(General)* Hall D/Room 17, Convention Center

**Erica K. Jacobsen** (*jacobsen@chem.wisc.edu*), *Journal of Chemical Education*, Madison, Wis.

**Patricia B. McKean** (*gpmckean@msn.com*), Ossining, N.Y.

Need a “hook” to help new concepts stick? Pairing captivating picture books with level-appropriate science activities brings hands-on science to a wide range of students.

**Writing Outdoors (Gen)***(Preschool–Elementary)* Hall D/Room 19, Convention Center

**Dean M. Martin** (*anderson.martin@netzero.com*) and **Eric Meuse** (*emeuse2@boston.k12.ma.us*), Gardner Pilot Academy, Allston, Mass.

Learn how to use the outdoor classroom to motivate students to become better writers.

**Stories Without Words (Gen)***(Middle Level)* Hall D/Room 21, Convention Center

**Vito M. Dipinto** (*vdipinto@nl.edu*), National-Louis University, Wheeling, Ill.

**Kaki Dipinto** (*kaki\_dipinto@hotmail.com*), St. Gilbert School, Grayslake, Ill.

What if science was conceptualized as a story without using words? Discover three activities that use visual images to construct science stories.

**A Scientific Path from Geometry to Geography (Gen)***(Elementary–Middle Level)* Hall D/Room 23, Convention Center

**Bruce G. Smith** (*bsmith@clarion.edu*), Clarion University, Clarion, Pa.

Take students from entry-level location plotting through geometric applications to solve real-world forestry problems.

**Learning to Teach Science Outdoors and Connect to Other Projects (Bio)***(Middle Level)* Hall D/Room 28, Convention Center

**Joanna Snyder** (*joanna\_snyder@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

**Terry J. Shaw** (*terryshaw@aol.com*), Lawrence Hall of Science, University of California, Norman, Okla.

President: Terry J. Shaw

Learn effective strategies for managing students and embedding outdoor experiences within your packed curriculum.

**A Coherent Approach to Energy in High School Physics (Phys)***(High School–College)* Commonwealth B, Loews

**Larry Dukerich** (*ldukerich@mac.com*), Arizona State University, Tempe

**Jess E. Dykes** (*jess\_dykes@ridleysd.k12.pa.us*), Ridley High School, Folsom, Pa.

Learn how modeling instruction has developed a coherent way to represent energy storage and transfer in high school physics.

**Engage, Explore, and Create: Using Student-generated Content to Teach Science (Gen)**

(Middle Level–High School/Informal) Commonwealth D, Loews Daniella Quinones ([daniella.quinones@wgbh.org](mailto:daniella.quinones@wgbh.org)), WGBH Educational Foundation, Boston, Mass.

Integrate media literacy into your science curriculum and learn how student-generated content can engage students in the exploration of science. All technical backgrounds welcome.

**Using Science Notebooks and Activities in a Ninth-Grade Inner City Classroom (Gen)**

(Middle Level–High School) Regency A, Loews Nicola Vitale ([vitale.nico@gmail.com](mailto:vitale.nico@gmail.com)), Alexander Dvorak, and Carly Reiter, Banana Kelly High School, Bronx, N.Y. Experience what we have learned from using science notebooks. We will share activities, examples of student work, and resources and strategies.

**Need a New Medium for Performance Assessments? How About Museum Kiosks? (Gen)**

(Middle Level–High School) Washington A, Loews Patrick McQuillan ([mcquillan@iris.edu](mailto:mcquillan@iris.edu)), IRIS Consortium, Washington, D.C.

Engage students in learning through the easy creation of free, computer-based, museum-style kiosks as an interdisciplinary performance assessment. Finished products are displayed in schools' public spaces!

**Limits on Cell Size: Tweaking Labs to Teach About Nature of Science and Scientific Inquiry (Bio)**

(Middle Level–High School) Franklin 1, Marriott Kevin J. White ([whitkev@iit.edu](mailto:whitkev@iit.edu)), Gary M. Holliday ([ghollida@iit.edu](mailto:ghollida@iit.edu)), Darin S. Munsell, and Stephen A. Bartos ([sbartos@iit.edu](mailto:sbartos@iit.edu)), Illinois Institute of Technology, Chicago

Engaging students in hypothesis testing and learning about nature of science and scientific inquiry does not have to be complicated or time consuming. See how it can be done using probeware technology and a common life science lab, Limit on Cell Size.

**Nature in the City: Processes and Curricula That Inspire Early Childhood Learners (Bio)**

(General) Franklin 4, Marriott Jean Rosenfeld, American Museum of Natural History, New York, N.Y.

Presider: Jane R. Kloecker, American Museum of Natural History, New York, N.Y.

Learn how to develop meaningful science experiences for young children and take home handouts of unique favorites.

**Teaching Core Physics Concepts Through the Lens of Seismology (Phys)**

(High School) Franklin 5, Marriott Michael Hubenthal ([hubenth@iris.edu](mailto:hubenth@iris.edu)) and John Taber ([taber@iris.edu](mailto:taber@iris.edu)), IRIS Consortium, Washington, D.C.

Add relevance to core physics topics such as Newton's laws, waves, and work through a suite of "anticipatory or exit questions" using the lens of seismology.

**Environmental Science for Urban Learners (Env)**

(General) Grand Salon C, Marriott Laura Rico-Beck ([laura.rico-beck@msichicago.org](mailto:laura.rico-beck@msichicago.org)) and Patricia Messersmith ([patricia.messersmith@msichicago.org](mailto:patricia.messersmith@msichicago.org)), Museum of Science and Industry, Chicago, Ill.

Incorporate environmental science into your urban educational programming. Try building a wind turbine, explore the effects of acid rain, and discover urban gardening possibilities.

**Teaching Simple Machines (Pulleys) Through LEGO™ Engineering Design (Phys)**

(Elementary–High School) Grand Salon J, Marriott Ismail Marulcu ([marulcu@bc.edu](mailto:marulcu@bc.edu)) and Michael Barnett ([barnetge@bc.edu](mailto:barnetge@bc.edu)), Boston College, Chestnut Hill, Mass.

We will share a sample lesson on pulleys from an elementary simple machines module, which is prepared based on LEGO Engineering Design.

**Simulations and Interactive Multimedia Across the Earth Sciences from Windows to the Universe (Earth)**

(Informal Education) Freedom F, Sheraton Randy M. Russell, University Corporation for Atmospheric Research, Boulder, Colo.

Try some activities using computer-based simulations and interactive multimedia covering a range of earth science topics. CDs and handouts.

**Mercury...Emerging Through a Veil of Mystery (Earth)**

(General) Freedom G, Sheraton Julie Taylor, Consultant/Solar System Educator, Victorville, Calif.

These hands-on activities help explain why we have headed back to Mercury to unlock its mysteries. Explore the distance and scale of the solar system, how we investigate a planet by remote sensing, how gravity assist works, and how we communicate across such vast distances.

### Integrating the Science and History of Valley Forge National Park (Gen)

(Middle Level–High School) *Freedom H, Sheraton*

**Mary Jane Ansley** ([mansley@shanahan.org](mailto:mansley@shanahan.org)), Archdiocese of Philadelphia, Downingtown, Pa.

**Barbara Futej** ([bfutej@shanahan.org](mailto:bfutej@shanahan.org)), Bishop Shanahan High School, Downingtown, Pa.

Valley Forge was an excellent choice for an encampment area from an environmental and historical point of view. Join us for a virtual tour.

### Using Secondary Data Sets to Explore Earthquakes and Climate (Earth)

(Middle Level–High School/Informal) *Independence A, Sheraton*

**Jay Holmes** and **Hudson Roditi** ([hroditi@amnh.org](mailto:hroditi@amnh.org)), American Museum of Natural History, New York, N.Y.

The IRIS earthquake database and New York City Central Park Weather Data Set provide rich opportunities for developing testable hypotheses, for data review and synthesis, and for developing conclusions based on real-world data.

### What's Up, Part 3: Engaging K–12 Classroom Activities from the Association of Astronomy Educators (Earth)

(Preschool–Elementary) *Liberty A/B, Sheraton*

**Russ Harding** ([russstar@juno.com](mailto:russstar@juno.com)), Consultant, Stamford, Conn.

**Stephanie J. Slater** ([sslaterwo@gmail.com](mailto:sslaterwo@gmail.com)), University of Wyoming, Laramie

President: Timothy F. Slater ([timslater@gmail.com](mailto:timslater@gmail.com)), University of Wyoming, Laramie

Master astronomy teachers from the Association of Astronomy Educators will lead you through classroom-ready, hands-on K–12 astronomy activities that really work.

### Investigating Icy Worlds (Earth)

(Elementary–Middle Level) *Logans 2, Sheraton*

**Lollie Garay**, Redd School, Houston, Tex.

**Nancy Tashima** ([tashima@aloha.net](mailto:tashima@aloha.net)), Onizuka Space Center, Kailua-Kona, Hawaii

The surface features of icy worlds indicate active processes at work. Study these icy worlds with hands-on lessons on photometry.

### 5:00–6:30 PM Exhibitor Workshop

#### PASCO Presents the Eighth-Annual Just Physics Evening (Phys)

(Grades 5–12) *Room 114/Auditorium, Convention Center*

Sponsor: PASCO

#### Presenter to be announced

Please join us for our eighth-annual Just Physics Evening event filled with fun, food, and tips for teaching physics.

### 5:00–7:00 PM Meeting

#### NMLSTA Board Meeting (Part 2)

(NMLSTA Members Only) *Roberts Board Room, Loews*

### 5:00–7:00 PM Reception

#### PSTA Members Reception

(By Invitation Only) *JWs, Marriott*

### 5:00–7:00 PM Presentation

#### SESSION 1

#### **PDI** EDC Pathway Session: Writing in Science Using Firsthand Data (Gen)

(Elementary) *411/412, Marriott*

**Jeff Winokur** ([jwinokur@edc.org](mailto:jwinokur@edc.org)) and **Karen Worth** ([kworth@edc.org](mailto:kworth@edc.org)), Education Development Center, Inc., Newton, Mass.

**Martha Heller-Winokur** ([mwinokur@rcn.com](mailto:mwinokur@rcn.com)), Tufts University, Medford, Mass.

These teaching strategies help students write reports based on their own experiences and thinking.

### 5:30–6:00 PM Presentation

#### SESSION 1



#### Earth Science and Engineering Connections

(Earth)

(Middle Level–High School) *Hall D/Room 1, Convention Center*

**Greg Bartus** ([gregory.bartus@stevens.edu](mailto:gregory.bartus@stevens.edu)), Stevens Institute of Technology, Hoboken, N.J.

Explore earth science lessons and related engineering challenges that engage students in scientific inquiry, critical thinking, collaboration, and other 21st-century workforce skills.

**5:30–7:00 PM Reception**

**Student Chapter and Student Member Reception**

*Grand Salon G, Marriott*

A reception for NSTA student members, created especially to recognize and honor your hard work and enthusiasm as you begin what is hopefully a long and fruitful career toiling in science education. Hors d'oeuvres and refreshments will be served as you network with your peers. You'll also get to hear from and share your insights with key NSTA leadership, including NSTA President Pat Shane! Student Chapter representatives will have the opportunity to share their success stories and lessons learned with students at teacher preparation institutions that currently do not have an NSTA Student Chapter.

**6:00–8:30 PM NSTA Teacher Awards Gala**

*(Tickets Required: \$55) M-9 Millennium Hall, Loews*

Enjoy a fabulous evening celebrating with this year's teacher award recipients! ALL of the teacher awards will be presented in one grand evening. Join your colleagues in recognition of this year's winners at the NSTA Teacher Awards Gala. Evening attire is requested to honor our teacher award recipients. A limited number of tickets are available for this social event.

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Thursday.

**6:30–8:00 PM Reception**

**NESTA Friends of Earth Science Reception**

*Horizons Rooftop, Sheraton*

Have fun! Join your earth and space science educator colleagues at this reception hosted by the National Earth Science Teachers Association. For more information, visit [www.nestanet.org](http://www.nestanet.org).

**7:00–9:30 PM Social**

**SCST Social and Poster Session**

*Regency B, Loews*

**7:00–9:30 PM Exhibitor Workshop**

**A Night of Forensics: The Red Carpet Mystery (Bio)**

*(Grades 6–12)*

*Grand Salon H, Marriott*

Sponsor: WARD's Natural Science

**WARD's Forensics Science Team**

A crime has been committed on the Red Carpet at the Sci-A-Palooza Awards Show. As a V.I.P. guest it'll be up to you, using hands-on analysis and demonstration results, to solve the mystery and apprehend the culprit. Space is limited... first come, first seated. Advanced registration is required. For details, visit [www.WARDSCI.com](http://www.WARDSCI.com).

**8:30–10:00 PM Reception**

**NSTA Competition Reception**

*(By Invitation Only)*

*Howe/Lescaze, Loews*

*Hosted by Walt Disney Company and The Conrad Foundation.*

NSTA competition sponsors come together to co-host a special event to celebrate partnerships with NSTA that empower educators and students. We will be celebrating with special guests, food, drinks, and live entertainment.

## A Video Showcase of Inspiring Award-winning Teachers and Their Engaging Courses: Part 2

6:00 PM–12 Midnight • Commonwealth C, Loews



**Mitchell E. Batoff**, Past President, New Jersey Science Teachers Association, Nutley

**Gordon D. Clark**, Retired Educator, Manalapan, N.J.

**Linda Frederick** ([adnil@ptd.net](mailto:adnil@ptd.net)), East Hills Middle School, Bethlehem, Pa.

Presider: Gordon D. Clark

This is a continuation of a new three-part program presented here for the first time. The screenings will be interspersed with commentary, discussion, and some live demonstrations. There will be laughs mixed with much information on a wide range of topics. Pick up ideas and content that will broaden your knowledge and that you can use in your own teaching. Help select from an extensive menu of course excerpts:

RHONDA REIST teaching chemistry at Olathe North High School in Kansas; BENJAMIN SCHUMACHER of Kenyon College on The Quantum Enigma; RICHARD WOLFSON of Middlebury College on Physics in Your Body and in the Kitchen; RICHARD M. EAKIN of the University of California, Berkeley, begins a unit in Zoology 10 with a renowned scientist making a “guest appearance”; JOHN RENTON of West Virginia University on volcanic activity; KEN MILLER of Brown on Evolution: Fossils, Genes, and Mousetraps; KAY TOLIVER of New York City’s East Harlem on Estimation: Going to the Dogs, with 10-year-old students; DON HOWARD of Notre Dame on Albert Einstein: physicist, philosopher, humanitarian; ALEX FILIPPENKO of the University of California, Berkeley, on Understanding the Universe; DON SHOWALTER of the University of Wisconsin, demonstrations from The World of Chemistry; SCOTT STEVENS of James Madison University on Games People Play, the World of Game Theory, and Game Theory’s diverse application in business as well as science-technology problems associated with global warming, traffic congestion, evolution, and the use of almost any nonrenewable resource; VERNON N. ROCKCASTLE of Cornell on conceptual development in teaching and learning science; SHERWIN NULAND of the Yale School of Medicine on the fascinating story of Giovanni Battista Morgagni; MICHAEL STARBIRD of the University of Texas on Meaning from Data: Quack Medicine, Good Hospitals, and Dieting; and much more.

Dozens of door prizes directly related to this session will be raffled off through the entire evening. Receive a useful handout. Come and go, stay as long as you wish. Bring your dinner!



# National Earth Science Teachers Association



## Events at Philadelphia NSTA 2010

All NESTA events will be held in the Sheraton Philadelphia City Center  
Hotel Liberty A/B except as indicated.

### Friday March 19

**9:30** NESTA Geology Share-a-Thon

**11:00** NESTA Oceans and Atmospheres Share-a-Thon

**12:30** NESTA Space Science Share-a-Thon

**2:00** Don't miss the American Geophysical Union Lecture!

***Predicting Earthquakes and Volcanic Eruptions: What Can and Can Not Now Be Done?***

Dr. Stephen Malone

2010 IRIS/SSA Distinguished Lecturer, University of Washington

Location: Room 201C of the Philadelphia Convention Center

**6:30-8:00** NESTA Friends of Earth Science Reception

Location: Sheraton Horizons Rooftop Ballroom

### Saturday March 20

**NESTA Earth and Space Science Resource Day: Earth System Science and the Environment**

**7:00-8:30** NESTA Resource Day Breakfast

Location: Sheraton Logans I Room

(Advance purchase tickets required)

***Building meaningful Earth system science education partnerships  
across the K-20 community***

Professors Tanya Furman (The Pennsylvania State University)

and Laura Guertin (Pennsylvania State Brandywine)

**9:30** NESTA Earth System Science and the Environment Share-a-Thon

**11:00** ***Meteorology drives everything: the sensitivity of pollution episodes to atmospheric conditions in the mid-Atlantic region***

Professor Richard Clark, Millersville University of Pennsylvania

**12:30** ***Changing Seas, Changing Life: Paleontological Research with Student Participation***

Dr. Robert Ross, Paleontological Research Institution

**2:00** ***Environmental Earth System Science for Education in Urban Areas***

Professor Alexander Gates, Rutgers University

**3:30-5:00** NESTA Rock and Mineral Raffle

**5:00-6:30** NESTA Membership Meeting



These events are cosponsored by the American Geophysical Union,  
Carolina Biological Supply, UCAR, and Windows to the Universe.

<http://www.nestanet.org>



## Meetings and Social Functions

### Friday, March 19

A Broad Spectrum for Science Learning Breakfast (M-4)

(Tickets Required: \$15)

Grand Salon E/F, Marriott ..... 7:00–8:00 AM

Development Advisory Board Meeting

By Invitation Only

310, Marriott ..... 7:00–8:15 AM

NSTA Dorothy K. Culbert CAG Breakfast (M-3)

(Tickets Required: \$40)

Room 304, Marriott ..... 7:00–8:30 AM

High School Breakfast (M-5)

(Tickets Required: \$40)

Logans I, Sheraton ..... 7:00–8:30 AM

Society of Elementary Presidential Awardees (SEPA) Board Meeting

By Invitation Only

Conference Suite I, Marriott ..... 7:00–9:00 AM

AMSE Alice J. Moses Breakfast

By Invitation Only

Regency A, Loews ..... 7:00–9:00 AM

APAST Breakfast Meeting

By Invitation Only

Grand Salon I, Marriott ..... 7:00–9:00 AM

NMLSTA Board Meeting (Part 1)

NMLSTA Members Only

Roberts Board Room, Loews ..... 7:00–9:00 AM

ASMC Networking Forum Breakfast

By Invitation Only

Howe, Loews ..... 7:30–10:00 AM

PBS/WGBH/NOVA Science Matters Breakfast

By Invitation Only

Millennium Hall, Loews ..... 8:00–9:15 AM

Aerospace Programs Advisory Board Meeting

Conference Suite III, Marriott ..... 8:30–10:30 AM

NSTA International Lounge

Registration II, Marriott ..... 9:00 AM–5:00 PM

AMSE Annual Membership Meeting

Tubman, Loews ..... 10:00 AM–12 Noon

Association of Science Materials Centers (ASMC) Program Advisory Board Meeting

By Invitation Only

Jefferson, Loews ..... 10:00 AM–3:00 PM

Society of Elementary Presidential Awardees (SEPA) Luncheon

By Registration Through SEPA

Grand Salon I, Marriott ..... 12 Noon–2:00 PM

ASTE/NSELA Luncheon (M-6)

(Tickets Required: \$55)

Lescaze Room (33rd Floor), Loews ..... 12 Noon–2:00 PM

CESI/NSTA Elementary Science Luncheon (M-7)

(Tickets Required: \$55)

Regency A, Loews ..... 12 Noon–2:00 PM

NSTA/NMLSTA Middle Level Luncheon (M-8)

(Tickets Required: \$55)

Howe Room (33rd Floor), Loews ..... 12 Noon–2:00 PM

ATLSS Plenary Session

By Invitation Only

Liberty C, Sheraton ..... 1:00–3:00 PM

GEICO/NSTA New Member Orientation

By Invitation Only

*Sponsored by GEICO*

Grand Salon A/B, Marriott ..... 2:00–3:00 PM

NSTA District Meet and Greet in Honor of Wendell G. Mohling

Exhibit Hall, Conv. Center ..... 2:00–3:30 PM

SESD Business Meeting

Registration I, Marriott ..... 2:00–4:00 PM

NMLSTA Ice Cream Social

Howe, Loews ..... 3:00–4:30 PM

SCST Business Meeting

Commonwealth A, Loews ..... 3:00–5:00 PM

International Advisory Board Meeting

Conference Suite III, Marriott ..... 3:00–5:00 PM

ExploraVision Ice Cream Social and Information Session

Regency B, Loews ..... 3:30–4:30 PM

GEMS Network Reception

Liberty C, Sheraton ..... 3:30–5:00 PM

ACTS Teachers Meeting

Franklin 13, Marriott ..... 4:00–6:00 PM

## Meetings and Social Functions

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NMLSTA Board Meeting (Part 2)

NMLSTA Members Only

Roberts Board Room, Loews ..... 5:00–7:00 PM

PSTA Members Reception

By Invitation Only

JW's, Marriott ..... 5:00–7:00 PM

Student Chapter and Student Member Reception

For NSTA Student members

Grand Salon G, Marriott ..... 5:30–7:00 PM

NSTA Teacher Awards Gala (M-9)

(Tickets Required: \$55)

Millennium Hall, Loews ..... 6:00–8:30 PM

NESTA Friends of Earth Science Reception

Horizons Rooftop, Sheraton ..... 6:30–8:00 PM

SCST Social and Poster Session

Regency B, Loews ..... 7:00–9:30 PM

NSTA Competition Reception

By Invitation Only

Hosted by Walt Disney Company and the Conrad Foundation.

Howe/Lescaze, Loews ..... 8:30–10:00 PM

# Index of Exhibitor Workshops

## Academy of Model Aeronautics (Booth #646)

Friday, March 19 10:00–11:30 AM 110A/B, Conv. Center AeroLab (p. 54)

## ADAM Equipment (Booth #1452)

Friday, March 19 8:00–9:30 AM 203A, Conv. Center The Case of the Missing Joules (p. 34)

## Alliance for Climate Education (ACE) (Booth #2127)

Friday, March 19 4:00–5:30 PM 105A/B, Conv. Center Living Large (p. 118)

## Arbor Scientific (Booth #1705)

Friday, March 19 8:00–9:30 AM 105A/B, Conv. Center Wish You Could Do More Physics and Chemistry Labs—But Don't Have the Time and Equipment? (p. 32)

## Bio-Rad Laboratories (Booth #1619)

Friday, March 19 8:00–9:30 AM 103B, Conv. Center Bio-Rad Enzymes and Biofuels: Go from Grass to Gas! (AP Lab 2) (p. 31)

Friday, March 19 9:00–10:30 AM 103A, Conv. Center Bio-Rad—Is There Molecular Evidence for Evolution? Protein Profiler Kit (p. 39)

Friday, March 19 10:00–11:30 AM 103B, Conv. Center Bio-Rad—Got Protein in Your Milk? (p. 54)

Friday, March 19 1:00–2:00 PM 103B, Conv. Center Bio-Rad Genes in a Bottle™ Kit (p. 88)

Friday, March 19 1:00–3:30 PM 103A, Conv. Center Bio-Rad Forensic DNA Fingerprinting Kit (p. 88)

Friday, March 19 3:00–4:30 PM 103B, Conv. Center Bio-Rad—Finding Funds for Biotechnology Studies: Grant-writing Workshop (p. 107)

## BIOZONE International Ltd. (Booth #1234)

Friday, March 19 10:00–11:30 AM 105A/B, Conv. Center A Showcase of BIOZONE's Latest Workbooks and Presentation Media for Grades 9–12 (p. 54)

## Carolina Biological Supply Co. (Booth #1105)

Friday, March 19 8:00–9:30 AM 201B, Conv. Center Going the Distance in Math (p. 34)

Friday, March 19 8:00–9:30 AM 204A, Conv. Center Hands-On Science with Classroom Critters (p. 34)

Friday, March 19 8:00–9:30 AM 204B, Conv. Center Exploring Feline Anatomy with Carolina's Perfect Solution® Cats (p. 34)

Friday, March 19 10:00–11:30 AM 201B, Conv. Center Discover the Solar System and Beyond (p. 55)

Friday, March 19 10:00–11:30 AM 204A, Conv. Center Introduction to Protozoa (p. 56)

Friday, March 19 10:00–11:30 AM 204B, Conv. Center Carolina's Young Scientist's Dissection Series (p. 56)

Friday, March 19 12 Noon–1:30 PM 201B, Conv. Center Science Notebooking: Integrating Writing and Science (p. 72)

Friday, March 19 12 Noon–1:30 PM 204B, Conv. Center Amplify Your Genetics Teaching Skills with Carolina's New Inquiries in Science™ Biology Units (p. 73)

Friday, March 19 12 Noon–1:30 PM 204A, Conv. Center Introduction to Wisconsin Fast Plants® (p. 73)

Friday, March 19 2:00–3:30 PM 201B, Conv. Center Energy Works! (p. 104)

Friday, March 19 2:00–3:30 PM 204A, Conv. Center It's Alive! Carolina's Classroom Genetics (p. 105)

Friday, March 19 2:00–3:30 PM 204B, Conv. Center Take the Leap: Carolina's Perfect Solution® Frog Dissection (p. 105)

Friday, March 19 4:00–5:30 PM 201B, Conv. Center Creepy Crawlers in the Middle School Classroom (p. 119)

Friday, March 19 4:00–5:30 PM 204B, Conv. Center SQUID INK-UIRY: Inquiry-based Invertebrate Anatomy Through Squid Dissection (p. 120)

Friday, March 19 4:00–5:30 PM 204A, Conv. Center From Fast Gels to Fruit Flies (p. 120)

## Index of Exhibitor Workshops

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### Center for Health and the Global Environment, Harvard Medical School (Booth #1811)

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Friday, March 19 12 Noon–1:30 PM 203B, Conv. Center Human Health and Global Environmental Change for Educators (p. 73)

### CoasterDynamix, Inc. (Booth #1552)

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Friday, March 19 2:00–3:30 PM Hall D/4, Conv. Center Teaching Physics with Roller Coasters: A Hands-On Approach (p. 105)

### CPO Science, School Specialty Science (Booth #1341)

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Friday, March 19 8:00–9:30 AM 108A, Conv. Center Electric Circuits: Fun with Electricity and Circuits (p. 32)  
Friday, March 19 10:00–11:30 AM 108A, Conv. Center Electric Motor: Fun with Electromagnetism—Who Can Build the Fastest Motor? (p. 54)  
Friday, March 19 12 Noon–1:30 PM 108A, Conv. Center Optics with Light and Color: Bright Ideas—Our New Take on an Old Favorite (p. 72)  
Friday, March 19 2:00–3:30 PM 108A, Conv. Center Race into Physics with the CPO Science Energy Car (p. 103)  
Friday, March 19 4:00–5:30 PM 108A, Conv. Center Chemistry and the Atom: Fun with the Atom-building Game (p. 119)

### Delta Education, School Specialty Science (Booth #1440)

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Friday, March 19 8:00–9:15 AM 108B, Conv. Center Put Some Spark into Science Investigations (p. 30)  
Friday, March 19 10:00–11:15 AM 108B, Conv. Center Integrating Science and Literacy in Grades 1–6 (p. 53)  
Friday, March 19 1:00–2:15 PM 108B, Conv. Center Working as One with Hands and Minds (p. 88)  
Friday, March 19 3:00–4:30 PM 108B, Conv. Center FOSS and DSM Kit Refurbishment/Material Management (p. 107)

### Delta Education, School Specialty Science–FOSS (Booth #1440)

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Friday, March 19 8:30–11:30 AM 107A/B, Conv. Center Using Student Science Notebooks to Assess Student Learning (for Experienced Users Grades 5–8) (p. 39)  
Friday, March 19 12 Noon–2:00 PM 107A/B, Conv. Center Taking Science Outdoors with FOSS K–8 (p. 75)  
Friday, March 19 3:00–4:30 PM 107A/B, Conv. Center A Sneak Preview of the FOSS 2010 Planetary Science Middle School Course (p. 107)

### Educational Innovations, Inc. (Booth #1033)

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Friday, March 19 8:00–9:30 AM 113C, Conv. Center The Private Eye: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 34)  
Friday, March 19 10:00–11:30 AM 113C, Conv. Center If You Can't Stand the Pressure, Get Out of the Classroom (p. 55)  
Friday, March 19 12 Noon–1:30 PM 113C, Conv. Center Get Charged Up with Educational Innovations! (p. 72)  
Friday, March 19 2:00–3:30 PM 113C, Conv. Center If You Can't Stand the Pressure, Get Out of the Classroom (p. 104)  
Friday, March 19 4:00–5:30 PM 113C, Conv. Center The Private Eye: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 119)

### EDVOTEK (Booth #816)

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Friday, March 19 8:00–9:30 AM 110A/B, Conv. Center EDVOTEK Biotechnology—New! Achieve Successful PCR in One Lab Session (p. 32)

### ESRI (Booth #1431)

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Friday, March 19 12 Noon–1:30 PM 105A/B, Conv. Center GIS for Earth Science Inquiry (p. 71)  
Friday, March 19 2:00–3:30 PM 105A/B, Conv. Center GIS for Environmental Science Inquiry (p. 103)

# Index of Exhibitor Workshops

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## Fisher Science Education (Booth #2033)

Friday, March 19	8:00–9:30 AM	303A/B, Conv. Center	Introducing a New Data Logging System for Your Science Lab! (p. 35)
Friday, March 19	10:00–11:30 AM	303A/B, Conv. Center	Advanced Data Logging for Your High School Science Lab! (p. 56)
Friday, March 19	1:30–3:00 PM	303A/B, Conv. Center	Improving Test Scores with Curriculum Games for High School Science (p. 90)
Friday, March 19	3:30–5:00 PM	303A/B, Conv. Center	Innovating Science: Chemistry Demonstrations That Really Get a Reaction! (p. 118)

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## Flinn Scientific, Inc. (Booth #1605)

Friday, March 19	8:00–9:30 AM	103C, Conv. Center	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 19)
Friday, March 19	10:00–11:30 AM	Room 114, Conv. Center	Flinn Scientific's Morning of Chemistry: A Chemistry Demonstration Carnival! (p. 56)
Friday, March 19	10:00–11:30 AM	103C, Conv. Center	Flinn Favorite Biology Lab Activities and Games (p. 54)
Friday, March 19	12 Noon–1:30 PM	103C, Conv. Center	How to Design a Safe and Efficient Science Laboratory (p. 71)
Friday, March 19	2:00–3:30 PM	103C, Conv. Center	Teaching Advanced Placement Chemistry: Optimize Your Students' Laboratory Experiences (p. 103)

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## Frey Scientific, School Specialty Science (Booth #1441)

Friday, March 19	8:00–9:15 AM	109A/B, Conv. Center	A Closer Look at Biology, Chemistry, and Earth Science Virtual Labs (p. 30)
Friday, March 19	10:00–11:15 AM	109A/B, Conv. Center	Inquiry Investigations™ Forensics Science Curriculum Module and Kits (p. 53)
Friday, March 19	12 Noon–1:15 PM	109A/B, Conv. Center	Educational Science Lab Design and Implementation for the 21st Century Made Easy (p. 71)
Friday, March 19	2:00–3:15 PM	109A/B, Conv. Center	Introducing Inquiry Investigations™: Hands-On Inquiry Activities Focusing On Technology (p. 102)
Friday, March 19	4:00–5:15 PM	109A/B, Conv. Center	Inquiry Investigations™ Biotechnology Curriculum Modules and Kits (p. 118)

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## General Motors (Booth #2155)

Friday, March 19	4:00–5:30 PM	304, Conv. Center	Charge the Battery...Change the World! (p. 120)
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## GET BioTECH SMART (Booth #1753)

Friday, March 19	4:00–5:30 PM	Hall D/4, Conv. Center	Get Smart About Biotechnology (p. 120)
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## Hands and Minds/Anatomy in Clay (Booth #618)

Friday, March 19	10:00–11:30 AM	203B, Conv. Center	Hands-On Teaching with the Anatomy in Clay® Learning System (p. 55)
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## Houghton Mifflin Harcourt (Booth #940)

Friday, March 19	8:00–9:30 AM	304, Conv. Center	Reading in the 21st Century (p. 35)
Friday, March 19	10:00–11:30 AM	304, Conv. Center	Capturing Attention in the Chemistry Classroom (p. 56)

# Index of Exhibitor Workshops

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## Howard Hughes Medical Institute (Booth #1344)

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Friday, March 19	8:00–9:30 AM	106A/B, Conv. Center	Free Teaching Resources from HHMI: Exploring Biodiversity: The Search for New Medicines (p. 32)
Friday, March 19	10:00–11:30 AM	106A/B, Conv. Center	Enhance Your AP Biology Presentations Using Teacher-generated and FREE Resources from Howard Hughes Medical Institute (p. 54)
Friday, March 19	12 Noon–1:30 PM	106A/B, Conv. Center	Teaching Cells, Viruses, Disease, and Immunology with Free Resources from HHMI (p. 71)
Friday, March 19	2:00–3:30 PM	106A/B, Conv. Center	The Science of Stem Cells: Introductory Activities (p. 103)
Friday, March 19	4:00–5:30 PM	106A/B, Conv. Center	Learning from Patients: Developing Models and Searching for Answers (p. 118)

## It's About Time (Booth #1229)

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Friday, March 19	8:00–9:00 AM	201A, Conv. Center	There Is More to Project Based Science Than Just a Project: (PBIS) (p. 30)
Friday, March 19	9:30–10:30 AM	201A, Conv. Center	InterActions in Physical Science—Newly Revised (p. 51)
Friday, March 19	11:00 AM–12 Noon	201A, Conv. Center	Teenagers, Cars, and Driving...How to Get High School Students Actively Involved in Physical Science (p. 70)
Friday, March 19	12:30–1:30 PM	201A, Conv. Center	Teaching in the 21st Century: Integrating Project-based Curricula and Probeware (p. 86)
Friday, March 19	2:00–3:00 PM	201A, Conv. Center	El Niño and Its Effects on Weather, Climate, and the Food Chain (p. 102)
Friday, March 19	3:30–4:30 PM	201A, Conv. Center	Investigating in Environmental Science: A Case-based Approach (p. 117)

## Kendall Hunt Publishing Co. (Booth #1928)

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Friday, March 19	12 Noon–1:30 PM	304, Conv. Center	Building Inquiry with <i>BSCS Science: An Inquiry Approach</i> (p. 73)
Friday, March 19	2:00–3:30 PM	304, Conv. Center	Building Inquiry with <i>BSCS Biology: A Human Approach</i> (p. 105)

## Key Curriculum Press (Booth #735)

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Friday, March 19	12 Noon–1:30 PM	110A/B, Conv. Center	Living by Chemistry: What Shape Is That Smell? (p. 72)
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## Kinetic Books (Booth #2106)

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Friday, March 19	4:00–5:30 PM	110A/B, Conv. Center	Experience a Digital Physics Curriculum (p. 119)
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## LAB-AIDS, Inc. (Booth #1529)

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Friday, March 19	8:00–9:30 AM	Hall D/2, Conv. Center	Inquiry Teaching and Learning: Chemical Batteries (p. 36)
Friday, March 19	10:00–11:30 AM	Hall D/2, Conv. Center	<i>A Natural Approach to Chemistry: Teaching About Spectrophotometry</i> (p. 56)
Friday, March 19	12 Noon–1:30 PM	Hall D/2, Conv. Center	<i>A Natural Approach to Chemistry: Teaching About Spectrophotometry</i> (p. 73)
Friday, March 19	2:00–3:30 PM	Hall D/2, Conv. Center	Inquiry Teaching and Learning: The Periodic Table (p. 105)
Friday, March 19	4:00–5:30 PM	Hall D/2, Conv. Center	Inquiry Teaching and Learning: Classifying Space Objects (p. 120)

## LaMotte Co. (Booth #923)

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Friday, March 19	4:00–5:30 PM	203B, Conv. Center	The Watershed Tour (p. 120)
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## Lumens Integration, Inc. (Booth #2061)

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Friday, March 19	10:00–11:30 AM	Hall D/4, Conv. Center	Camera Magic: Strategies to Incorporate Visual Presenters into Your Lessons (p. 56)
Friday, March 19	12 Noon–1:30 PM	Hall D/4, Conv. Center	Camera Magic: Strategies to Incorporate Visual Presenters into Your Lessons (p. 73)

# Index of Exhibitor Workshops

## Marshall Cavendish International (Booth #1807)

Friday, March 19	8:00–9:30 AM	Hall D/4, Conv. Center	Sciencing the Nation and Making It Count: How Does It Add Up for Singapore? (p. 36)
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## McGraw-Hill School Education Group (Booth #531)

Friday, March 19	8:00–9:30 AM	111A/B, Conv. Center	A to Z Science Activities for the Primary Classroom (p. 32)
Friday, March 19	10:00–11:30 AM	111A/B, Conv. Center	Teaching Inquiry Science with Toys and Treats (p. 55)
Friday, March 19	12 Noon–1:30 PM	111A/B, Conv. Center	Teaching Inquiry Science with Toys and Treats (p. 72)
Friday, March 19	2:00–3:30 PM	111A/B, Conv. Center	Teaching Science with Foldables (p. 104)
Friday, March 19	4:00–5:30 PM	111A/B, Conv. Center	Teaching Science with Foldables (p. 119)

## Mississippi State University (Booth #1717)

Friday, March 19	12 Noon–1:30 PM	203A, Conv. Center	MS Degree in Geosciences via Distance Learning from Mississippi State University (p. 73)
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## National Geographic–The JASON Project (Booth #1641)

Friday, March 19	2:00–3:30 PM	203A, Conv. Center	The JASON Project (p. 104)
Friday, March 19	4:00–5:30 PM	203A, Conv. Center	Incorporating Social Networking and Gaming in the Classroom (p. 119)

## National Geographic School Publishing (Booth #1641)

Friday, March 19	8:00–9:30 AM	203B, Conv. Center	Science and Literacy: Reading and Writing Informational Text (p. 34)
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## PASCO (Booths #805 and #914)

Friday, March 19	8:00–9:00 AM	112A/B, Conv. Center	Tough Topics in Chemistry and Physical Science: Gas Laws (p. 30)
Friday, March 19	8:00–9:00 AM	113A, Conv. Center	Sally Ride Science™ and PASCO: Our Changing Climate (p. 30)
Friday, March 19	9:30–10:30 AM	112A/B, Conv. Center	Carolina™ Biology Investigations for SPARKscience™: A Novel Approach to the “Ruler Drop” Lab (p. 51)
Friday, March 19	9:30–10:30 AM	113A, Conv. Center	Tough Topics in Physics and Physical Science: Motion (p. 51)
Friday, March 19	11:00 AM–12 Noon	113A, Conv. Center	Tough Topics in Life Science: Modeling Pressure Changes in the Lungs (p. 69)
Friday, March 19	11:00 AM–12 Noon	112A/B, Conv. Center	Tough Topics in Chemistry and Physical Science: Chemical Reactions (p. 69)
Friday, March 19	12:30–1:30 PM	112A/B, Conv. Center	Tough Topics in Biology: Circulatory Physiology (p. 86)
Friday, March 19	12:30–1:30 PM	113A, Conv. Center	Tough Topics in Physics and Physical Science: Circuits (p. 86)
Friday, March 19	2:00–3:00 PM	112A/B, Conv. Center	Advanced Placement® Chemistry: Determining the Rate Constant of a Chemical Reaction (p. 102)
Friday, March 19	2:00–3:00 PM	113A, Conv. Center	Renewable Energy Exploration: Solar Energy and Photovoltaic Cells (p. 102)
Friday, March 19	3:30–4:30 PM	113A, Conv. Center	Tough Topics in Elementary School Science: What Is a Circuit? (p. 117)
Friday, March 19	3:30–4:30 PM	112A/B, Conv. Center	Advanced Placement® Environmental Science: Modeling an Ecosystem (p. 117)
Friday, March 19	5:00–6:30 PM	Room 114, Conv. Center	PASCO Presents the Eighth-Annual Just Physics Evening (p. 129)

# Index of Exhibitor Workshops

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## Pearson (Booth #1405)

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Friday, March 19	8:00–9:30 AM	113B, Conv. Center	Save the World! Earth Science for Today's Classroom (p. 32)
Friday, March 19	10:00–11:30 AM	113B, Conv. Center	New Tools, New Insights, and New Ways of Understanding Science with Miller & Levine <i>Biology</i> (p. 55)
Friday, March 19	12 Noon–1:30 PM	113B, Conv. Center	Increasing Physics Enrollments (p. 72)
Friday, March 19	2:00–3:30 PM	113B, Conv. Center	The Big Questions of Science! Starting with the End in Mind Using Understanding by Design (p. 104)
Friday, March 19	4:00–5:30 PM	113B, Conv. Center	Real Issues, Real Data, Real Choices: Teaching Environmental Science in Today's High School (p. 119)

## SAE International (Booth #617)

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Friday, March 19	4:00–5:30 PM	103C, Conv. Center	A World In Motion: The Elementary Design Experience (p. 118)
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## Sargent-Welch (Booth #1629)

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Friday, March 19	12 Noon–1:30 PM	104A/B, Conv. Center	ScholAR's Got a Brand-new Bag (p. 71)
Friday, March 19	2:00–3:30 PM	104A/B, Conv. Center	There's Nothing Cheesy About the Scientific Method (p. 103)

## Science Kit & Boreal Laboratories (Booth #1727)

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Friday, March 19	4:00–5:30 PM	104A/B, Conv. Center	Getting' Funky with the Fundamentals of Physics (p. 118)
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## Simulation Curriculum Corp. (Booth #741)

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Friday, March 19	2:00–3:30 PM	110A/B, Conv. Center	The Sky Through the Ages! (p. 103)
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## Spitz, Inc. (Booth #641)

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Friday, March 19	11:00 AM–12 Noon	Booth #641, Exhibit Hall	Moon Phases: Teaching in an Immersive Environment (p. 70)
Friday, March 19	3:00–4:00 PM	Booth #641, Exhibit Hall	Moon Phases: Teaching in an Immersive Environment (p. 106)

## Swift Optical Instruments, Inc. (Booth #823)

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Friday, March 19	2:00–3:30 PM	203B, Conv. Center	It's Easy to Go Digital! (p. 105)
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## Vernier Software & Technology (Booth #1417)

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Friday, March 19	8:00–9:30 AM	202A, Conv. Center	<i>Physics with Vernier</i> (p. 34)
Friday, March 19	8:00–9:30 AM	202B, Conv. Center	Advanced Biology and Biotechnology with Vernier (p. 34)
Friday, March 19	10:00–11:30 AM	202B, Conv. Center	Engineering with Vernier (p. 55)
Friday, March 19	10:00–11:30 AM	202A, Conv. Center	Chemistry with Vernier (p. 55)
Friday, March 19	12 Noon–1:30 PM	202A, Conv. Center	Water Quality and Environmental Science with Vernier (p. 72)
Friday, March 19	12 Noon–1:30 PM	202B, Conv. Center	Video Analysis with Vernier (p. 72)
Friday, March 19	2:00–3:30 PM	202B, Conv. Center	AP and IB Science with Vernier (p. 104)
Friday, March 19	2:00–3:30 PM	202A, Conv. Center	Earth Science with Vernier (p. 104)

## WARD's Natural Science (Booth #1826)

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Friday, March 19	8:00–9:30 AM	104A/B, Conv. Center	A Watershed Performance: Modeling Wetlands (p. 32)
Friday, March 19	10:00–11:30 AM	104A/B, Conv. Center	Blood Spatter Symphony (p. 54)
Friday, March 19	7:00–9:30 PM	Grand Salon H, Marriott	A Night of Forensics: The Red Carpet Mystery (p. 130)

## Wavefunction, Inc. (Booth #815)

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Friday, March 19	10:00–11:30 AM	203A, Conv. Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 55)
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## Schedule at a Glance

G = General	M = Middle School	S = Supervision/Administration	T = Teacher Preparation
P = Preschool	H = High School	I = Informal Education	E = Elementary
C = College	R = Research		

### Biology/Life Science

8:20–8:40 AM	H–C	Commonwealth A, Loews	SCST Session: Analyzing Political Cartoons to Stimulate Higher-Order Thinking in Science Courses (p. 18)
8:40–9:00 AM	C	Commonwealth A, Loews	SCST Session: Science Education and Creation Museums (p. 18)
8:00–9:00 AM	M–H/I	Franklin 11, Marriott	NOAA Climate Symposium Session: Corals and Climate Change (p. 23)
8:00–9:00 AM	H	Franklin 1, Marriott	Teaching AP Biology Using Games and Models (p. 28)
8:00–9:00 AM	H–C	Hall D/6, Conv. Center	Teaching Science and History Through Evolution Court Cases (p. 16)
8:00–9:00 AM	M	Hall D/18, Conv. Center	How Might Life Evolve on Other Worlds and Life: Here? There? Elsewhere? (p. 26)
8:00–9:00 AM	M–C	Franklin 4, Marriott	Tree Thinking and Genetic Barcodes (DNA): Solving Real-World Questions in the Classroom (p. 28)
8:00–9:00 AM	M–H	Franklin 3, Marriott	Powerful, Free Molecular Simulations for Teaching Biology (p. 22)
8:00–9:00 AM	H–C	Commonwealth C, Loews	A Medical Mystery of Epidemic Proportions (p. 26)
8:00–9:00 AM	E–M/S	Franklin 2, Marriott	MOSART Life Science: Assessing Student Understanding of the K–4 Life Science Standards (p. 22)
8:00–9:30 AM	9–C	110A/B, Conv. Center	EDVOTEK Biotechnology—New! Achieve Successful PCR in One Lab Session (p. 32)
8:00–9:30 AM	9–C	106A/B, Conv. Center	Free Teaching Resources from HHMI: Exploring Biodiversity: The Search for New Medicines (p. 32)
8:00–9:30 AM	K–12	204A, Conv. Center	Hands-On Science with Classroom Critters (p. 34)
8:00–9:30 AM	9–C	204B, Conv. Center	Exploring Feline Anatomy with Carolina’s Perfect Solution® Cats (p. 34)
8:00–9:30 AM	9–C	202B, Conv. Center	Advanced Biology and Biotechnology with Vernier (p. 34)
8:00–9:30 AM	7–C	103B, Conv. Center	Bio-Rad Enzymes and Biofuels: Go from Grass to Gas! (AP Lab 2) (p. 31)
8:30–9:00 AM	G	Franklin 9, Marriott	ARMADA Experience in Australia (p. 38)
9:00–10:30 AM	7–C	103A, Conv. Center	Bio-Rad—Is There Molecular Evidence for Evolution? Protein Profiler Kit (p. 39)
9:30–10:30 AM	9	112A/B, Conv. Center	Carolina™ Biology Investigations for SPARKscience™: A Novel Approach to the “Ruler Drop” Lab (p. 51)
9:30–10:30 AM	H	Independence A, Sheraton	NSTA High School Biology Share Session (p. 46)
9:30–10:30 AM	I/G	Salon E/F, Marriott	Informal Science Day Session: Learning Inquiry Science Beyond the Classroom Through the Study of Animals (p. 45)
9:30–10:30 AM	M–H	Franklin 1, Marriott	Dealing with Murder: An Inquiry-based Approach to Science and Literacy (p. 49)
9:30–10:30 AM	M–C	Franklin 4, Marriott	Stem Cells: Science and Ethics (p. 49)
9:30–10:30 AM	E–M	Hall D/18, C. Center	Keeping Our Body Systems Healthy (p. 48)
9:30–10:30 AM	H–C	Commonwealth C, Loews	Stem Cell Biology (p. 49)
9:30–10:30 AM	H	Franklin 9, Marriott	Women Exemplars: Using Personal Science Stories to Promote Science Interest and Literacy in the High School Classroom (p. 44)
9:30–10:30 AM	H	Franklin 3, Marriott	Now That I’ve Got This Cat, What Do I Do with It? (p. 44)
9:30–10:30 AM	G	Commonwealth D, Loews	AMSE Session: Integrating Multicultural Education into Science Through Folklore and Herbal Medicine (p. 42)
10:00–10:30 AM	H–C/S	Franklin 2, Marriott	Evolution Instruction: What Biology Teachers Have to Say About Teaching Evolution (p. 52)
10:00–11:30 AM	6–12	104A/B, Conv. Center	Blood Spatter Symphony (p. 54)
10:00–11:30 AM	9–C	106A/B, Conv. Center	Enhance Your AP Biology Presentations Using Teacher-generated and FREE Resources from Howard Hughes Medical Institute (p. 54)
10:00–11:30 AM	5–C	203B, Conv. Center	Hands-On Teaching with the Anatomy in Clay® Learning System (p. 55)
10:00–11:30 AM	9–12	113B, Conv. Center	New Tools, New Insights, and New Ways of Understanding Science with Miller & Levine Biology (p. 55)
10:00–11:30 AM	5–8	204B, Conv. Center	Carolina’s Young Scientist’s Dissection Series (p. 56)
10:00–11:30 AM	9–12	204A, Conv. Center	Introduction to Protozoa (p. 56)

## Schedule at a Glance Biology/Life Science

10:00–11:30 AM	9–C	105A/B, Conv. Center	A Showcase of BIOZONE's Latest Workbooks and Presentation Media for Grades 9–12 (p. 54)
10:00–11:30 AM	9–12	103C, Conv. Center	Flinn Favorite Biology Lab Activities and Games (p. 54)
11:00 AM–12 Noon	6–12	113A, Conv. Center	Tough Topics in Life Science: Modeling Pressure Changes in the Lungs (p. 69)
11:00 AM–12 Noon	M–H	307, Marriott	The Science of Food Safety (p. 66)
11:00–11:30 AM	H–C/S	Franklin 8, Marriott	Re-igniting the Passion: A Public-Private Partnership Model for Teacher Professional Development (p. 62)
11:00 AM–12 Noon	M–H	Franklin 9, Marriott	Teaching Evolution: Meeting the Challenge of So-called Intelligent Design (p. 62)
11:00 AM–12 Noon	G	Congress C, Loews	NSELA Session: Using Formative Assessments to Bridge the Modification Gaps for Special Education Students (p. 60)
11:00 AM–12 Noon	E–H	Franklin 4, Marriott	Oh Me! Oh My! Mitosis and Meiosis! (p. 66)
11:00 AM–12 Noon	E	Hall D/5, Conv. Center	The “Don’t Bug Me” Integrated Pest Management Challenge: Learning Science Through Agriculturally Based Problem Solving (p. 64)
11:00–11:30 AM	P–E	Hall D/8, Conv. Center	Co-teaching in Kindergarten Science (p. 58)
11:30 AM–12 Noon	C/S	Franklin 8, Marriott	Best Practices: Models for Online Teacher Professional Development (p. 62)
11:00 AM–12 Noon	H–C/I	Commonwealth C, Loews	Teaching Insulin: The Gene, the Protein, and Glucose Homeostasis (p. 65)
11:00 AM–12 Noon	M–C	Franklin 2, Marriott	Teaching Biology with Models and Modeling (p. 61)
11:00 AM–12 Noon	M	Hall D/18, Conv. Center	Accessing Science Ideas (p. 65)
11:30 AM–12 Noon	E	Hall D/8, Conv. Center	Here’s Looking at You! (p. 58)
11:00 AM–12 Noon	M–H	Franklin 1, Marriott	Amazing Things Cells Can Do (p. 66)
11:00 AM–12:30 PM	M–H	404, Marriott	LHS Pathway Session: Differentiating Instruction Related to Science and Societal Issues (p. 70)
12 Noon–1:30 PM	9–C	106A/B, Conv. Center	Teaching Cells, Viruses, Disease, and Immunology with Free Resources from HHMI (p. 71)
12 Noon–1:30 PM	9–12	204B, Conv. Center	Amplify Your Genetics Teaching Skills with Carolina’s New Inquiries in Science™ Biology Units (p. 73)
12 Noon–1:30 PM	K–12	204A, Conv. Center	Introduction to Wisconsin Fast Plants® (p. 73)
12:30–1:00 PM	M–H	Franklin 8, Marriott	Vocabulary Success: Teaching Scientific Vocabulary to English Language Learners (p. 76)
12:30–1:30 PM	6–12	112A/B, Conv. Center	Tough Topics in Biology: Circulatory Physiology (p. 86)
12:30–1:30 PM	M–C	Hall D/25, Conv. Center	Built STEM by Stem: Using Planaria to Rethink and Revitalize Science Education (p. 78)
12:30–1:30 PM	G	Franklin 2, Marriott	Kids Judge! Science Education Partnerships in Urban Environments (p. 80)
12:30–1:30 PM	H–C	Commonwealth C, Loews	Aipotu: An Interactive Simulation Linking Genetics, Biochemistry, Molecular Biology, and Evolution (p. 83)
12:30–1:30 PM	M–H	Franklin 1, Marriott	A Hands-On/Minds-On Activity for Teaching Molecular Biology (p. 84)
12:30–1:30 PM	H	Franklin 3, Marriott	AP Biology Teachers’ Open Forum (p. 81)
12:30–1:30 PM	E–H	Franklin 4, Marriott	Inquiring Minds: Using Science to Teach Thinking (p. 84)
12:30–1:30 PM	M–H	Franklin 9, Marriott	Buy ‘em with One Notebook and Biotech! (p. 81)
12:30–1:30 PM	P–E	Hall D/8, Conv. Center	Nurturing Wonder in Young Children by Bringing the Outdoors Inside (p. 82)
12:30–1:30 PM	E–M/I	Hall D/18, Conv. Center	Do Birds Have Belly Buttons? Kids Answer the Funniest Questions! (p. 78)
12:30–2:30 PM	H	Commonwealth D, Loews	AMSE Session: Multicultural Biology Activities: Is This Just About Good Science Teaching? (p. 88)
1:00–2:00 PM	7–C	103B, Conv. Center	Bio-Rad Genes in a Bottle™ Kit (p. 88)
1:00–3:30 PM	7–C	103A, Conv. Center	Bio-Rad Forensic DNA Fingerprinting Kit (p. 88)
2:00–2:30 PM	H	Franklin 8, Marriott	Toward Success in Advanced Placement Biology in an Urban High School: Bringing Students Up to Par (p. 95)
2:00–2:30 PM	C	Commonwealth A, Loews	SCST Session: Teaching with Technology: Encouraging Students to Engage in Study Outside the Classroom (p. 93)
2:30–3:00 PM	C	Commonwealth A, Loews	SCST Session: Stop Lecturing in Anatomy and Physiology and Allow Students to Truly Learn (p. 93)
2:00–3:00 PM	H–C	414/415, Marriott	BSCS Pathway Session: Common Resources, Shared Consequences—Helping Students Understand (p. 95)
2:00–3:00 PM	M–C	Franklin 4, Marriott	Linking Biology and Algebra with Population (p. 100)
2:00–3:00 PM	H–C	Commonwealth C, Loews	Teaching Science to Diverse Learners (p. 99)

## Schedule at a Glance Biology/Life Science, cont.

2:00–3:00 PM	H	Franklin 1, Marriott	Using the Hardy-Weinberg Equilibrium to Illustrate Evolutionary Change (p. 100)
2:00–3:00 PM	G	Franklin 2, Marriott	Developing Science Media Producers: Urban Students Build Identities as Creators of Media Instead of Consumers (p. 95)
2:00–3:00 PM	M–H	Franklin 9, Marriott	Starting a Biotechnology Loaner Program (p. 96)
2:00–3:00 PM	M–H	Franklin 3, Marriott	Introduction to Heredity: What Traits Do I Have and Where Do They Come From? (p. 100)
2:30–3:00 PM	H	Franklin 8, Marriott	Misconceptions in Biology: Results of the 2009 AP Biology Free Response Questions (p. 95)
2:00–3:00 PM	P	Hall D/8, Conv. Center	A Head Start on Science (p. 92)
2:00–3:30 PM	8–C	204A, Conv. Center	It's Alive! Carolina's Classroom Genetics (p. 105)
2:00–3:30 PM	6–12	204B, Conv. Center	Take the Leap: Carolina's Perfect Solution® Frog Dissection (p. 105)
2:00–3:30 PM	9–C	106A/B, Conv. Center	The Science of Stem Cells: Introductory Activities (p. 103)
2:00–3:30 PM	6–C	203B, Conv. Center	It's Easy to Go Digital! (p. 105)
2:00–3:30 PM	9–12	304, Conv. Center	Building Inquiry with BSCS Biology: A Human Approach (p. 105)
2:00–3:30 PM	8–12	104A/B, Conv. Center	There's Nothing Cheesy About the Scientific Method (p. 103)
3:00–4:30 PM	7–C	103B, Conv. Center	Bio-Rad—Finding Funds for Biotechnology Studies: Grant-writing Workshop (p. 107)
3:30–4:30 PM	E/I	Hall D/8, Conv. Center	The Science of Readers Theater (p. 109)
3:30–4:30 PM	M–H	Franklin 3, Marriott	Beyond the Text: Using Trade Books, Picture Books, Magazine Articles, and Current Events in the Science Classroom (p. 112)
3:30–4:30 PM	E–M	Hall D/18, Conv. Center	The Cell and Ancient Egypt (p. 110)
3:30–4:30 PM	M–H	Franklin 9, Marriott	What Works for Inclusion Works for All Biology Students (p. 113)
4:00–4:30 PM	G	Franklin 8, Marriott	Medical Mysteries: A Web Adventure for Teaching Science Through Inquiry (p. 113)
3:30–4:30 PM	M–H	Franklin 1, Marriott	Screen Your Genes! (p. 116)
3:30–4:30 PM	M–C	Franklin 4, Marriott	Using Socratic Seminars in Science (p. 116)
3:30–4:30 PM	G	Franklin 2, Marriott	Mapping Migration Routes Using Ancient DNA (p. 112)
3:30–4:30 PM	H–C	Congress B, Loews	Genes, Health, and Society: A Web-based Course in Genetics and Genomics (p. 111)
3:30–4:00 PM	G	Franklin 8, Marriott	Free Online Teaching Resources from the National Institutes of Health (p. 113)
4:00–5:30 PM	9–C	204A, Conv. Center	From Fast Gels to Fruit Flies (p. 120)
4:00–5:30 PM	9–12	204B, Conv. Center	SQUID INK-UIRY: Inquiry-based Invertebrate Anatomy Through Squid Dissection (p. 120)
4:00–5:30 PM	6–8	201B, Conv. Center	Creepy Crawlers in the Middle School Classroom (p. 119)
4:00–5:30 PM	9–C	106A/B, Conv. Center	Learning from Patients: Developing Models and Searching for Answers (p. 118)
5:00–5:30 PM	M–H	Franklin 3, Marriott	Partnering Research Scientists and Secondary Science Teachers (p. 125)
5:00–6:00 PM	E–M	Hall D/18, Conv. Center	Addressing Climate Change and the Impact It Has on Wildlife (p. 122)
5:00–6:00 PM	G	Franklin 2, Marriott	Integrating Biology and Mathematics through NIMBioS and Biology in a Box (p. 124)
5:30–6:00 PM	M–H	Franklin 3, Marriott	Optimizing Scientific Lab Placements for High School Students (p. 125)
5:00–6:00 PM	M–H	Franklin 1, Marriott	Limits on Cell Size: Tweaking Labs to Teach About Nature of Science and Scientific Inquiry (p. 128)
5:00–6:00 PM	G	Franklin 4, Marriott	Nature in the City: Processes and Curricula That Inspire Early Childhood Learners (p. 128)
5:00–6:00 PM	E–H	Franklin 8, Marriott	Plants Can Do That? Addressing Student Misconceptions About Photosynthesis (p. 125)
5:00–6:00 PM	M–H	Franklin 9, Marriott	Using Superheroes to Connect Animal Structure and Function (p. 125)
7:00–9:30 PM	6–12	Grand Salon H, Marriott	A Night of Forensics: The Red Carpet Mystery (p. 130)

## Chemistry/Physical Science

8:00–9:00 AM	6–12	112A/B, Conv. Center	Tough Topics in Chemistry and Physical Science: Gas Laws (p. 30)
8:00–9:00 AM	E–M	Hall D/19, Conv. Center	Using Computer Visualizations to Teach About Small, Unseen Particles (p. 17)
8:00–9:00 AM	H	Franklin 10, Marriott	Basic Polymer Chemistry for the High School Classroom (p. 23)
8:00–9:00 AM	H	Grand Salon L, Marriott	PolyWhat? Understanding What a Polymer Is: Polymer 101 (p. 24)
8:00–9:00 AM	G	Grand Salon C, Marriott	Chemistry Inquiry for Kids (p. 28)
8:00–9:00 AM	M–H	Grand Salon K, Marriott	Miniaturized Assays: Paper Diagnostics for Grades 7–12 (p. 28)

## Schedule at a Glance Chemistry/Physical Science, cont.

8:00–9:00 AM	H–C/I	Regency B, Loews	Polymers 1B: Squeeze Them into General Chemistry (p. 28)
8:00–9:30 AM	7–12	105A/B, Conv. Center	Wish You Could Do More Physics and Chemistry Labs—But Don't Have the Time and Equipment? (p. 32)
8:00–9:30 AM	8–12	203A, Conv. Center	The Case of the Missing Joules (p. 34)
8:00–9:30 AM	8–10	Hall D/2, Conv. Center	Inquiry Teaching and Learning: Chemical Batteries (p. 36)
8:00–9:30 AM	7–12	103C, Conv. Center	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 31)
9:30–10:30 AM	P–M	Grand Salon D, Marriott	NSTA Press Session: Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It (p. 49)
9:30–10:30 AM	H	Grand Salon L, Marriott	Making Chemical Demonstrations a Learning Experience for All Students (p. 46)
9:30–10:30 AM	H	Franklin 10, Marriott	Demos for the Holidays! Excite Students with Chemical Demonstrations (p. 44)
9:30–10:30 AM	M–H	Grand Salon K, Marriott	Slope: It's Not Just for Math Anymore! (p. 50)
9:30–10:30 AM	E–H	Grand Salon C, Marriott	Sock It to Me! Hydrophilic vs. Hydrophobic (p. 49)
9:30–10:30 AM	E–M/I	Hall D/19, Conv. Center	Multisensory Science: A Polymers Workshop for the Visually Impaired (p. 48)
10:00–11:30 AM	7–12	114/Aud., Conv. Center	Flinn Scientific's Morning of Chemistry: A Chemistry Demonstration Carnival! (p. 56)
10:00–11:30 AM	9–C	202A, Conv. Center	Chemistry with Vernier (p. 55)
10:00–11:30 AM	10–12	Hall D/2, Conv. Center	<i>A Natural Approach to Chemistry</i> : Teaching About Spectrophotometry (p. 56)
10:00–11:30 AM	9–12	304, Conv. Center	Capturing Attention in the Chemistry Classroom (p. 56)
10:00–11:30 AM	9–C	203A, Conv. Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 55)
11:00 AM–12 Noon	6–12	112A/B, Conv. Center	Tough Topics in Chemistry and Physical Science: Chemical Reactions (p. 69)
11:00 AM–12 Noon	H	405, Marriott	Skills Pathway Session: Copper Extraction and the Power of Story (p. 61)
11:00 AM–12 Noon	H–C	Regency B, Loews	Modeling Isn't Just for the Runway (p. 65)
11:00 AM–12 Noon	H	Grand Salon K, Marriott	Conceptual Continuity In Chemistry: Connecting Multiple Topics (p. 68)
11:00 AM–12 Noon	M–C	Grand Salon C, Marriott	Use Polymer Science to Create 3-D Objects in Your Classroom (p. 66)
11:00 AM–12 Noon	P–E	Hall D/9, Conv. Center	Ramps and Pathways: An Inquiry-based Approach to Physical Science in Early Childhood (p. 64)
11:00 AM–12 Noon	H	Franklin 10, Marriott	Lotions, Potions, and Scrubs: Polymer Science in Cosmetics (p. 62)
11:00 AM–12 Noon	I	Grand Salon L, Marriott	Polymers 1A: They're Everywhere! Kitchen, Classroom, Cars, and Clothing (p. 63)
12 Noon–1:30 PM	9–12	110A/B, Conv. Center	Living by Chemistry: What Shape Is That Smell? (p. 72)
12 Noon–1:30 PM	10–12	Hall D/2, Conv. Center	<i>A Natural Approach to Chemistry</i> : Teaching About Spectrophotometry (p. 73)
12 Noon–1:30 PM	6–12	104A/B, Conv. Center	ScholAR's Got a Brand-New Bag (p. 71)
12:30–1:30 PM	M	Hall D/19, Conv. Center	Middle School Chemistry: Big Ideas about the Very Small (p. 83)
12:30–1:30 PM	I	Grand Salon L, Marriott	Nanotechnology in the Classroom (p. 81)
12:30–1:30 PM	M–H/S	Grand Salon C, Marriott	Cuttin' Up in Chemistry (p. 84)
12:30–1:30 PM	H	Grand Salon K, Marriott	Chunking Content to Encourage Student Learning (p. 84)
2:00–3:00 PM	G	Grand Salon C, Marriott	Problem-based Learning and Technology Brings Molecular Bonding to Life (p. 100)
2:00–3:00 PM	M–H	Franklin 10, Marriott	Free, Powerful Molecular Simulations for Teaching Chemistry (p. 96)
2:00–3:00 PM	9–12	112A/B, Conv. Center	Advanced Placement® Chemistry: Determining the Rate Constant of a Chemical Reaction (p. 102)
2:00–3:00 PM	M/S	Grand Salon L, Marriott	Muddle Your Way into Using Online Course Management (p. 97)
2:00–3:00 PM	H	Independence A, Sheraton	NSTA High School Chemistry Share Session (p. 101)
2:00–3:30 PM	8–10	Hall D/2, Conv. Center	Inquiry Teaching and Learning: The Periodic Table (p. 105)
2:00–3:30 PM	12	103C, Conv. Center	Teaching Advanced Placement Chemistry: Optimize Your Students' Laboratory Experiences (p. 103)
3:30–4:30 PM	H–C	Commonwealth B, Loews	A Coherent Approach to Energy in High School Chemistry (p. 115)
3:30–4:30 PM	H	Franklin 10, Marriott	Detecting, Diagnosing, and Coping with Students' Chemistry and Physics Misconceptions (p. 113)
4:00–4:30 PM	H	Grand Salon L, Marriott	Using Clickers as Formative Assessment in a Chemistry Classroom (p. 114)
3:30–4:00 PM	G	Grand Salon L, Marriott	Clickers as Assessment and Pedagogical Research Tool (p. 114)
3:30–4:30 PM	H–C	Congress A, Loews	Past AP Chemistry Exams Help the Future (p. 111)
3:30–5:00 PM	7–12	303A/B, Conv. Center	Innovating Science: Chemistry Demonstrations That Really Get a Reaction! (p. 118)
5:00–5:30 PM	G	Grand Salon L, Marriott	High School Science Through the Eyes of an ELL (p. 126)
5:00–6:00 PM	M–H	Franklin 10, Marriott	Simple and Engaging Chemistry Demonstration (p. 125)

### Earth/Space Science

8:00–9:00 AM	M/I	Logans 2, Sheraton	NASA Family Science Night: Changing Perceptions One Family at a Time (p. 29)
8:30–9:00 AM	E–H	Independence D, Sheraton	K–12 NOAA-supported Lessons in Ocean and Climate Literacy (p. 24)
8:00–9:00 AM	E–H	Philadelphia N, Sheraton	SpaceMath@NASA: Math Problems from Across the Universe! (p. 29)
8:00–8:30 AM	M–C	Tubman, Loews	NARST Session: Teaching Deaf Students Earth Science Using Sandbox Fault Models (p. 20)
8:30–9:00 AM	G	Freedom F, Sheraton	From the Night Sky to the Classroom: The Art of Science (p. 24)
8:00–9:00 AM	E	Hall D/10, Conv. Center	Voyage to Pluto, Charon, and Beyond (p. 26)
8:00–9:00 AM	G	Freedom H, Sheraton	Geoscience Rocks! Discover the Excitement of Geoscience Research in Antarctica (p. 29)
8:00–8:30 AM	G	Independence D, Sheraton	Graduate Students as Content Experts for Enhancing Earth System Science Curricula in the 7–12 Classroom (p. 24)
8:00–9:00 AM	K–8	113A, Conv. Center	Sally Ride Science™ and PASCO: Our Changing Climate (p. 30)
8:00–9:00 AM	G	Independence B, Sheraton	Creating a Meaningful Learning Experience with Google Earth (p. 24)
8:00–8:30 AM	G	Freedom F, Sheraton	Connecting Astronomy Content with Interactive Videoconferencing in Kindergarten (p. 24)
8:00–9:00 AM	E–H	Freedom G, Sheraton	The Science of Battlestar Galactica (p. 29)
8:00–9:30 AM	7–C	104A/B, Conv. Center	A Watershed Performance: Modeling Wetlands (p. 32)
8:00–9:30 AM	K–8	113B, Conv. Center	Save the World! Earth Science for Today's Classroom (p. 32)
9:30–10:00 AM	M–H	Freedom F, Sheraton	The RISE Project: Taking Students to New Heights (p. 40)
9:30–10:30 AM	M–C	Freedom E, Sheraton	Modeling Black Holes (p. 50)
9:30–10:30 AM	E–H	Liberty A/B, Sheraton	NESTA Session: National Earth Science Teachers Association Geology Share-a-Thon (p. 50)
9:30–10:30 AM	M	Logans 2, Sheraton	Power Up, Power Down (p. 51)
9:30–10:30 AM	M–H	Freedom G, Sheraton	Following Galileo's Investigations of the Orbits of Jupiter's Moons (p. 50)
9:30–10:30 AM	I	Franklin 11, Marriott	NOAA Climate Symposium Session: The Coastal Impacts of Climate Change: Sea Level Rise (p. 45)
9:30–10:30 AM	I	Philadelphia N, Sheraton	JetStream: An Online School for Weather (p. 51)
10:00–11:30 AM	3–8	201B, Conv. Center	Discover the Solar System and Beyond (p. 55)
11:00 AM–12 Noon	K–12	Booth 641, Exhibit Hall	Moon Phases: Teaching in an Immersive Environment (p. 70)
11:00 AM–12 Noon	M–H	Franklin 11, Marriott	NOAA Climate Symposium Session: Whither Arctic Sea Ice? An Earth Exploration Toolkit Chapter on the Climate's Canary in a Coal Mine (p. 62)
11:00 AM–12 Noon	P–E	Hall D/10, Conv. Center	Outta This World (p. 62)
11:00 AM–12 Noon	E–H	Independence B, Sheraton	Promoting Authentic Learning Using a Problem-based Format (p. 63)
11:00 AM–12 Noon	M–H/I	Philadelphia N, Sheraton	Soils: More Than the Dirt Under Your Feet (p. 69)
11:00 AM–12 Noon	M	Logans 2, Sheraton	Integrating Science and Math Using NASA Materials (p. 69)
11:00 AM–12 Noon	H–C/I	Freedom E, Sheraton	Stellar Bar Codes (p. 68)
11:00 AM–12 Noon	E–H	Liberty A/B, Sheraton	NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon (p. 68)
11:00 AM–12 Noon	M–H	Freedom G, Sheraton	Inquiring About the Universe: Build Skills (Phase 3) (p. 68)
11:00 AM–12 Noon	M–H	Independence A, Sheraton	Urban Astronomy (p. 68)
11:30 AM–12 Noon	H	Freedom F, Sheraton	Mars Education Student Data Teams: Students Exploring the Red Planet (p. 71)
12 Noon–1:30 PM	6–C	105A/B, Conv. Center	GIS for Earth Science Inquiry (p. 71)
12 Noon–1:30 PM	K–12	203A, Conv. Center	MS Degree in Geosciences via Distance Learning from Mississippi State University (p. 73)
12:30–1:30 PM	M–H/I	Franklin 11, Marriott	NOAA Climate Symposium Session: Explore Earth's Systems Using the 2007 GLOBE Earth System Poster (p. 81)
12:30–1:30 PM	H	Independence A, Sheraton	NSTA High School Earth Science Share Session (p. 85)
12:30–1:30 PM	E–M	Logans 2, Sheraton	SETI Institute's Earth and Space Science Guides for Grades 3–9 (p. 85)
12:30–1:30 PM	M–H	Freedom F, Sheraton	Look to the Heavens: How to Use Google Sky in Your Science Classroom (p. 81)
12:30–1:30 PM	M–H	Freedom G, Sheraton	Infrared Astronomy with NASA's Stratospheric Observatory for Infrared Astronomy (SOFIA) (p. 84)
12:30–1:30 PM	M–H	Philadelphia N, Sheraton	Using the Seismograph in Your Student's Backpack: Teaching Earth Science Content with iPods, Laptops, and other Portable Accelerometers (p. 85)

## Schedule at a Glance Earth/Space Science, cont.

12:30–1:30 PM	E–H	Liberty A/B, Sheraton	NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon (p. 85)
12:30–1:30 PM	M–C	Freedom E, Sheraton	NASA: At the Heart of a Supernova (p. 84)
12:30–1:30 PM	M–C	Independence B, Sheraton	Make the Study of Science “Cool” with SSSNOW (p. 81)
2:00–3:00 PM	G	201C, Conv. Center	AGU Lecture: Predicting Earthquakes and Volcanic Eruptions: What Can and Cannot Now Be Done? (p. 91)
2:00–3:00 PM	E–M	Philadelphia N, Sheraton	Activities from Across the Earth System (p. 101)
2:00–3:00 PM	H–C/I	Freedom F, Sheraton	Students as Space Professionals—Yes, Really! (p. 97)
2:00–3:00 PM	I	Independence B, Sheraton	Bring the Real World of Ocean Science to Your Classroom! (p. 97)
2:00–3:00 PM	M–H	Freedom G, Sheraton	Project SPECTRA! (p. 101)
2:00–3:00 PM	E	Hall D/10, Conv. Center	Ready-to-Go Space Science Activities for Young Explorers (p. 98)
2:00–3:00 PM	E–H	Liberty A/B, Sheraton	What’s Up, Part 1: Classroom Activities from the Association of Astronomy Educators—Sun, Earth, and Planets (p. 101)
2:00–3:00 PM	G	Freedom E, Sheraton	NASA’s Planet Hunting Mission (p. 100)
2:00–3:00 PM	M	Logans 2, Sheraton	“Astronishing” Astronomy: Active Galaxies and the Black Holes at Their Centers (p. 101)
2:00–3:00 PM	E–H	Franklin 11, Marriott	NOAA Climate Symposium Session: Climate Information in Your Neighborhood (p. 96)
2:00–3:00 PM	9–12	201A, Conv. Center	El Niño and Its Effects on Weather, Climate, and the Food Chain (p. 102)
2:00–3:00 PM	6–12	113A, Conv. Center	Renewable Energy Exploration: Solar Energy and Photovoltaic Cells (p. 102)
2:00–3:30 PM	4–12	110A/B, Conv. Center	The Sky Through the Ages! (p. 103)
2:00–3:30 PM	7–12	202A, Conv. Center	Earth Science with Vernier (p. 104)
3:00–4:00 PM	K–8	Booth 641, Exhibit Hall	Moon Phases: Teaching in an Immersive Environment (p. 106)
3:00–4:30 PM	5–8	107A/B, Conv. Center	A Sneak Preview of the FOSS 2010 Planetary Science Middle School Course (p.107)
3:30–4:30 PM	M–H	Hall D/1, Conv. Center	What Is Even More Amazing Than Google Earth? (p. 109)
3:30–4:30 PM	E–H	Liberty A/B, Sheraton	What’s Up, Part 2: Beyond the Solar System (p. 116)
3:30–4:30 PM	E–M	Logans 2, Sheraton	The “Other” Side of Planet Mercury (p. 116)
3:30–4:30 PM	M–H	Independence B, Sheraton	Integrating Online Professional Development with Field Investigations in Earth Systems Science (p. 114)
3:30–4:30 PM	M–H	Philadelphia N, Sheraton	Teachers on the Estuary (p. 116)
3:30–4:30 PM	M–H	Freedom E, Sheraton	NASA: Cool Astronomy (p. 116)
3:30–4:30 PM	G	Freedom F, Sheraton	Analyzing Black Holes and Supernovae Through International X-ray Eyes (p. 114)
4:00–5:30 PM	6–7	Hall D/2, Conv. Center	Inquiry Teaching and Learning: Classifying Space Objects (p. 120)
5:00–6:00 PM	I	Franklin 11, Marriott	NOAA Climate Symposium Session: Using Data to Teach About Climate Change in Estuaries Nationwide (p. 125)
5:00–6:00 PM	P–E	Liberty A/B, Sheraton	What’s Up, Part 3: Engaging K–12 Classroom Activities from the Association of Astronomy Educators (AAE) (p. 129)
5:00–6:00 PM	P–E	Hall D/10, Conv. Center	Helping Young Children Understand the Concept of Time (p. 127)
5:00–6:00 PM	E–M	Logans 2, Sheraton	Investigating Icy Worlds (p. 129)
5:00–6:00 PM	M–H/I	Independence A, Sheraton	Using Secondary Data Sets to Explore Earthquakes and Climate (p. 129)
5:00–6:00 PM	I	Freedom E, Sheraton	“Out of This World” Opportunities from NASA’s Teaching From Space Project (p. 126)
5:00–6:00 PM	G	Freedom G, Sheraton	Mercury...Emerging Through a Veil of Mystery (p. 128)
5:00–6:00 PM	I	Freedom F, Sheraton	Simulations and Interactive Multimedia Across the Earth Sciences from Windows to the Universe (p. 128)
5:30–6:00 PM	M–H	Hall D/1, Conv. Center	Earth Science and Engineering Connections (p. 129)

## Environmental Science

8:00–8:30 AM	G	Independence C, Sheraton	The Moose Is Loose at American Wilderness Leadership School (p. 24)
8:00–9:00 AM	P–M/I	Hall D/9, Conv. Center	Why Does It Rain? Misconceptions in Elementary Science (p. 26)
8:00–9:00 AM	G	Freedom E, Sheraton	NASA’s GLOBE Program Across the Curriculum (p. 24)
8:00–9:00 AM	M	Independence A, Sheraton	Connecting Drug Education, Environmental Science, and Technology: The Game Is On! (p. 24)

## Schedule at a Glance Environmental Science, cont.

8:30–9:00 AM	G	Tubman, Loews	NARST Session: Guided Peer Discussions as a Scaffold for Developing Learning Progressions About Inquiry (p. 20)
8:30–9:00 AM	H	Independence C, Sheraton	Polar Bears to Penguins (p. 24)
8:00–9:30 AM	E–M	403, Marriott	CSME Pathway Session: Ecology of the Graham Cracker Marine Reserve (p. 30)
9:30–10:30 AM	M–H	404, Marriott	LHS Pathway Session: Integrating Sustainability in the Science Classroom (p. 44)
9:30–10:30 AM	M–H	307, Marriott	Biofuels: The By-Products of Combustion (p. 49)
9:30–10:30 AM	E–M	Freedom H, Sheraton	Antarctica’s Climate Secrets: A Suite of Resources for Teaching Climate Change Literacy (p. 50)
9:30–10:30 AM	G	Philadelphia S, Sheraton	Engaging Students with Rich Media to Study Climate Literacy (p. 51)
9:30–10:00 AM	G	Independence C, Sheraton	Green Schools as Tools for Improving Learning (p. 47)
10:00–10:30 AM	G	Independence C, Sheraton	GreenSchools! (p. 47)
9:30–10:30 AM	E–M	Independence D, Sheraton	Alien Plants (p. 47)
9:30–11:30 AM	E–M	403, Marriott	CSME Pathway Session: Water: The “Connective Fluid” of Our Ecosystem (p. 52)
9:30–11:30 AM	G	407/408, Marriott	FHL Pathway Session: Mapping the School Yard (p. 52)
11:00 AM–12 Noon	E–H	307, Conv. Center	NSTA Avenue Session: Siemens We Can Change the World Challenge—Going Green (and Digital) in the 21st Century (p. 58)
11:30 AM–12 Noon	M–H	Independence C, Sheraton	How Much Dump Do You Dump? (p. 64)
11:00 AM–12 Noon	G	Philadelphia S, Sheraton	Crabs Count Continued: A 10-Year Report (p. 69)
11:00–11:30 AM	M–H	Independence C, Sheraton	Using the Community as Your Classroom (p. 63)
12 Noon–1:30 PM	7–C	202A, Conv. Center	Water Quality and Environmental Science with Vernier (p. 72)
12 Noon–1:30 PM	6–C	203B, Conv. Center	Human Health and Global Environmental Change for Educators (p. 73)
12:30–1:30 PM	6–8	201A, Conv. Center	Teaching in the 21st Century: Integrating Project-based Curricula and Probeware (p. 87)
12:30–1:30 PM	E–M	Freedom H, Sheraton	Changes in Earth and Sky: Weather Adages for Classroom Connections (p. 84)
1:00–1:30 PM	E–H	Independence C, Sheraton	Rain Barrel Project: Rooftop to Tap (p. 82)
12:30–1:30 PM	M–H/I	201C, Conv. Center	National Lab Day Is for Teachers! (p. 77)
12:30–1:30 PM	H	Anthony, Loews	CSSS Session: Authentic Multidisciplinary Student Research: Assessing Attitudes, Knowledge, and Behaviors Related to Water Quality (p. 78)
12:30–1:30 PM	E	Hall D/9, Conv. Center	Earth Counts: Hands-On Human Ecology Across the Curriculum (p. 83)
12:30–1:00 PM	M–H	Independence C, Sheraton	How Muddy Is the Muddy River? (p. 82)
12:30–1:30 PM	G	Philadelphia S, Sheraton	Equal Access to Environmental Science Through Program Modifications and Technology (p. 85)
2:00–3:00 PM	M–H	Freedom H, Sheraton	National Marine Sanctuaries: Sentinels for Monitoring Climate and Ecosystem Change (p. 101)
2:00–3:00 PM	M	Independence D, Sheraton	Where Have All the Trees Gone? (p. 97)
2:30–3:00 PM	H	Independence C, Sheraton	SENSE IT (p. 97)
2:00–3:00 PM	G	Philadelphia S, Sheraton	Living Energy and Restoration of the Environment (p. 101)
2:00–3:00 PM	M–H	Anthony, Loews	CSSS Session: Supporting Inquiry Using GIS Technology and Invasive Species (p. 93)
2:00–3:30 PM	5–C	105A/B, Conv. Center	GIS for Environmental Science Inquiry (p. 103)
3:30–4:30 PM	E–H	Franklin 11, Marriott	NOAA Climate Symposium Session: Climate Change Toolkit (p. 113)
3:30–4:30 PM	9–12	201A, Conv. Center	Investigating in Environmental Science: A Case-based Approach (p.117)
3:30–4:30 PM	9–12	112A/B, Conv. Center	Advanced Placement® Environmental Science: Modeling an Ecosystem (p. 117)
3:30–4:30 PM	I	Hall D/6, Conv. Center	Bridging the Outdoors with Science Education, ELA, Art, and Historical Perspectives (p. 109)
3:30–4:30 PM	E	Hall D/16, Conv. Center	Technology Goes Outdoors: Integrating Technology and Student Notebooks to Capture Seasonal Changes in the Schoolyard (p. 109)
3:30–4:30 PM	E–M	Independence D, Sheraton	Watershed Moments: Designing an Environmental Curriculum That Flows (p. 114)
3:30–4:30 PM	M–H	Hall D/5, Conv. Center	Engaging Urban Students in Urban Ecological Studies Through GIS (p. 109)
3:30–4:30 PM	G	Philadelphia S, Sheraton	Explore, Connect, and Change...Make an Earth Difference (p. 116)
3:30–4:30 PM	E	Hall D/9, Conv. Center	General Science and Environmental Activities for Elementary Students (p. 115)
3:30–4:30 PM	G	Independence C, Sheraton	I’m Too Busy for Social Networking—Why Bother? (p. 114)
4:00–5:30 PM	5–12	304, Conv. Center	Charge the Battery...Change the World! (p. 120)
4:00–5:30 PM	9–12	113B, Conv. Center	Real Issues, Real Data, Real Choices: Teaching Environmental Science in Today’s High School (p. 119)
4:00–5:30 PM	4–8	203B, Conv. Center	The Watershed Tour (p. 120)

## Schedule at a Glance Environmental Science, cont.

5:00–6:00 PM	E–H	Independence C, Sheraton	Environmental Pathways: Cultivating Children’s Natural Desire to Learn (p. 126)
5:00–6:00 PM	P–M	Independence D, Sheraton	Teaching and Learning with Monarch Butterflies (p. 126)
5:00–6:00 PM	G	Grand Salon C, Marriott	Environmental Science for Urban Learners (p. 128)

### Integrated/General Science

8:00–8:30 AM	E–M/I	Hall D/23, Conv. Center	Meaningful Do-Nows and Fillers to Explore Ideas, Stimulate Curiosity, and Improve Scientific Communication (p. 16)
8:00–9:00 AM	E–M	Hall D/22, Conv. Center	Integrating Math, Science, and Literacy in the K–8 Classroom (p. 17)
8:00–9:00 AM	G	Hall D/11, Conv. Center	An Overview of NSDL’s Science Literacy Maps (p. 16)
8:00–9:00 AM	M–H	302/303, Marriott	Forensic Science: How to Get Kids Interested in Science! (p. 20)
8:00–9:00 AM	G	Hall D/25, Conv. Center	Empowering Teachers of ELLs and At-Risk Students with PBL Strategies to Improve Instructional Delivery and Classroom Management (p. 17)
8:00–9:00 AM	G	Commonwealth B, Loews	Move a Wall? Using Nanoscience and Geometry to Measure an Imperceptible Distance (p. 26)
8:00–9:00 AM	E–M	Hall D/20, Conv. Center	Going for the Gold: Creating a Science Olympics Competition at Your School (p. 17)
8:00–9:00 AM	P–E	Hall D/17, Conv. Center	The Three Little Pigs: Early Engineers (p. 26)
8:00–9:00 AM	E	Hall D/16, Conv. Center	Children’s Literature with a Science Twist (p. 26)
8:00–9:00 AM	H–C/S	Washington B, Loews	Recruiting and Motivating AP Science Students in Urban Schools: Strategies That Work (p. 20)
8:00–9:00 AM	M–H	Grand Salon B, Marriott	Nuclear Energy (p. 28)
8:00–9:00 AM	P	Hall D/8, Conv. Center	Hey! Wow! But What Are We Supposed to Do with It? Open-ended Science Activities for Young Children (p. 16)
8:00–9:00 AM	G	Congress B, Loews	Using Portfolios to Promote Reflective Practice in New Teachers (p. 18)
8:00–8:30 AM	H–C/I	Congress A, Loews	The Sky’s the Limit: A Cross-disciplinary Collaboration of Science and Art (p. 18)
8:00–9:00 AM	G	Hall D/26, Conv. Center	Spreading the Word: Writing Science to Fascinate an Everyday Audience (p. 17)
8:00–9:00 AM	M–C	Franklin 7, Marriott	Using Moodle to Enhance Student Learning (p. 22)
8:00–9:00 AM	G	Commonwealth D, Loews	AMSE Session: Understanding Science: How Science Really Works (p. 18)
8:00–9:00 AM	G	Hall D/28, Conv. Center	The Honeybee: A Perfect Topic for Inquiry and Content Integration (p. 26)
8:00–9:00 AM	P–E	Hall D/15, Conv. Center	Bargain Bag Science for Elementary School Teachers: Cheap and Easy Science Ideas for Elementary Science (p. 26)
8:00–8:30 AM	H–C	Hall D/6, Conv. Center	Integrate Biology and Geology: 1883 News Report—Kakatoa Erupts! (p. 16)
8:30–9:00 AM	H–C	Congress A, Loews	Civic Engagement and the Study of Science... Let’s Bond Them Together (p. 18)
8:00–9:00 AM	G	Hall D/30, Conv. Center	Blogs and Podcasts, Wiki Sites, and Streamed Video, Oh My! (p. 18)
8:00–9:00 AM	M–C	Hall D/7, Conv. Center	Hollywood Science (p. 16)
8:00–9:00 AM	M–H/I	305/306, Marriott	How to Take a Field Trip in the Digital Age (p. 20)
8:00–9:00 AM	G	Hall D/27, Conv. Center	From School Colors to Green: Using School-wide Changes to Create Cross-curricular Opportunities (p. 17)
8:00–9:00 AM	M–C	Hall D/29, Conv. Center	Integrating the Sciences Through Energy (p. 18)
8:00–9:00 AM	E/S	Regency C1, Loews	Designing Effective Curriculum Guides to Improve School District Science Achievement (p. 20)
8:00–9:00 AM	G	Congress C, Loews	NSELA Session: Miles, Smiles, and Lots of Chocolate (p. 20)
8:00–8:20 AM	M–C	Commonwealth A, Loews	SCST Session: Increasing 21st-Century Science and Literacy Skills (p. 18)
8:00–9:00 AM	C	Grand Salon G, Marriott	Student Chapter Session: NSTA Student Chapter Faculty Advisor Roundtable (p. 23)
8:00–9:00 AM	S	414/415, Marriott	BSCS Pathway Session: Got Inquiry? How Do We Know? (p. 22)
8:00–9:00 AM	G	401/402, Marriott	McREL Pathway Session: Student-designed Experiments (p. 22)
8:00–9:00 AM	M–H	404, Marriott	LHS Pathway Session: Green Chemistry: Using Chemistry Knowledge to Inform Societal Decisions (p. 22)
8:00–9:00 AM	H	405, Marriott	Skills Pathway Session: The Intersection of Science and 21st-Century Skills (p. 22)
8:00–9:00 AM	E–M/I	407/408, Marriott	FHL Pathway Session: Louisville Is Engaging Children Outdoors (Louisville ECHO) (p. 22)
8:00–9:00 AM	6–8	201A, Conv. Center	There Is More to Project-Based Science Than Just a Project: (PBIS) (p. 30)
8:00–9:00 AM	E	Hall D/14, Conv. Center	The FoodMASTER Initiative (p. 17)
8:00–9:15 AM	1–6	108B, Conv. Center	Put Some Spark into Science Investigations (p. 30)



## Schedule at a Glance Integrated/General Science, cont.

8:00–9:15 AM	7–10	109A/B, Conv. Center	A Closer Look at Biology, Chemistry, and Earth Science Virtual Labs (p. 30)
8:00–9:30 AM	5–12	108A, Conv. Center	Electric Circuits: Fun with Electricity and Circuits (p. 32)
8:00–9:30 AM	K–5	201B, Conv. Center	Going the Distance in Math (p. 34)
8:00–9:30 AM	K–12	Hall D/4, Conv. Center	Sciencing the Nation and Making It Count: How Does It Add Up for Singapore? (p. 36)
8:00–9:30 AM	K–2	111A/B, Conv. Center	A to Z Science Activities for the Primary Classroom (p. 32)
8:00–9:30 AM	G	113C, Conv. Center	The Private Eye: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 34)
8:00–9:30 AM	K–5	203B, Conv. Center	Science and Literacy: Reading and Writing Informational Text (p. 34)
8:00–9:30 AM	K–8	304, Conv. Center	Reading in the 21st Century (p. 35)
8:00–9:30 AM	7–12	303A/B, Conv. Center	Introducing a New Data Logging System for Your Science Lab! (p. 35)
8:00–10:00 AM	E	411/412, Marriott	EDC Pathway Session: Increasing Achievement in Expository Writing and Inquiry-based Science in the Elementary Grades (p. 36)
8:00–10:00 AM	E–H	406, Marriott	TERC Pathway Session: The Times They Are a-Changin’: Using Data to Understand Change Over Time (p. 36)
8:00–11:00 AM	G	409, Marriott	WestEd Pathway Session: Assessment-centered Teaching: A Reflective Practice (p. 36)
8:00–11:00 AM	G	Hall D/1, Conv. Center	ISTE: The Tech-based Science Classroom (p. 38)
8:00–11:00 AM	G	410, Marriott	FACET Innovations Pathway Session: Using Online Tools to Support Assessment for Learning (p. 36)
8:30–9:30 AM	G	201C, Conv. Center	Featured Presentation: Appreciating the “Human Factor” in Science Education (p. 39)
8:30–11:30 AM	5–8	107A/B, Conv. Center	Using Student Science Notebooks to Assess Student Learning (for Experienced Users Grades 5–8) (p. 39)
9:30–10:00 AM	C/I	Commonwealth A, Loews	SCST Session: Science and Math Education for the Adult Urban Student: These Aren’t Your Parents’ College Courses! (p. 42)
9:30–10:30 AM	C	Grand Salon G, Marriott	Student Chapter Session: NSTA Student Chapter Action Session (p. 46)
9:30–10:30 AM	E–M	Grand Salon E/F, Marriott	Informal Science Day Session: Engaging Students in Science Through After-School Activities (p. 50)
9:30–10:30 AM	H	405, Marriott	Skills Pathway Session: Implementing a Framework for 21st-Century Science Learning (p. 44)
9:30–10:30 AM	G	Grand Salon E/F, Marriott	Informal Science Day Session: Seven Great Virtual Lab Exemplars from the NSDL Collection (p. 46)
9:30–10:30 AM	E–H	307, Conv. Center	NSTA Avenue Session: How to Write a Successful Grant Proposal (p. 40)
9:30–10:30 AM	G	Grand Salon E/F, Marriott	Informal Science Day Session: Portal to the Public: Building Partnerships Between Scientists and Informal Science Educators (p. 45)
9:30–10:30 AM	G	Anthony, Loews	CSSS Session: Potpourri of Instructional Strategies for Integrating Content Areas (p. 42)
9:30–10:30 AM	G	Commonwealth B, Loews	Differentiated Leadership: Leading with Learning Styles in Mind (p. 49)
9:30–10:30 AM	M	Hall D/22, Conv. Center	Science Research Intermediate-Level Style (p. 41)
9:30–10:30 AM	P–E	Hall D/14, Conv. Center	Arts Integration: The Science of Learning the Learning of Science (p. 40)
9:30–10:30 AM	M	Hall D/21, Conv. Center	All Systems Go! (p. 48)
9:30–10:00 AM	G	Congress B, Loews	Supporting Student Teachers to Utilize Web 2.0 for Teaching Science in Urban Classrooms (p. 42)
9:30–10:30 AM	M–H	Grand Salon A, Marriott	Increase the Inquiry in Your Labs (p. 49)
9:30–10:30 AM	H/S	Washington B, Loews	Preparing Urban AP Teachers (p. 43)
9:30–10:30 AM	G	Hall D/11, Conv. Center	Supporting English Language Learners (p. 40)
9:30–10:30 AM	E–M	Hall D/20, Conv. Center	Connecting Math and Science Through Computerized Data Collection (p. 41)
9:30–10:30 AM	E	Hall D/15, Conv. Center	Making It Messy: Connecting “Hands On” to “Minds On” Through an Engaging Interactive Process (p. 48)
9:30–10:30 AM	E/S	Regency C1, Loews	Environmental Economics: Connecting Science, Math, and Social Studies (p. 43)
9:30–10:30 AM	G	Hall D/25, Conv. Center	Windows on the Classroom (p. 41)
10:00–10:30 AM	G	Congress B, Loews	SAVE Science: Learning What Students Really Know About Science Using Virtual Environments (p. 43)

## Schedule at a Glance Integrated/General Science, cont.

9:30–10:30 AM	G	Hall D/27, Conv. Center	The Nuts and Bolts of Science Coaching (p. ) 42
9:30–10:30 AM	E–M	Grand Salon H, Marriott	SEPA/APAST Share-a-Thon (p. 46)
9:30–10:30 AM	M–H	Grand Salon B, Marriott	Climate Change and You (p. 49)
9:30–10:30 AM	G	Hall D/30, Conv. Center	Technology Rocks: Developing and Using Interactive Curriculum Maps in the Science Classroom (p. 42)
9:30–10:30 AM	G	Hall D/26, Conv. Center	Engaging Formative Assessments for Science Teachers (p. 42)
9:30–10:30 AM	G	Hall D/6, Conv. Center	How Big Are YOUR Feet? Measuring Your Ecological Footprint (p. 48)
9:30–10:30 AM	G	Congress C, Loews	NSELA Session: From the United States to Thailand: The Globalization of an Effective Professional Development Model (p. 43)
9:30–10:30 AM	M–H	302/303, Marriott	Science and Journalism: Mini-Lessons That Bridge the Gap (p. 44)
9:30–10:30 AM	E–H	Hall D/5, Conv. Center	Increasing Appreciation for Science in Six Reservation Schools (p. 48)
9:30–10:30 AM	G	Independence B, Sheraton	Learning Science in Informal Environments (p. 47)
9:30–10:30 AM	M–H/I	Grand Salon J, Marriott	Beyond the Chia Pet® (p. 50)
9:30–10:30 AM	E	Hall D/16, Conv. Center	Once Upon a Time: Moving from Fairy Tales to Science and Engineering (p. 40)
9:30–10:30 AM	P–E	Hall D/17, Conv. Center	Ecology Education: Using Student Imagination and the Study of Ecology to Support Preschoolers’ Understanding of Science Concepts (p. 41)
9:30–10:30 AM	G	Hall D/29, Conv. Center	Engaging Students with Math and Science Through Global Issues (p. 48)
9:30–11:00 AM	G	401/402, Marriott	McREL Pathway Session: Addressing Student Misconceptions (Preconceptions) (p. 52)
9:30–11:00 AM	E–H	414/415, Marriott	BSCS Pathway Session: Do Your Students “Get It”? Sense-making Strategies for Your Science Class (p. 52)
10:00–11:15 AM	1–6	108B, Conv. Center	Integrating Science and Literacy in Grades 1–6 (p. 53)
10:00–11:15 AM	7–10	109A/B, Conv. Center	Inquiry Investigations™ Forensics Science Curriculum Module and Kits (p. 53)
10:00–11:30 AM	7–C	103B, Conv. Center	Bio-Rad—Got Protein in Your Milk? (p. 54)
10:00–11:30 AM	5–12	108A, Conv. Center	Electric Motor: Fun with Electromagnetism—Who Can Build the Fastest Motor? (p. 54)
10:00–11:30 AM	7	Hall D/4, Conv. Center	Camera Magic: Strategies to Incorporate Visual Presenters into Your Lessons (p. 56)
10:00–11:30 AM	4–8	113C, Conv. Center	If You Can’t Stand the Pressure, Get Out of the Classroom (p. 55)
10:00–11:30 AM	3–12	111A/B, Conv. Center	Teaching Inquiry Science with Toys and Treats (p. 55)
10:00–11:30 AM	9–12	303A/B, Conv. Center	Advanced Data Logging for Your High School Science Lab! (p. 56)
10:00 AM–12 Noon	G	Washington C, Loews	Professional Development Providers: What You Need to Know from A to Z! (p. 57)
10:30 AM–12 Noon	G	201C, Conv. Center	Shell Science Seminar: Building an Environmentally Literate Workforce Through STEM Education (p. 57)
10:30 AM–12 Noon	G	204C, Conv. Center	Shell Science Seminar: Urban Science Education Leaders Academy: An Urban Response to a National Emergency (p. 58)
11:00 AM–12 Noon	E/I	Grand Salon E/F, Marriott	Informal Science Day Session: LEAP into Science: A Museum/Library Partnership in After-School Science Learning (p. 63)
11:00 AM–12 Noon	G	Grand Salon E/F, Marriott	Informal Science Day Session: Change Attitudes About STEM with Free Online Professional Development from PBS (p. 63)
11:00 AM–12 Noon	C	Grand Salon G, Marriott	Student Chapter Session: Becoming an NSTA Student Chapter Leader (p. 63)
11:00 AM–12 Noon	G	Commonwealth B, Loews	What Makes People Happy in Science Classrooms: Implications from Current Doctoral Research (p. 65)
11:00 AM–12 Noon	M–H	Hall D/7, Conv. Center	Teaching Science to Reluctant Learners (p. 58)
11:00 AM–12 Noon	G	Anthony, Loews	CSSS Session: The Evolution of Inquiry in the 21st Century (p. 60)
11:00 AM–12 Noon	G	Commonwealth A, Loews	Stand and Deliver! Be a Presenter at NSTA Conferences (p. 60)
11:00 AM–12 Noon	I	Grand Salon E/F, Marriott	Informal Science Day Session: What Do We Know About Science Learning Beyond the Classroom? (p. 63)
11:00–11:30 AM	M	Hall D/20, Conv. Center	Divide and Grow: Team Teaching for the 21st Century (p. 59)
11:00–11:30 AM	E	Hall D/14, Conv. Center	Elementary Science Learning Through Social Networking (p. 59)
11:00 AM–12 Noon	S	Washington B, Loews	Building Partnerships to Improve Teacher Quality and Student Outcomes: The Cleveland Math and Science Partnership (p. 61)
11:00 AM–12 Noon	E–H	Hall D/11, Conv. Center	Reading, Writing, and Science...a Beautiful Friendship (p. 59)
11:00 AM–12 Noon	G	Hall D/25, Conv. Center	Peer Teacher Workshops: A Model for Developing Instructional Leadership (p. 59)

## Schedule at a Glance Integrated/General Science, cont.

11:00 AM–12 Noon	G	Hall D/29, Conv. Center	Has NCLB Endangered Science Fair Project Participation in the U.S.? <sup>?</sup> (p. 59)
11:30 AM–12 Noon	E–M	Hall D/20, Conv. Center	Teacher Leadership for Effective K–8 Science Instruction: The Da Vinci Teacher Leader Institute (p. 59)
11:00 AM–12 Noon	E	Hall D/16, Conv. Center	Connecting Science and Math (p. 64)
11:00 AM–12 Noon	G	Freedom H, Sheraton	Adolescent Literacy and Science: An Interdisciplinary Approach (p. 68)
11:00 AM–12 Noon	G	Independence D, Sheraton	The ARMADA Project: Research and Mentoring Experiences for Teachers (p. 64)
11:00 AM–12 Noon	G	Hall D/28, Conv. Center	Connecting Undergraduates to Science Through Authentic Inquiry-based Investigations (p. 65)
11:00 AM–12 Noon	M–H	302/303, Marriott	Hook, Line, and Sinker! How to Catch and Hold Students' Attention (p. 61)
11:00 AM–12 Noon	G	Hall D/30, Conv. Center	Celebrating African American Scientists and Inventors Through Hands-On Science (p. 60)
11:00 AM–12 Noon	M	Hall D/23, Conv. Center	Hook 'em into Learning Science (p. 65)
11:00 AM–12 Noon	M–H	Grand Salon B, Marriott	Thematic-based Science Teaching (p. 66)
11:30 AM–12 Noon	E	Hall D/14, Conv. Center	Elementary Science and Engineering Connections (p. 59)
11:30 AM–12 Noon	H–C	Congress A, Loews	Delaware's NSF GK–12 Project: Integrating Science Research into Vo-Tech High Schools (p. 60)
11:00 AM–12 Noon	M–C/S	Commonwealth D, Loews	AMSE Session: Boston Science Partnership Follow-Up to "Secret to Urban AP Success" (p. 60)
11:00–11:30 AM	H–C	Congress A, Loews	The Role of University Science Faculty Members in the Education of Future Science Teachers (p. 60)
11:00 AM–12 Noon	M	Hall D/21, Conv. Center	Earth as a System: Seasons and the Seas (p. 65)
11:00 AM–12 Noon	P–E	Hall D/17, Conv. Center	Starting Them Early: Science Learning In PreK and Early Elementary (p. 65)
11:00 AM–12 Noon	E	Hall D/15, Conv. Center	Strengthening Science Writing and Inquiry: Helping Students Develop Claims with Evidence and Reasoning (p. 64)
11:00 AM–12 Noon	M–H	305/306, Marriott	Teaching with Timelines: How Organizing the Past Prepares Students for the Future (p. 61)
11:00 AM–12 Noon	G	Hall D/27, Conv. Center	Energize Your Classroom with Discrepant Events: A Little Science Magic! (p. 59)
11:00 AM–12 Noon	G	Grand Salon H, Marriott	Outstanding Science Trade Books' Connections to Reality by Presidential Awardees (p. 67)
11:00 AM–12 Noon	G	Congress B, Loews	Virtual Worlds: When Science Is a Video Game! (p. 60)
11:00 AM–12 Noon	E–M	Hall D/6, Conv. Center	Connecting Math and Science Through Inquiry: Engaging Lessons for Middle School Kids (p. 64)
11:00 AM–12 Noon	M–H	Grand Salon A, Marriott	Forensic Science: The Integration of Many Sciences (p. 66)
11:00 AM–12 Noon	E–H	Hall D/26, Conv. Center	Inquiry-based Hands-On Activities and Demonstrations (p. 65)
11:00 AM–12:30 PM	G	401/402, Marriott	McREL Pathway Session: Scientific Discourse in the Classroom (p. 70)
11:00 AM–1:00 PM	E–M	406, Marriott	TERC Pathway Session: Thinking Outside the Coordinate Graph: From Data to Art to Understanding (p. 70)
11:00 AM–1:00 PM	E	411/412, Marriott	EDC Pathway Session: Linking Science and Literacy Through Nature Journals (p. 70)
12 Noon–1:15 PM	K–12	109A/B, Conv. Center	Educational Science Lab Design and Implementation for the 21st Century Made Easy (p. 71)
12 Noon–1:30 PM	7	Hall D/4, Conv. Center	Camera Magic: Strategies to Incorporate Visual Presenters into Your Lessons (p. 73)
12 Noon–1:30 PM	9–12	304, Conv. Center	Building Inquiry with <i>BSCS Science: An Inquiry Approach</i> (p. 73)
12 Noon–1:30 PM	7–C	202B, Conv. Center	Video Analysis with Vernier (p. 72)
12 Noon–1:30 PM	K–5	201B, Conv. Center	Science Notebooking: Integrating Writing and Science (p. 72)
12 Noon–1:30 PM	7–12	103C, Conv. Center	How to Design a Safe and Efficient Science Laboratory (p. 71)
12 Noon–1:30 PM	3–12	111A/B, Conv. Center	Teaching Inquiry Science with Toys and Treats (p. 72)
12 Noon–2:00 PM	K–8	107A/B, Conv. Center	Taking Science Outdoors with FOSS K–8 (p. 75)
12:30–1:00 PM	G	Hall D/30, Conv. Center	NSTA Teacher and Principal Awards and Recognitions (p. 75)
12:30–1:00 PM	E–M	Hall D/20, Conv. Center	Learning Outside the Box: Site-based Learning (p. 75)
12:30–1:00 PM	C	Congress A, Loews	Designing for Excitement in Science Education: A Graduate Program Focused On Changing the Way Science Is Taught in the Grades 7–12 Classroom (p. 76)
12:30–1:30 PM	C	Commonwealth A, Loews	SCST Marjorie Gardner Lecture: Too Much Content to Cover? Teach Using Competencies Instead (p. 76)

## Schedule at a Glance Integrated/General Science, cont.

12:30–1:30 PM	G	Grand Salon E/F, Marriott	Informal Science Day Keynote Address: Improve Your Practice by Exploring What Research Says About Learning Science in Informal Environments (p. 77)
12:30–1:30 PM	M–H	Hall D/7, Conv. Center	Get Moving! Kinesthetic Tools for Excellence in Middle School Science (p. 82)
12:30–1:30 PM	S	307, Conv. Center	NSTA Avenue Session: The NSTA Learning Center: Free Classroom Resources and Professional Development for Educators (p. 77)
12:30–1:30 PM	G	Independence D, Sheraton	International Engineering Academy: Teaching Coastal Erosion, Water Quality, and Wind Energy in Thailand (p. 82)
12:30–1:30 PM	G	Hall D/29, Conv. Center	The Video Weblog: A Crash Course (p. 78)
12:30–1:30 PM	S	Regency C1, Loews	Philadelphia Teachers Share Energy Education Successes (p. 79)
12:30–1:30 PM	G	Commonwealth B, Loews	After-School Science Seminar (p. 83)
12:30–1:30 PM	P–E	Hall D/15, Conv. Center	Building a Science Foundation: PreK–3, Scientists of the Future (p. 78)
12:30–1:30 PM	M/I	Hall D/6, Conv. Center	Bringing the Icy Ends of the Earth Right into Your Classroom! (p. 82)
12:30–1:30 PM	M–H	302/303, Marriott	We’re So into Science! Writing and Talking That Enhances Science Learning (p. 80)
12:30–1:30 PM	E–M	Hall D/22, Conv. Center	I SING: Integrated Science Inspires Neural Growth (p. 83)
12:30–1:30 PM	G	Tubman, Loews	Navigation Guides: A Unique Approach to Connecting the Curriculum (p. 79)
12:30–1:30 PM	S	Washington B, Loews	Building Capacity and Improving Instruction Through Sustained Educational Coaching (p. 80)
12:30–1:30 PM	G	Hall D/11, Conv. Center	Electromagnetic Pasta (p. 83)
1:00–1:30 PM	E	Hall D/14, Conv. Center	Weaving Literacy into a Science Research Project: A Case Study on Volcanoes (p. 77)
12:30–1:30 PM	G	Congress B, Loews	Engaging Science Teachers in Inquiry: Have Them Observe a Summer Science Camp (p. 78)
12:30–1:30 PM	G	Hall D/27, Conv. Center	Factors Predicting Students’ Persistence in Science (p. 78)
12:30–1:00 PM	E	Hall D/14, Conv. Center	Nonfiction Reader Links and NSES in Elementary Classrooms (p. 77)
12:30–1:30 PM	E–H	Hall D/28, Conv. Center	Low-Tech but High-Effect Inquiry-based Science Lab Activities (p. 83)
12:30–1:30 PM	E–H	Hall D/10, Conv. Center	Science Buddies: High School and Elementary Students Learning Together (p. 77)
12:30–1:30 PM	M–H	305/306, Marriott	Motivating Students to “Want” to Learn the Scientific Method (p. 80)
12:30–1:30 PM	G	414/415, Marriott	BSCS Pathway Session: Student Talk: Who’s Accountable? (p. 80)
12:30–1:30 PM	M–H	404, Marriott	LHS Pathway Session: Integrating World Health Issues into a Life Science Classroom (p. 80)
12:30–1:30 PM	M–H	405, Marriott	Skills Pathway Session: Building 21st-Century Skills Through Innovative Technology Experiences for Students and Teachers (p. 80)
12:30–1:30 PM	C	Grand Salon G, Marriott	Student Chapter Session: Getting Connected: NSTA Student Chapter Interactive Television (ITV) Meetings (p. 81)
12:30–1:30 PM	G	Hall D/1, Conv. Center	ISTE: Podcasting for Students and Teachers in Science (p. 82)
12:30–1:30 PM	G	307, Marriott	DuPont Presents—Safety in the Science Classroom and Lab (p. 80)
12:30–1:30 PM	E	Hall D/17, Conv. Center	I’m a Real Scientist! Teaching the Scientific Method to Elementary Students (p. 83)
12:30–1:30 PM	P–E	Hall D/16, Conv. Center	Science with a Story (p. 78)
12:30–1:30 PM	M	Hall D/23, Conv. Center	Smarter Science for Middle School: Literacy and Numeracy in Action (p. 83)
12:30–1:30 PM	M–H	Congress C, Loews	The First-Year Teacher Experience: Stories of Triumph and Challenges (p. 79)
12:30–2:00 PM	E–H	Grand Salon H, Marriott	Toyota TAPESTRY Share-a-Thon #1 (p. 86)
12:30–2:30 PM	E–M/I	407/408, Marriott	FHL Pathway Session: Outdoors After School (p. 87)
12:30–2:30 PM	E–M	403, Marriott	CSME Pathway Session: Exploring Environmental Issues: Places We Live (p. 87)
12:30–2:30 PM	G	410, Marriott	FACET Innovations Pathway Session: Fostering Classroom Culture in Support of Formative Assessment (p. 87)
12:30–3:30 PM	G	409, Marriott	WestEd Pathway Session: Understanding the Conceptual Flow in Instructional Materials (p. 88)
1:00–2:15 PM	K–6	108B, Conv. Center	Working as One with Hands and Minds (p. 88)
1:30–3:00 PM	G	201C, Conv. Center	Featured Panel: Gathering Storm or Gathering Cobwebs? What Is the Federal Response to the Science Education Crisis? (p. 89)
1:30–3:00 PM	G	204C, Conv. Center	Sigma Science Seminar: It’s Not Enough to Be a Good Scientist (p. 90)
1:30–3:00 PM	9–12	303A/B, Conv. Center	Improving Test Scores with Curriculum Games for High School Science (p. 90)
2:00–3:00 PM	H/I	Grand Salon E/F, Marriott	Informal Science Day Session: Zoo Academy: Creation of a Smaller Learning Community Within the Community (p. 96)
2:00–2:30 PM	G	Hall D/17, Conv. Center	“Bridging” the Span Between Lower and Middle School Science (p. 91)

## Schedule at a Glance Integrated/General Science, cont.

2:00–3:00 PM	M–C	401/402, Marriott	How to Publish Your Ideas in a Professional Journal (p. 94)
2:00–3:00 PM	M–H	Commonwealth B, Loews	Science Performance Assessment Tasks According to Structure, Transfer, Sequence, and Organization (p. 99)
2:00–3:00 PM	M–H	305/306, Marriott	SmartGraphs (p. 94)
2:00–3:00 PM	G	Hall D/27, Conv. Center	Tips for Motivating Unmotivated Students (p. 93)
2:00–3:00 PM	E–M	Grand Salon D, Marriott	NSTA Press Session: Uncovering Student Ideas with Everyday Science Mysteries (p. 100)
2:00–3:00 PM	E	Hall D/6, Conv. Center	Build an Interdisciplinary Polar Science Unit with Beyond Penguins and Polar Bears (p. 92)
2:00–3:00 PM	E	Hall D/16, Conv. Center	Shoobox Science: Science Activities That Fit in a Shoobox (p. 98)
2:00–3:00 PM	G	Hall D/11, Conv. Center	Recording the Rhythms of Stellar Heartbeats (p. 98)
2:00–3:00 PM	G	Hall D/30, Conv. Center	Podcasting Basics for Meaningful Learning (p. 93)
2:00–3:00 PM	G	Congress B, Loews	Increasing Effective Interactions with Students: SATIC Coding and Self-Reflection (p. 93)
2:00–3:00 PM	G	Hall D/28, Conv. Center	Science E-Portfolio Assessments: Create Higher Levels of Thinking (p. 99)
2:00–3:00 PM	E–H	Grand Salon K, Marriott	Presidential Awards for Excellence in Mathematics and Science Teaching (p. 96)
2:00–3:00 PM	M–H	302/303, Marriott	European Programs for Science Education (p. 94)
2:00–3:00 PM	P–E	Hall D/15, Conv. Center	Planting the Seeds of Science at Kindergarten Centers (p. 98)
2:00–3:00 PM	S	Regency C1, Loews	Coaching: The Tool for Renewal (p. 94)
2:00–3:00 PM	E–M	Hall D/23, Conv. Center	Assessing Preservice Teachers in Preparation for Teaching Science (p. 99)
2:00–3:00 PM	G	Congress C, Loews	NSELA Session: The Right Organization for All Science Education Leaders (p. 93)
2:00–3:00 PM	G	Hall D/25, Conv. Center	She Discovered It! Bringing Women Scientists to Life in the Classroom (p. 92)
2:00–3:00 PM	M	Hall D/18, Conv. Center	Writing in Science: As Simple as 1, 2, 3 (p. 98)
2:30–3:00 PM	C	Congress A, Loews	Undergraduate Studies for Earthquake Information Technology (UseIT) (p. 106)
2:00–3:00 PM	S	Washington B, Loews	Growing Students NOT Grades (p. 94)
2:00–2:30 PM	G	Hall D/20, Conv. Center	Categorization of Concept-mapping Errors (p. 92)
2:00–3:00 PM	E–M	Hall D/22, Conv. Center	Developing Questions That Yield Important K–8 Science Content (p. 99)
2:00–3:00 PM	G	Hall D/29, Conv. Center	Writing a Successful Grant Proposal (p. 93)
2:00–3:00 PM	M–H	307, Marriott	DuPont Presents—WOW! That’s Engineering! (p. 99)
2:00–3:00 PM	G	Tubman, Loews	ASTE Session: Inquiring Minds, Inquiring Methods: The Science Fair as a Professional Renewal Experience for Teachers and Problem-solving Experience for Students (p. 94)
2:00–3:00 PM	M	Hall D/21, Conv. Center	Development and Implementation of Inquiry-oriented Activities for the Middle School Science Classroom (p. 99)
2:30–3:00 PM	E–H	Hall D/20, Conv. Center	Designing and Using Concept Maps in the Science Classroom (p. 92)
2:00–3:00 PM	G	Hall D/1, Conv. Center	ISTE: Emerging Technologies in the Science Classroom (p. 92)
2:00–3:00 PM	G	307, Conv. Center	NSTA Avenue Session: No Child Left Behind Update (p. 92)
2:00–3:00 PM	C	Grand Salon G, Marriott	Student Chapter Session: Increase Science Enthusiasm on Your Higher Education Campus: Start an NSTA Student Chapter (p. 96)
2:00–3:00 PM	G	Grand Salon E/F, Marriott	Informal Science Day Session: Place-based Education and 21st-Century Skills Using New Mapping Technologies (p. 96)
2:00–3:00 PM	I	Grand Salon E/F, Marriott	Informal Science Day Session: STEM for All: An Overview (p. 100)
2:00–3:00 PM	I	Grand Salon E/F, Marriott	Informal Science Day Session: Science in After School (p. 96)
2:00–3:00 PM	E	Hall D/14, Conv. Center	Adapting Elementary Inquiry to Include All Students (p. 98)
2:00–3:00 PM	G	406, Marriott	Getting Published in an NSTA Journal (p. 95)
2:00–3:00 PM	E–M/S	Hall D/5, Conv. Center	The Promise of Preschool Science (p. 92)
2:00–3:15 PM	7–10	109A/B, Conv. Center	Introducing Inquiry Investigations™: Hands-On Inquiry Activities Focusing on Technology (p. 102)
2:00–3:30 PM	K–8	113B, Conv. Center	The Big Questions of Science! Starting with the End in Mind Using Understanding by Design (p. 104)
2:00–3:30 PM	9–12	202B, Conv. Center	AP and IB Science with Vernier (p. 104)
2:00–3:30 PM	3–12	111A/B, Conv. Center	Teaching Science with Foldables (p. 104)
2:00–3:30 PM	4–8	113C, Conv. Center	If You Can’t Stand the Pressure, Get Out of the Classroom (p. 104)
2:00–3:30 PM	M–H	404, Marriott	LHS Pathway Session: Teaching About Trade-offs: How Science Can Inform the Decision-making Process (p. 102)

## Schedule at a Glance Integrated/General Science, cont.

2:00–4:00 PM	E	411/412, Marriott	EDC and TERC Pathway Session: The Art of Talk and the Power of the Circle (p. 106)
3:00–4:30 PM	K–6	108B, Conv. Center	FOSS and DSM Kit Refurbishment/Material Management (p. 107)
3:30–4:00 PM	G	Hall D/10, Conv. Center	Using Social Media Tools to Support Earth Science Education (p. 107)
3:30–4:30 PM	M–H/I	Franklin 7, Marriott	Using Art to Teach Ocean Science Topics to Formal and Informal Audiences (p. 103)
3:30–4:30 PM	G	201C, Conv. Center	Robert H. Carleton Lecture: Innovations in Teaching and Learning That Prepare Students for World-Class Opportunities in Science, Technology, Engineering, and Mathematics (STEM) Careers (p. 108)
3:30–4:30 PM	G	Grand Salon K, Marriott	NSTA ESP Symposium II: Inquiry: The Key to Exemplary Science (p.108)
3:30–4:30 PM	E–H	307, Conv. Center	NSTA Avenue Session: SciLinks: Using the Online Assignment Tool (p. 109)
3:30–4:30 PM	M–H/S	Hall D/7, Conv. Center	Add It Up! Metacognitive Strategies + Good Science Curricula = Increased Student Learning! (p. 109)
3:30–4:30 PM	M–H/I	302/303, Marriott	Science Map Making for Everyone (p. 112)
3:30–4:30 PM	P–M	Hall D/22, Conv. Center	The Outdoor Class Study Area—An Integrated Learning Experience (p. 115)
3:30–4:30 PM	E	Washington A, Loews	CESI Session: Oh, the Science You Can Teach: Strategies That Strengthen Science Through Literacy (p. 111)
3:30–4:00 PM	P–M	Hall D/17, Conv. Center	Beyond Penguins and Polar Bears, and NSF-IPY 'zine (p. 110)
3:30–4:30 PM	G	Hall D/27, Conv. Center	Building Networks of Teacher Leaders in Rural North Carolina Communities (p. 110)
3:30–4:30 PM	E	Hall D/15, Conv. Center	Enhancing Science Vocabulary (p. 109)
3:30–4:30 PM	H	Regency C2, Loews	Helping Exceptional Students Thrive, Not Just Survive, in the Secondary Science Class (p. 111)
4:00–4:30 PM	P–E	Hall D/17, Conv. Center	Bird-watching Inquiries Build Literacy Skills in Young Children (p. 110)
3:30–4:30 PM	G	Hall D/26, Conv. Center	Inquiry: Practical Advice for the Classroom (p. 115)
3:30–4:30 PM	G	Hall D/25, Conv. Center	Teaching About Scientific Research and the Process of Science (p. 110)
3:30–4:30 PM	M	Hall D/20, Conv. Center	Using Fiction to Introduce and Reinforce Science Content in the Middle Grades (p. 110)
3:30–4:30 PM	M	Hall D/21, Conv. Center	Engaging Hands-On Inquiry Activities (p. 115)
3:30–4:30 PM	G	Hall D/28, Conv. Center	Connecting the Dots: Using Elluminate and Video Conferencing to Stay Connected to Rural Teachers (p. 115)
3:30–4:30 PM	E	Hall D/11, Conv. Center	Project-Based Learning: Reviving and Fostering the Naturalist in the Urban Child (p. 115)
3:30–4:30 PM	E–H	Commonwealth C, Loews	Extreme Makeover: Science Edition! (p. 115)
3:30–4:30 PM	S	Regency C1, Loews	Science Staff Development Training Program (p. 111)
3:30–4:30 PM	G	Hall D/29, Conv. Center	Using Humor to Enhance Scientific Literacy (p. 110)
3:30–4:30 PM	M–C/S	Washington B, Loews	Collaborative Coaching and Learning in Science: A Strand of the Boston Science Partnership (p. 112)
3:30–4:30 PM	E–M	Hall D/23, Conv. Center	The Broken Water Cycle (p. 115)
3:30–4:30 PM	M–H	305/306, Marriott	Say It with Animations (p. 112)
3:30–4:30 PM	I	407/408, Marriott	FHL Pathway Session: Local Knowledge—Addressing the Gap Between What Students Already Know and What Gets Taught (p. 112)
3:30–4:30 PM	M–H	404, Marriott	LHS Pathway Session: Using Issues as a Context for Teaching Science Content and Inquiry (p. 112)
3:30–4:30 PM	C	Grand Salon G, Marriott	Student Chapter Session: Assisting Preservice Teachers in Presenting at NSTA and Other Science Conferences: An NSTA Student Chapter Roundtable (p. 113)
3:30–4:30 PM	E/I	Hall D/14, Conv. Center	SOAR into Inquiry (p. 115)
3:30–4:30 PM	G	Hall D/30, Conv. Center	Science Classrooms That Work for English Learner Students (p. 110)
3:30–4:30 PM	G	Tubman, Loews	ASTE Session: EQUIPPing Teachers to Achieve Meaningful Inquiry-based Teaching and Learning (p. 111)
3:30–4:30 PM	G	Anthony, Loews	CSSS Session: Inquiry and Good Science Instruction: Are They the Same? (p. 111)
3:30–4:30 PM	M–H	Freedom H, Sheraton	Scale the Universe (p. 116)
3:30–4:30 PM	G	Congress C, Loews	NSELA Session: NSELA Working Groups: Network with Science Education Leaders (p. 111)
3:30–4:30 PM	M	307, Marriott	Middle School Activities Focused on Addressing Gender Equity (p. 112)
3:30–4:30 PM	G	406, Marriott	Join an NSTA Journal Review Panel (p. 112)
3:30–5:00 PM	M–H	414/415, Marriott	BSCS Pathway Session: Using Science Notebooks to Develop Conceptual Understanding in Science (p. 117)

## Schedule at a Glance Integrated/General Science, cont.

3:30–5:00 PM	G	401/402, Marriott	McREL Pathway Session: Designing Effective Science Lessons—Helping Students Think Scientifically (p. 117)
4:00–5:15 PM	7–10	109A/B, Conv. Center	Inquiry Investigations™ Biotechnology Curriculum Modules and Kits (p. 118)
4:00–5:30 PM	5–12	108A, Conv. Center	Chemistry and the Atom: Fun with the Atom-building Game (p. 119)
4:00–5:30 PM	G	113C, Conv. Center	The Private Eye: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 119)
4:00–5:30 PM	6–12	Hall D/4, Conv. Center	Get Smart About Biotechnology (p. 120)
4:00–5:30 PM	3–12	111A/B, Conv. Center	Teaching Science with Foldables (p. 119)
4:00–5:30 PM	9–12	105A/B, Conv. Center	Living Large (p. 118)
4:00–5:30 PM	6–9	203A, Conv. Center	Incorporating Social Networking and Gaming in the Classroom (p. 119)
4:00–6:00 PM	G	Grand Salon E/F, Marriott	Informal Science Day Session: Informal Science Education Share-a-Thon (p. 121)
5:30–6:00 PM	E/S	Washington B, Loews	The Curriculum Umbrella: Asking Big Questions (p. 124)
5:00–6:00 PM	M–H	Regency A, Loews	Using Science Notebooks and Activities in a Ninth-Grade Inner City Classroom (p. 128)
5:00–6:00 PM	E–M	Hall D/23, Conv. Center	A Scientific Path from Geometry to Geography (p. 127)
5:00–6:00 PM	G	Anthony, Loews	CSSS Session: Go Green with GIS (p. 123)
5:00–6:00 PM	M–H	Regency C2, Loews	Building Bridges (p. 124)
5:00–6:00 PM	G	Hall D/17, Conv. Center	Linking Literature and Science: A “Hook” for All Ages (p. 127)
5:00–6:00 PM	M–H	305/306, Marriott	Sci-Casting/Podcasting in the Science Classroom (p. 124)
5:00–6:00 PM	M–H/S	Regency C1, Loews	Professional Development and Improved Instruction Through Lesson Study (p. 124)
5:00–6:00 PM	E	Hall D/16, Conv. Center	You Teach the Science, Now Add the Engineering (p. 127)
5:00–6:00 PM	M–H	Independence B, Sheraton	Meteorites Decoded: A Sideways Take on Asteroids, Comets, and the Wonderful World of the “Poor Man’s Space Probe” (p. 126)
5:00–5:30 PM	E	Hall D/14, Conv. Center	The Standards-based Science Fair: A New Tool for Full Inquiry (p. 122)
5:00–6:00 PM	M–H/I	Commonwealth D, Loews	Engage, Explore, and Create: Using Student-generated Content to Teach Science (p. 128)
5:00–6:00 PM	G	Congress C, Loews	NSELA Session: Middle School Science Teachers: Providing What They Need (p. 124)
5:00–6:00 PM	E	Hall D/5, Conv. Center	Lessons Learned from Implementing Engineering Learning Activities in an Urban Elementary Science Classroom (p. 122)
5:00–6:00 PM	G	Hall D/29, Conv. Center	Super Science for Special Education Teachers: An Integrated Professional Learning Community (p. 123)
5:00–6:00 PM	E–M	Hall D/6, Conv. Center	Reading and Writing Science with Fun Polymer Activities and Children’s Literature (p. 126)
5:00–6:00 PM	M–H	Freedom H, Sheraton	Integrating the Science and History of Valley Forge National Park (p. 129)
5:00–6:00 PM	M	Hall D/21, Conv. Center	Stories Without Words (p. 127)
5:00–6:00 PM	G	Grand Salon D, Marriott	NSTA Press Session: Classroom Community-building 21st-Century Style—Blogs, Wikis, and Video (p. 125)
5:00–6:00 PM	E–H	Hall D/11, Conv. Center	Differentiation in the Science Classroom: Tips and Strategies That Work (p. 122)
5:00–6:00 PM	G	Hall D/20, Conv. Center	Using Videoconferencing to Connect Students to Community Science: A “Real” Virtual Field Trip (p. 122)
5:00–6:00 PM	E	Hall D/15, Conv. Center	MicroExplorers: Going Beyond Small with Inquiry-based Microscopy for Elementary School Students (p. 127)
5:30–6:00 PM	E	Hall D/14, Conv. Center	Creating Eager Scientists Through School Science Clubs (p. 122)
5:00–6:00 PM	M–H	Congress B, Loews	Standards-based Assessments (p. 123)
5:00–6:00 PM	M–H	Washington A, Loews	Need a New Medium for Performance Assessments? How About Museum Kiosks? (p. 128)
5:00–5:30 PM	C	Congress A, Loews	Creating Online Blended Courses a Nibble at a Time (p. 123)
5:00–6:00 PM	G	Hall D/27, Conv. Center	Beyond the Bells and Whistles: Online Resources for Deepening STEM Literacy (p.123 )
5:00–6:00 PM	G	Hall D/30, Conv. Center	Anchoring Common Writing Assignments in the Content of District-approved Science Curriculum Materials (p. 123)
5:00–6:00 PM	M–H	302/303, Marriott	Connecting Content to the Real World Using Public Television and Radio (p. 124)
5:30–6:00 PM	H–C	Congress A, Loews	Can Social Networking Sites Improve Your Class? (p. 123)
5:00–6:00 PM	P–E	Hall D/19, Conv. Center	Writing Outdoors (p. 127)

## Schedule at a Glance Integrated/General Science, cont.

5:30–6:00 PM	M–H	Grand Salon L, Marriott	Making Science Accessible to English Language Learners: Instructional Strategies for 6–12 Teachers (p. 126)
5:00–5:30 PM	E/S	Washington B, Loews	Using Science Notebooks to Integrate Math and Science (p. 124)
5:00–6:00 PM	G	Hall D/22, Conv. Center	Science Inquiry and Computer-based Manipulatives: Improving Student Understanding and Achievement (p. 122)
5:00–6:00 PM	G	Hall D/25, Conv. Center	Using Innovation to Develop an Understanding and Appreciation of Science, Technology and Societal Needs (p. 122)
5:00–7:00 PM	E	411/412, Marriott	EDC Pathway Session: Writing in Science Using Firsthand Data (p. 129)
6:00 PM–12 Mid	G	Commonwealth C, Loews	A Video Showcase of Inspiring Award-winning Teachers and Their Engaging Courses, Part II (p. 131)

## Physics/Physical Science

8:00–9:00 AM	E–H	Franklin 5, Marriott	Identifying Critical Causes of Gaps Related to Kids in Poverty (p. 28)
8:00–9:00 AM	G	Franklin 6, Marriott	Enhancing Young Children’s Comprehension of Science with Hands-On Science Teaching (p. 22)
8:00–9:00 AM	P–M	Grand Salon D, Marriott	NSTA Press Session: Stop Faking It! Finally Understand LIGHT AND SOUND So You Can Teach It (p. 28)
8:00–9:00 AM	E–M/I	Grand Salon J, Marriott	Teaching “Density”: An Inquiry-based Approach for Conceptual Understanding (p. 28)
8:00–9:00 AM	C	Washington A, Loews	ASTE Session: Learning Physics in the Real World (p. 20)
8:00–9:30 AM	9–C	202A, Conv. Center	Physics with Vernier (p. 34)
8:30–9:00 AM	H–C	Regency C2, Loews	Enhancing Introductory Physics with Space Studies Topics (p. 38)
9:30–10:30 AM	E	Hall D/9, Conv. Center	Paper Engineering: Making 3-D Pop-Up Mechanisms (p. 48)
9:30–10:30 AM	E–H	Franklin 6, Marriott	Your School’s FlexCam Belongs in the Physics Lab (p. 44)
9:30–10:30 AM	6–12	113A, Conv. Center	Tough Topics in Physics and Physical Science: Motion (p. 51)
9:30–10:30 AM	7–8	201A, Conv. Center	InterActions in Physical Science—Newly Revised (p. 51)
9:30–10:30 AM	G	305/306, Marriott	Testing Is Detestable and Grading Is Degrading (p. 44)
10:00–11:30 AM	6–12	110A/B, Conv. Center	AeroLab (p. 54)
10:00–11:30 AM	7–C	202B, Conv. Center	Engineering with Vernier (p. 55)
11:00 AM–12 Noon	9–12	201A, Conv. Center	Teenagers, Cars, and Driving...How to Get High School Students Actively Involved in Physical Science (p. 70)
11:00 AM–12 Noon	I	Grand Salon E/F, Marriott	Informal Science Day Session: Designing Hands-On Engineering Activities with Creative, Reusable, Affordable Products (p. 66)
11:00 AM–12 Noon	H/S	Washington A, Loews	ASTE Session: Science Teaching as a Profession: Why It Isn’t, How It Could Be (p. 61)
11:00 AM–12 Noon	H–C	Regency C2, Loews	Conceptual Confusions in Teaching Modern Physics (p. 61)
11:00 AM–12 Noon	E–M	Hall D/19, Conv. Center	Activities, Materials, and Resources That Teach Science (p. 65)
11:00–11:30 AM	H	Franklin 7, Marriott	The Physics of Driving Safety: How We Use Driving as a Real-Life Focus for Our Motion Unit (p. 62)
11:00 AM–12 Noon	P–M	Grand Salon D, Marriott	NSTA Press Session: Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It (p. 66)
11:30 AM–12 Noon	M–H	Franklin 7, Marriott	Physics and the Energy Crisis—Authentic Learning Experiences in a High School Physics Classroom (p. 62)
11:00 AM–12 Noon	M–C	Franklin 6, Marriott	Project-based Learning to Increase Student Interest in Engineering (p. 62)
11:00 AM–12 Noon	M–H	Grand Salon J, Marriott	Making Flexbooks Using CK12.org Software (p. 67)
11:00 AM–12 Noon	M–C	Franklin 5, Marriott	Physics Near Zero (p. 66)
12 Noon–1:30 PM	5–12	113C, Conv. Center	Get Charged Up with Educational Innovations! (p. 72)
12 Noon–1:30 PM	9–12	113B, Conv. Center	Increasing Physics Enrollments (p. 72)
12 Noon–1:30 PM	5–12	108A, Conv. Center	Optics with Light and Color: Bright Ideas—Our New Take On an Old Favorite (p. 72)
12:30–1:00 PM	H	Franklin 7, Marriott	Amending Student Mathematics Proficiency Concurrent with the Implementation of a Physics First Course in an Urban Setting (p. 76)



## Schedule at a Glance Physics/Physical Science, cont.

12:30–1:30 PM	E	Hall D/5, Conv. Center	Sound Science: Learning About Sound and the Nature of Science Through Inquiry (p. 82)
12:30–1:30 PM	G	Franklin 6, Marriott	A Scientific Point-of-View Program (p. 81)
12:30–1:30 PM	E–H	Franklin 5, Marriott	Let’s Get Physical! (p. 84)
12:30–1:30 PM	6–12	113A, Conv. Center	Tough Topics in Physics and Physical Science: Circuits (p. 86)
12:30–1:30 PM	M–H	Grand Salon J, Marriott	Everyone Knows That Heavier Things Fall First (p. 84)
2:00–3:00 PM	H	405, Marriott	Skills Pathway Session: Active Physics (p. 94)
2:00–3:00 PM	E	Washington A, Loews	CESI Session: Let Animals Teach Your Students Science (p. 99)
2:00–3:00 PM	E–M/I	Hall D/19, Conv. Center	Simple Machines Made Easy! (p. 98)
2:00–2:30 PM	M–H/I	Franklin 7, Marriott	Using NASA Computer Animations of the EM Spectrum to teach Seventh Graders (p. 95)
2:00–3:00 PM	P–E	Hall D/9, Conv. Center	The Magnet Lab: Magnets Are What We Do! (Grades K–6) (p. 98)
2:00–3:00 PM	M–C	Franklin 6, Marriott	Near-Space Engineering (p. 95)
2:00–3:00 PM	E–H	Grand Salon J, Marriott	Blinky Bots and New Age Graffiti (p. 100)
2:30–3:00 PM	M–H/I	Franklin 7, Marriott	“Seeing” the Light: Using Ground- and Space-based Telescope Data to Support Understanding of the Electromagnetic Spectrum (p. 95)
2:00–3:00 PM	H–C/I	Regency C2, Loews	Frontiers of Physics for Mere Mortals (p. 94)
2:00–3:00 PM	G	Franklin 5, Marriott	Parents as Science Teachers? Absolutely! (p. 100)
2:00–3:30 PM	6–8	203A, Conv. Center	The JASON Project (p. 104)
2:00–3:30 PM	5–12	108A, Conv. Center	Race into Physics with the CPO Science Energy Car (p. 103)
2:00–3:30 PM	4–10	Hall D/4, Conv. Center	Teaching Physics with Roller Coasters: A Hands-On Approach (p. 105)
2:00–3:30 PM	3–5	201B, Conv. Center	Energy Works! (p. 104)
3:30–4:30 PM	K–5	113A, Conv. Center	Tough Topics in Elementary School Science: What Is a Circuit? (p. 117)
3:30–4:30 PM	H	Independence A, Sheraton	NSTA High School Physics Share Session (p. 114)
3:30–4:30 PM	E–H	Commonwealth D, Loews	AMSE Session: Integrating Physics in the Middle School Curriculum (p. 116)
3:30–4:30 PM	M	Hall D/19, Conv. Center	Bounce and Bend: Reflection and Refraction of Light (p. 110)
3:30–4:30 PM	G	Franklin 6, Marriott	Having Students Develop Collaborative Wiki Books (p. 113)
3:30–4:30 PM	I	Franklin 5, Marriott	Exploring Newton’s Laws with NASA and Common Items (p. 116)
4:00–5:30 PM	9–C	110A/B, Conv. Center	Experience a Digital Physics Curriculum (p. 119)
4:00–5:30 PM	3–6	103C, Conv. Center	A World In Motion: The Elementary Design Experience (p. 118)
4:00–5:30 PM	7–12	104A/B, Conv. Center	Getting’ Funky with the Fundamentals of Physics (p. 118)
5:00–6:00 PM	M–H	Franklin 6, Marriott	Using Inquiry and Modeling to Study Electrical Resistance (p. 125)
5:00–6:00 PM	P–M	Hall D/7, Conv. Center	Keeping Things in Motion: Using Newton’s Laws to Understand the Universe (p. 126)
5:00–6:00 PM	E	Hall D/9, Conv. Center	Light! Sound! Action! (p. 127)
5:00–6:00 PM	H–C	Commonwealth B, Loews	A Coherent Approach to Energy in High School Physics (p. 127)
5:00–6:00 PM	E–H	Grand Salon J, Marriott	Teaching Simple Machines (Pulleys) Through LEGO™ Engineering Design (p. 128)
5:00–6:00 PM	H	Franklin 5, Marriott	Teaching Core Physics Concepts Through the Lens of Seismology (p. 128)
5:00–6:30 PM	5–12	114/Aud., Conv. Center	PASCO Presents the Eighth-Annual Just Physics Evening (p. 129)

# Index of Participants

---

## A

Abbitt, Jason T. 123  
Abbruzzese, Donna 122  
Abelard, Marc 28  
Abel, Ted 80  
Abell, Sandra K. 65  
Adair, Amy L. 26  
Adams, Ellen L. 41  
Adams, Katharine L. 41  
Adkins, Jeff 39, 51  
Albert, Jennifer 115  
Alcazar-Roman, Daniel 20  
Alkhalidi, Sufian 90  
Allan, Elizabeth 59  
Allan, Richard 54  
Allen, Tiffany 92  
Ambruster, Carice L. 66  
Amicucci, Christine 77  
Amsel, Sheri I. 109  
Anderson, Jordan A. 18  
Anderson, Karen L. 115  
Anderson, Mike 50  
Anderson, Ruth 87  
Andrews, Carmen M. 77  
Andrews, Sherri 39, 88  
Ansberry, Karen 74  
Ansley, Mary Jane 129  
Antalis, Sandra R. 20  
Arnaudin, Mary 110  
Aronin, Sara 92  
Artis, Sharnnia 39  
Asija, Pal 18  
Atkinson, Jennifer L. 88  
Atkinson, Linda 93, 111  
Atwater, Mary M. 88  
Avery, Leanne M. 112

## B

Backman, Dana 84  
Badders, Bill 61  
Baffert, Anne 61  
Bailey, Bambi L. 23, 46, 63, 81  
Baird, Kate A. 46, 63  
Baldwin, Mark 70  
Balicki, Scott F. 46  
Baltay, Virginia 69  
Bane, James 109  
Barber, Ray 86, 122  
Barizo, Ophelia 86

Barker, Jill M. 125  
Barnes, Desiree 59  
Barnes-Johnson, Joy M. 92  
Barnett, Michael 128  
Barnett, Mike 109  
Bartirromo, Margo 59  
Bartos, Stephen A. 128  
Bartus, Greg 129  
Batoff, Mitchell E. 131  
Beall, Lydia 66  
Beardsley, Paul 105  
Bednarski, Marsha 58  
Beier, David P. 44  
Beimer, Jennifer D. 61  
Benenson, Gary 48  
Benoit, Carl 34  
Benton, Erik 54, 72  
Benware, Matty-Matt 118  
Benz, Richard 18  
Berke, Sarah 96, 116  
Bernhardt, Anita 93  
Berquist, B.J. 114  
Bertino, Anthony 32, 54  
Bertino, Patricia N. 32, 54  
Beyt, Linda 126  
Billups, Carla 106  
Bilotta, Carl B. 42  
Bingman, Ken 38, 90  
Binns, Ian C. 81  
Blanchard, Margaret R. 115  
Blaney, Lynn 24  
Bliese, Carol 83  
Blount, Pat 95  
Bolick, Margaret E. 83  
Bollinge, G. Kip 108  
Bonneau, Jacklyn 66  
Borman, Gregory 17  
Boustead, Barbara Mayes 96  
Bowling, Kristi G. 113  
Bowman, Lisa 30, 53, 102, 118  
Bowser, Samuel 68  
Boyette, Eddy 56, 73  
Bracken, Jeff 56  
Bradstreet, David 70, 106  
Brennan, Carol A. 115, 127  
Bretl, Mark 119  
Bricker, Patricia 106  
Brock, David L. 46  
Brokaw, Ann I. 71

Broussard, Chad 126  
Brown, Anica 50  
Brown, Emily 121  
Brown, Jennifer A. 93  
Brown, Kirk 31, 54, 88, 107  
Brown, Scott 16  
Brown, Tammy C. 16  
Brown, Tyson 109  
Bruozas, Meridith 95  
Bryson, Linda 109  
Bryson, Little Stevie 32  
Buckey, Susan 63, 121  
Bunch, Kyle 60  
Burke, Kathaleen 22, 70  
Butcher, Ann 116  
Butcher, Virginia J. 95  
Byrne, Ken 72

## C

Cacciatore, Kristen L. 20, 60  
Cain, Dennis R. 51  
Cajigal, Aris Reynold 68  
Camphire, Geoff 50  
Capobianco, Brenda M. 122  
Carpi, Anthony 110  
Carraway-Stage, Virginia 17  
Cartwright, Tina J. 84  
Cate, Jean 60  
Chancellor, April 98, 121  
Chandrasekhar, Meera 110, 125  
Chang, Helen 46, 67  
Chang, Peter P. 22  
Chapman, Louise 101  
Chapman, Susan 69  
Chesme, Kathleen 41  
Chick, Perrin 113  
Childress, Jennifer L. 47  
Chirdon, Katie 113  
Chirikjian, Jack 32  
Chmiel, Marjee 119  
Chokouanga, Virginie L. 109  
Cho, Seonhee 126  
Chowning, Jeanne T. 49, 116  
Chrumbach, Monica 70  
Chyson, Greg 71  
Ciuffreda, Brian J. 82  
Clarion, Geoffrey 30, 51, 69, 86, 102, 117

Clark, Gordon D. 131  
Clary, Renee M. 16  
Clay, Susan 110  
Cleland, Donna 109  
Cleves, Fernando 18  
Cline, Amy H. 113  
Cloud, Cory 100  
Coburn, Mary Pat 98  
Coker, Chris S. 50  
Colbern, Deborah L. 80  
Cole, Gerri L. 68  
Coletta, Susan E. 16  
Collins, Allen G. 28  
Collins, Jennifer A. 28  
Collins, Mike 34  
Colvard, Mary 103, 118  
Conover, Margaret 50  
Cook, Melissa D. 64  
Cooper, Mimi 38, 90  
Cooper, Sharon K. 97, 107  
Coulter, Bob 80  
Cowan, essica M. 58  
Cox, Becky J. 50, 85  
Crane, Myles 55  
Crew, Caroline 59  
Crissman, Sally 70  
Crittenden, Conni 46, 67  
Cronauer, Dawn L. 80  
Crossley, Eric V. 40, 86  
Cuellar, Melissa J. 81, 95  
Cuny, Jan 77  
Cupero, Anne 20  
Curley, Jonathan 121  
Curry, David W. 109  
Cusato, Susan H. 76  
Custer, Tom 117

## D

Dalton, Chris R. 82  
Daly, Michele 85  
Damm, Aleta 48  
Dann, James H. 67  
Dann, James J. 67  
Dassler, Troy 127  
Daugherty, Ellyn 103  
David, Barbara Sprungman 97  
Davis, Antonia 122  
Davis, Michael 81  
Davis, Shirley Sung 99

- Day, Jeannelle B. 111  
 Day, Kim 42, 78  
 de Angelis, Marie 97  
 de Groot, Robert M. 106  
 DeBoer, George E. 123  
 DeBoer, Karen 65  
 DeCristofano, Carolyn 64  
 DeGiulio, Patricia 66  
 Dembek, Bettina 113  
 DeMoss, Gretchen Stahmer 104  
 Dempsey, Deborah 64  
 Dempsey, Nan 42  
 Dempsey, Sabriya 84  
 Denard, Kimberly 40  
 Denkinger, Blakeley 38  
 DeRosa, Donald 84  
 Desouza, Josephine Shireen 42  
 DeSouza-Fennelly, Gioya Anita 97  
 DeVore, Edna K. 85, 100  
 DeVore-Wedding, Bev 85  
 DeWein, Kathy 124  
 Dezotell, Dana Maria 24  
 Diener, Lynn M. 18  
 Dietrich, Nanette I. 79  
 Dipinto, Kaki 127  
 Dipinto, Vito M. 127  
 Dixon, Michele J. 80  
 Doherty, Jennifer H. 84  
 Donahue, Kerry 96, 116  
 Dong, Yu Ren 76  
 Doran, Rodney 99  
 Dorrington, Adriane E.L. 58  
 Dorsey, Chad W. 22, 96  
 Dotti, Kristen R. 28  
 Doty, David 105  
 Dowling, Jeffrey 72  
 Dragon, Christina N. 92  
 Dreon, Oliver 79  
 Drobnes, Emilie 29, 68, 101, 116  
 Druger, Marvin 93  
 Duffrin, Melani 17  
 Duke, Nell 34  
 Dukerich, Larry 115, 127  
 Duncan, Sarah 124  
 Durmowicz, Meredith C. 62  
 Dutta, Kaushik 93  
 Dvorak, Alexander 128  
 Dworken, Ben 50  
 Dyasi, Hubert M. 99  
 Dyasi, Rebecca E. 99  
 Dykes, Jess E. 127
- E**  
 Eberle, Francis Q. 89  
 Eddleman, Scott 119  
 Eddy, Peggy 85  
 Edginton, Jennifer M. 84, 98  
 Edmondson, Elizabeth 22  
 Edwards, Richmond 28  
 Eisenkraft, Arthur 18, 94  
 Eldridge, Patsy 32, 103  
 Ellsworth, Mary 20  
 Elwess, Nancy L. 112  
 Engel, Joann 114  
 Engemann, Joe 99  
 Enloe, Hillary 61, 112  
 Erdmann, Deanne B. 62, 111  
 Erixon, Jeff 95  
 Ermer, Jason 64  
 Ervin, Jeremy 96  
 Ervin, Tom 85  
 Escalada, Lawrence 64  
 Escudero, Edmund J. 49  
 Estes, Fred 28  
 Evans, Yonoco 63, 100  
 Ewart, Tess 112
- F**  
 Fabic, Ron 50  
 Fabick, Ron 68, 85  
 Falk, John 63  
 Fayen, Anne Marie 121  
 Feather, Ralph 55, 72  
 Feather, Sandy 55, 72  
 Feder, Michael 121  
 Fedors, John W. 65  
 Fee, Jennifer 46, 78, 114  
 Feinberg, Glen 91  
 Feldman, Allan 20  
 Ferguson, Camille 100  
 Flores, Casandra A. 122  
 Flores, René 126  
 Flynn, Suzanne 106  
 Foley, Heather 73  
 Frechette, Mark 59  
 Frederick, Linda 131  
 Freeman, Jason 96  
 Freeman, Natalie 115  
 Fries-Gaither, Jessica 51, 92  
 Froschauer, Linda 67  
 Fuchs, Bruce 89  
 Fuld, Janice 121  
 Fulk-Bringman, Sherry 69  
 Fulwiler, Betsy Rupp 36  
 Furman, Tanya 24  
 Futej, Barbara 129
- G**  
 Gagnon, Steve 65  
 Gallagher-Bolos, Joan A. 125  
 Garay, Lollie 68, 116, 129  
 Garcia, Leigh Ann 35  
 Garcia, Monica 20  
 Gardiner, Lisa 50, 101  
 Garland, Vicki 26  
 Gaylord, Tyna 60  
 Gee, Donna 124  
 Geiken, Rosemary 64  
 Gelle, Genevieve 122  
 Gendreau, Harvey 111  
 Gettig, Anthony M. 78  
 Getzandanner, Dawn 48  
 Gibbard, William 59  
 Gibson, Kyle 107  
 Gielow, Julie 61  
 Gilbert, Dan 95  
 Gilchrist, Michael R. 93  
 Gilfeather, Dana 115  
 Gill, Patricia 86  
 Gill, Suzanne 79, 112, 123  
 Gillham, Doug 73  
 Gipson, Michael 18  
 Gleason, Joyce M. 94  
 Glogowski, Walter G. 68  
 Gluck, Joel 124  
 Gluck, Stuart M. 61  
 Godfrey, Maurice 48  
 Goldenberg, Lauren 44  
 Good, Jessie A. 46  
 Goodwin, Debbie 23, 75  
 Gorman, Susan T. 62  
 Gould, Alan 100, 107  
 Govett, Aimee 20  
 Graeber, Wolfgang 94  
 Graika, Tom 30, 53, 88  
 Grallo, Richard 42  
 Grazier, Kevin 29  
 Green, David L. 24  
 Gregory, Eileen 81, 95  
 Gressler, Marisa 114  
 Griffin, Norma J. 78  
 Grillo-Hill, Andrew 125  
 Grisillo, Anthony E. 59  
 Griswold, Alex 94  
 Griswold, Joan 49  
 Grogan, Marian 24, 93, 121  
 Gruber, Stacey 59  
 Gruhn, Kelly 127  
 Guertin, Laura 24, 50  
 Guevara, Eduardo 17  
 Guidry, Paula 126  
 Gunther, Michele LeBlanc 59  
 Gustafson, Brenda J. 17
- H**  
 Haase, Deb 44  
 Hall, Sue E. 115  
 Ham, Kyle 121  
 Hamilton, Eric 121  
 Hammonds, Michelle 17  
 Haney, Steve 122  
 Hanley, Carol D. 18  
 Hans, Paul 96  
 Hansen, Deborah 92  
 Hanuscin, Deborah L. 23, 46, 115  
 Harding, Russ 129  
 Harman, Pamela 26, 50, 68, 85, 100  
 Harrick, Holly 108  
 Harris, Cornelia B. 115  
 Harris, Deborah N. 97  
 Harris, Michael F. 76  
 Harris, Michelle C. 50, 68, 85  
 Harris, Sunset 50  
 Harris, Tina 108  
 Hartman, Melissa 95  
 Hartney, David 112  
 Hartung, Karen 127  
 Hatheway, Becca 101  
 Haydock, Peter 104  
 Hazzard, Ed 94  
 Hehr, Lynne H. 85

## Index of Participants

---

- Heinz, Michael B. 60  
Heitzman, Cheryl L. 83  
Heller-Winokur, Martha 106, 129  
Hemler, Deb 50  
Hemp, Bruce H. 51  
Hendricks, Curtis W. 113  
Henry, Laurie 18  
Herman, Tim 65  
Hermann, Ronald S. 52  
Herrington, Jaymee 78  
Herrold, Ardis 50, 85  
Hershberger, Kimber A. 109  
Hess, Stacy 126  
Hester, Melanie 100  
Hewitt, Paul 72  
Hickle, Christine 78  
Hilgendorff, Todd B. 94  
Hill, April 48  
Hill, Charles Judson 61  
Hill, Denise 83  
Hill, Steele W. 85  
Hinckley, Thomas R. 99  
Hitomi, Stan 31, 54, 88, 107  
Hlawaty, Heide 42  
Hogan, Janet J. 84  
Hoke, Franklin 17  
Hollar, Kathryn 28  
Holliday, Gary M. 128  
Holm, Joseph 109  
Holmes, Jay 129  
Holmes, Julie A. 83  
Holmquist, Dan 55, 72  
Holt, Susan 26, 49  
Holzer, Margaret A. 69  
Holzer, Missy 15  
Holzman, Anne 62  
Hopkinson, Peter 114  
Horejsi, Martin G. 126  
Horne, Christopher R. 48  
Horstmeyer, Kathleen B. 67  
Horwitz, Jane 112  
Hovland, Jana 17  
Howarth, John 44, 102, 112  
Hsu, Tom 56, 73  
Hubacz, Frank 18  
Hubenthal, Michael 85, 128  
Hudnell, H. Kenneth 90  
Huff, Kenneth L. 81  
Huffman, Louise T. 50  
Hunn, Diana M. 110  
Hunt, Amy F. 81  
Hunt, Catherine 100  
Hunt, John D. 46, 100  
Hunt, Maureen 54  
Huynh-Dinh, Tien 121
- I**  
Ibanez, Atziri 116, 125  
Ireland, Kathleen 86
- J**  
Jabens, Melissa 96  
Jackson, Alicia Y. 111  
Jackson, Julie K. 40  
Jackson, Mia 65  
Jacobs, Carolyn 68, 114  
Jacobs, Maggie 125  
Jacobsen, Erica K. 94, 127  
Jaeger, Michaelle 85  
Janis 20  
Jeanpierre, Bobby 116  
Jefferson, Robert T. 124  
Jenoure, Sandra C. 17  
Jensen, Mary Lynn 70, 86, 102  
Jerome, Janice 47  
Jewell, Beth 30  
Jewell, Bill 119  
Johnson, Fred D. 108  
Johnson, Gwendolyn 123  
Johnson, Matthew A. 43  
Johnson, Roberta M. 50, 68, 85  
Johnson, Robyn 104  
Jones, Carol L. 26, 123  
Jones, Melvina 60  
Juarez, Cindy 80
- K**  
Kailasa, Aruna 100  
Karl, Colleen M. 110  
Katsumi, Margaret Thomsen 73  
Katz, Darin 91  
Katzmarek, JoAnne M. 80  
Katz, Phyllis 121  
Kaufmann, Janey 93, 111  
Kazmerski, Victoria A. 47  
Kecskes, Andrea 64  
Keil, Jessica 121  
Kelley, Suzanne 80  
Kelly, Susan M. 95  
Kennedy, Elizabeth 30, 102  
Kennedy, Teresa 24, 68  
Kerski, Joseph 71, 103  
Kessler, Lori 31  
Ketelhut, Diane Jass 43  
Kim, Sarah 93  
King, Alona M. 44  
King, Bob 68, 97  
King, Daniel B. 114  
King, Kenneth P. 94  
King, Tina 68, 97  
Kinzler, Ro 123  
Kirby, Lynn 64  
Kisiel, James 63  
Klein, William J. 106  
Klemonsky, Nicole 115  
Klisch, Yvonne 24  
Kloecker, Jane R. 128  
Klosterman, Michelle L. 98  
Knight, Barbara 112  
Knoell, Donna L. 106  
Knox, Bennett 22  
Koch, Janice 74, 123  
Koch, Louisa 89  
Koch, Pamela A. 48  
Koehl, Laura A. 44  
Koehn, Ted 101  
Koepsell, Judy 96  
Kohl, Laurel L. 48  
Kohli, Kristen 46  
Koker, Mark 36, 105, 120  
Kola, Christine 50  
Koller, Herb 103  
Kolodner, Janet 22  
Konicek-Moran, Richard 100  
Koo, Ben 125  
Korostoff, Gail 91  
Kosztin, Dorina 125  
Kowrach, Nicole 98, 121  
Krank, Michele 98  
Krause, Faith 124  
Kreeger, Karen 17  
Krejcarek, Dana 46  
Kruse, Rebecca 80, 117  
Kumar, Rashmi 42  
Kur, Judi 109
- L**  
Laboy-Rush, Diana 62  
Labriole, Michaela 121  
LaBryer, Allen R. 82  
Lach, Christina 113  
Lach, Michael 89  
Lakehomer, Julie 17, 97  
Landis, Carol 68, 110  
Landsberg, Randall H. 68  
Lang, Mozell P. 123  
Lappe, Matt 118  
Laprise, Shari L. 122  
Larmour, Peter 68  
Lashley, Terry 28  
Latourelle, Sandra 112  
Laubach, Timothy A. 43, 82  
Launius, J. Carrie 106  
Lauterbach, Lynn 24, 113  
Lazaroff, Michael J. Vieira 62  
Leach, Ken 111  
LeCaine, Vanessa L. 75  
Lee, Edward 101  
Lee, Jean S. 64  
Lee, Michele H. 82  
Lehman, Mike 109  
LeMense, Todd 95  
Lemonick, Michael 17  
Lenz, Laura 44, 80  
Leonard, William H. 100  
Levedahl, Katie 121  
Levine, Joseph 55  
Levy, Essy 39, 88  
Lewis, Elaine 29  
Lightbody, Mary 122  
Lindbo, David 69  
Linden, Daniel 105  
Lindner, Martin 94  
Litherland, Becky 110  
Little, Robin 26, 127  
Lofstrand, Rochelle L. 126  
Long, Jennifer 57  
Loomis, Kimberly S. 126  
Lopez, Adrienne S. 115  
Lopez, Ana G. 110  
Lord, Thomas R. 93, 108  
Lubchenco, Jane 57  
Lurie, Howard 123  
Lutz, Demetrius M. 121  
Lutz, Ota 69  
Lyons, Sue Ellen 116

- M**
- MacDonald, Hubert C. 38  
 Machalek, Alisa Z. 113  
 Madden, Victoria H. 85  
 Mader, Jared 38, 82, 92  
 Madsen, James 114  
 Magi, Eric 36, 87  
 Maglaty, Joseph L. 59  
 Maldonado, Jasmine 121  
 Malone, Larry 107  
 Malone, Stephen 91  
 Malyn-Smith, Joyce 80  
 Mandel, Bates 90  
 Manley, Ollie I. 66  
 Marean, John H. 44  
 Markey, Donna 22, 70  
 Markiewicz, Kathleen R. 46  
 Markowitz, Dina G. 26, 49  
 Marks, Neil 101  
 Marrett, Cora 89  
 Marshall, Jeff 111  
 Martin, Christopher 95  
 Martin, Dean M. 64, 127  
 Martin, Michiko J. 62, 101  
 Martin, Rosemary 84  
 Marulcu, Ismail 128  
 Massalha, Taha 66, 92  
 Mastie, David F. 101  
 Maurer, Matthew J. 113  
 Maurin, Paulo S. 23  
 McCaffrey, William 18  
 McClurg, Nandini 68  
 McCreedy, Dale 63  
 McDilda, Katie 84  
 McDonald, Frank 116  
 McDonnough, Jacqueline T. 126  
 McGahern, Bob 89  
 McGarry, Michael 44  
 McGarry, Sherri 90  
 McGinnis, J. Randy 121  
 McGinnis, Patty 93  
 McGlashan, Patricia 52  
 McKean, Patricia B. 127  
 McKnight, Glenn A. 47  
 McLaughlin, Jonathan W. 76, 95, 112, 123  
 McLeod, Michele 94  
 McNeel, Ronald L. 111  
 McNeill, Katherine L. 64
- McQuillan, Patrick 128  
 McWilliams, M. Susan 82, 110  
 Mecca, Peter M. 46, 78  
 Meier, Walt N. 62  
 Meilander, Tracey 121  
 Meissner, Rob 58  
 Melody, David 34, 119  
 Mendez, Bryan J. 116  
 Méndez, Flavio 77  
 Mesa, Jennifer C. 98  
 Messersmith, Patricia 128  
 Meszaros, Jammin' Mark 71  
 Metlay, Suzanne T. 97  
 Meuse, Eric 127  
 Miller, Alma S. 67  
 Miller, Jaimie 22, 78  
 Miller, Kenneth 55  
 Miller, Zipporah 58  
 Minstrell, Jim 36, 87  
 Mirakovits, Maestro Kathy 54  
 Mitchell, Sara 29  
 Mock, Dee 20  
 Molinich, Alex 118  
 Montano, Brittany 115  
 Mooney, Susan 115  
 Moore, Scott 93  
 Moore, Susan W. 68  
 Moreno, Nancy P. 62, 111  
 Morgan, Emily 74  
 Morstein, Todd D. 65  
 Mosley, Julie E. 111  
 Moulton, Glen E. 58  
 Mucenski, Dennis 49  
 Mulkerrin, Elizabeth 121  
 Muller, Eric 50  
 Munsell, Darin S. 83, 128  
 Murphy, Cynthia R. 84  
 Muskin, Joe 26, 66  
 Mutch-Jones, Karen 65  
 Myers, Fred 114  
 Myers, Robert 24, 68  
 Myron, Mary C. 20
- N**
- Nadeau, Bev 79, 123  
 Nagle, Barbara 70, 102  
 Nalducci, Julie 118  
 Nanny, Mark A. 43, 82  
 Nargund, Vanashri S. 64
- Nealon, Barbara J. 42  
 Neely, Jessica 96  
 Neely, Norma 67  
 Neill, Tiffany N. 60  
 Nelson, Angela M.D. 17  
 Nelson, Bonnie 111  
 Neville, Sara 50  
 Newton, Kristin 62  
 Ng, Carolyn 121  
 Niehaus, Elizabeth 26, 123  
 Niehaus, Paul 123  
 Niemi, Kevin J. 78  
 Niepold, Frank 81  
 Noel-Storr, Jacob 29, 68, 101, 116  
 Norton, Eryn A. 46  
 Notin, Kim 115  
 Nunnaley, Diana 28  
 Nydam, Andrew 23, 75
- O**
- O'Connor, Tami 55, 104  
 Odell, Michael 24, 40  
 Odenwald, Sten F. 29  
 O'Neal, Michael M. 92  
 O'Neill, Megan F. 24  
 Ophus, John D. 40  
 Ornduff, Tina S. 24, 81  
 Osheroff, Hilleary 125  
 Ostman, Rae 121  
 Owens, Nafeesa 96
- P**
- Paciotti, Karen 83  
 Pages, Patrice 94  
 Paglierani, Ruth L. 98  
 Palmer, Roger T. 71, 103  
 Parolin, Brad 83  
 Parsons, Charles H. 26, 127  
 Passow, Michael J. 50, 68, 85  
 Patrick, Patricia 98  
 Patterson, Jeffery A. 115  
 Paul, Joy E. 91  
 Payo, Robert P. 46, 92  
 Pearce, Laura 44  
 Pedemonte, Sarah 28  
 Pedersen, Jon E. 115  
 Pelletier, Pam 18, 60, 79, 112, 123
- Penchos, Jessica 39, 107  
 Penick, John E. 100  
 Penniman, Leah 97  
 Penrose, Robert W. 17  
 Pepin, Glenda S. 64  
 Perry, Pamela 68, 83, 98  
 Peters, Thomas T. 42  
 Petersen, Sylvia K. 50  
 Peterson, Barney 63  
 Peterson, Jodi 92  
 Peterson, Karen 15  
 Petrone, Christopher J. 68  
 Petrova, Kitchka 93  
 Phillips, Desirée 62  
 Phillipson-Mower, Teddie 18  
 Piecka, Debra C. Burkey 24  
 Pietrucha, Barbara 39  
 Pinsley, Rachael 59  
 Poel, Robert H. 51  
 Pontillas, Fred A. 95  
 Pool, A. Marie 114  
 Popiolkowski, Gary 63  
 Poplawsky, Alexander J. 100  
 Potter, Julie 96, 116  
 Powers, Anne K. 100  
 Prejean, Sandra 101  
 Price, Paul 55  
 Prince, Allyson 80  
 Purdum, Timshel 92, 121  
 Purkiss, Christine L. 124  
 Purvis, David 110  
 Putnam, Dwight 32, 59  
 Puttick, Gilly M. 65
- Q**
- Quillen, Amy 60  
 Quinones, Daniella 51, 63, 128
- R**
- Radford, David L. 124  
 Ragsdale, Tyraine 60  
 Rainis, Ken 30, 53, 102, 118  
 Rasnake, Crystal 38  
 Ravgiala, Rebekah 28  
 Rearden, Kristin T. 106  
 Reardon, Ryan 51, 69, 86, 117  
 Reed, Sherri 86

## Index of Participants

- Reesink, Carole 50, 68  
Reeves, Marion M. 68  
Regalla, Lisa 121  
Reid, Virginia 39  
Reinbold, Maggie 121  
Reinert, Barbara J. 124  
Reiter, Carly 128  
Rendell, The Honorable  
Edward 52  
Renfrew, Kathy 46, 67  
Restivo, Angela M. 115  
Rich, Steve 46  
Richards, Susannah 111  
Rico-Beck, Laura 98, 128  
Rillero, Peter 122  
Rimer, Jack 105  
Rios, Debbie 85  
Ripley, Haven 79  
Roberts, Ken 95, 112  
Robertson, Bill 28, 49, 66  
Robertson, Ronna 99, 112  
Robinson, Clay 69  
Rocio, Zamaria 38  
Roditi, Hudson 129  
Rogers, Meredith Park 20  
Rogers, William 87  
Romine, William 50  
Romney, Carla 84  
Rosen, Isaac 35, 56  
Rosenfeld, Jean 128  
Ross, Patrisha A. 79  
Rougeux, Lance 58  
Royce, Christine Anne 57  
Rubin, Andee 36  
Ruef, Kerry 34, 119  
Rukes, Sherri C. 24, 44, 62  
Rulli, Carolyn 18  
Runion, Nina W. 59  
Russell, Kara M. 85  
Russell, Randy M. 85, 101,  
128  
Ruud, Ruth 67
- S**  
Sadler, Kim C. 66  
Sadler, Philip M. 22  
Sala, Scott E. 82  
Salinger, Terry 68  
Salisbury, Mary 92  
Salman, Fatma 116  
Salumbides, Cora S. 126  
Sanchez, Jodi 109  
Sanderlin, Jacqueline 80  
Santangelo, John 124  
Sarquis, Jerry 56  
Sarquis, Mickey 56  
Saul, E. Wendy 106  
Saur, Karen 121  
Scanlon, Brett 122  
Scantlebury, Kate 60  
Schaben, Chris 121  
Schaffer, Dane 50  
Schatz, Dennis 45, 77  
Scheff, Allison 43, 60  
Schifter, Catherine C. 43  
Schimmel, Gordon 54  
Schindler, Howard 49  
Schlawin, Mark F. 82  
Schoch, Pete K. 38  
Schoen-Giddings, Linda 111  
Schreiber, Elana Erwin 67  
Schriver, Marti 42  
Schwanke, Mary 93  
Schwartz, René 61  
Schwerin, Theresa 24  
Sconzo, Penney 34  
Scott, Adam M. 41  
Scowcrof, Gail 64  
Setubal, Claudia 92  
Shane, Pat 59, 130  
Shannon, Jeffrey F. 78  
Shannon, Jonathan 101  
Shaw, Terry J. 127  
Sheridan, Chris 39  
Sherman-Morris, Kathleen M.  
73  
Sherriff, Jody 88  
Sherwood, Carrie-Anne 62  
Shields, Carol 59  
Shmaefsky, Brian 76  
Short, Martha 67  
Shouse, Andrew W. 77  
Shumack, Kellie 93  
Sickel, Aaron J. 82, 115  
Silla-Zaleski, Vanessa 98  
Silverthorn, Dee U. 76  
Simmons-Brooks, Pam 61  
Skidmore, Cathleen W. 110  
Skjold, Brandy A. 61  
Sky, Anthony 26, 123  
Slater, Stephanie J. 29, 50, 129  
Slater, Timothy F. 129  
Smarrella, Tony 120  
Smith, Ben 38, 82, 92  
Smith, Bruce G. 127  
Smith, Christine 122  
Smith, David Lee 59  
Smith, Deborah C. 58  
Smith, Linda Lee 126  
Smith-Walters, Cindi 66,  
106  
Smithenry, Dennis W. 125  
Snyder, Joanna 75, 127  
Snyder, Regina B. 48  
Soldat, Christopher 114  
Solon, Israel 81, 95  
Somera, Adrienne B. 49  
Sonnert, Gerhard 78  
Soper, Kim 48  
Sorensen, Rick 34, 72  
Spagnoli, James J. 49, 113  
Sparks, Robert 50, 85  
Spencer, Erica Beck 75  
Spindler, Lori H. 84  
Spruill, Mary 28, 49, 79  
Stadtfeld, Melissa 80  
Stahler, Scott 103  
Stallard, Jackie 47  
Stanley, Linda G. 124  
Stark, Louisa A. 66, 100  
Starr, Mary 30  
Staudt, Carolyn J. 94  
Steffen, Peggy 113  
Steiner, Robert V. 123  
Stennett, Betty 52, 73  
Stenstrup, Al 47, 87  
Stern, Terri 45, 66  
Stewart, Melissa A. 109  
Stimmer, Maryann 83  
Stone, Bj 22, 70  
Stowell, Elena 38, 90  
Strange, Johanna 30, 53, 88  
Strohmingier, Gordon 71  
Stubbs, Tamica A. 81  
Sullivan, Meredith B. 47  
Sundberg, Cheryl W. 111  
Suriel, Regina L. 88  
Surles-Law, Lisa 65  
Sweet, William 45  
Sweetman, Sara B. 41, 124  
Swensrud, Andrea 112, 124  
Switzer, Heather 111  
Syverson-Mercer, Cynthia  
105  
Szalay, Carie 77
- T**  
Taber, John 85, 128  
Takacs, Jackie 52  
Tansey, Charles G. 43, 78  
Tapp, Anne R. 40  
Tart, Alan M. 90  
Tashima, Nancy 116, 129  
Taylor, Daryl L. 16, 84, 116  
Taylor, Elizabeth H. 69  
Taylor, Julie 67, 128  
Taylor, Nancy 97  
Termotto, Karlie 119  
Terry, Angela 34  
Texley, Juliana 60  
Thanukos, Anna 18  
Tharp, Barbara 62  
Thimor, Jacob 92  
Thoman, Richard L. 96  
Thomas, Julie 75  
Thompson, Kate 101  
Thompson, Maura 63, 121  
Tierce, Marlee 67  
Toback, Claudia 50  
Tokarsky, Rebecca 113  
Toles, John 51  
Topps, Jo 36  
Towleh, Jennifer L. 22  
Trautmann, Nancy M. 114  
Travers, Kristen 120  
Trent, Robert X. 107  
Tress, Nancy 61  
Troutman, Frankie 32  
Trummel, Betty 29, 50  
Tugel, Joyce 65, 100  
Tunncliffe, Sue Dale 45, 99  
Turrin, Margie K. 82  
Tushie, Jean 46, 85, 101, 114  
Tweed, Anne L. 52, 117  
Twiest, Mark 26, 99  
Twiest, Meghan 99

- U**  
Uppal, Madhu 116  
Upton, Karen J. 82
- V**  
Valadez, Jerry D. 59, 110  
Valdez, Bill 89  
Van Doren, Aleya 101, 116  
Van Gundy, Susan 46, 123  
Van Natta, Sandra H. 115  
Vander Velden, Sandra J. 114  
VanderPutten, Elizabeth 96  
Van Wagner, Kristin 125  
Varine, John A. 38  
Vaughan, Pam C. 50  
Vavalla, Peggy 49, 66, 80  
Vengenock, Luella C. 126  
Vernier, David L. 55  
Villa, Carlos R. 98  
Vincent, Dan 41, 125  
Visconti-Phillips, Nina 16  
Vital, Fred 114  
Vitale, Nicola 128
- Vogelzang, Jody L. 125  
Voit, Elizabeth 65  
Vokos, Stamatis 36  
Vreeland, Pete 77
- W**  
Wagner, Joan S. 41, 84  
Waldron, Ingrid 84  
Waldron, Kristen M. 122  
Waldvogel, Jerry 18  
Walker, Diane 65  
Walker, Sally M. 106  
Wandersee, James H. 16  
Warren, Shannon 49  
Warschaw, Kimberly 85  
Watkins, Mario 88  
Watson, George 60  
Weeks, Gail 51  
Weir, Heather 26  
Wellborn, Kristy W. 127  
Wells, Gordon L. 123  
Whalen, Jason 42  
Wheeler, Christine 65  
Wheeler, Tracey L. 99
- Whiffen, Pamela 48, 68, 85,  
101, 116  
White, Brian T. 83  
White, Kevin J. 128  
Wickerham, Deb 46, 67  
Wiggins, Grant 104  
Wiig, Diana 106  
Wiley, David A. 98  
Willard, Ted 16, 123  
Williams, Jennifer C. 26  
Williams, Vivian 82  
Wilson, Ann A. 42  
Wilson, Craig A. 99  
Wilson, Danielle 47  
Winkler, Kimberly 115  
Winokur, Jeff 106, 129  
Winrich, Charles 122  
Winterton, Joyce 89  
Wisnieski, David 16  
Witzig, Stephen 65  
Wojnowski, Brenda 93, 111  
Wood, Bonnie S. 38, 108  
Wood, Erin L. 101  
Wood-Blain, Patreka J. 82
- Worsham, Heather M. 61, 112  
Worth, Karen 106, 129  
Wright, Ann W. 99  
Wright, Brian P. 28, 63  
Wujczyk, Lisa 122  
Wunar, Bryan 84, 121  
Wysession, Michael 32, 85
- Y**  
Yager, Robert E. 108  
Yoder, Jon P. 63  
Yokoi, Craig 100  
Yorks, Kathy A. 94  
Young, Donna L. 68, 83, 98  
Young, Monica J. 60  
Yuan, Ling 36  
Yu, Julie 121
- Z**  
Zike, Dinah 104, 119  
Zink, Donald 89











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---

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Ohaus Corporation (Booth #915), <a href="http://www.ohaus.com">www.ohaus.com</a> , 800-672-7722 . . . . .	Cover IV
PASCO (Booth #805 and #914), <a href="http://www.pasco.com">www.pasco.com</a> , 800-772-8700 . . . . .	35
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Toyota TAPESTRY Grants for Science Teachers (Booth #512), <a href="http://www.nsta.org/programs/tapestry">www.nsta.org/programs/tapestry</a> , 800-807-9852 . . . . .	Cover III
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NSTA Conferences, <a href="http://www.nsta.org/conferences">www.nsta.org/conferences</a> . . . . .	25
NSTA Exhibit Booth (Booth #522: NSTA Avenue), <a href="http://www.nsta.org">www.nsta.org</a> . . . . .	33
NSTA Learning Center (Booth #522: NSTA Avenue), <a href="http://learningcenter.nsta.org">http://learningcenter.nsta.org</a> . . . . .	43
NSTA Member Services (Booth #522: NSTA Avenue), <a href="http://www.nsta.org/membership">www.nsta.org/membership</a> , 800-722-6782 . . . . .	21, 67, 79
NSTA Press, <a href="http://store.nsta.org">http://store.nsta.org</a> , 800-277-5300 . . . . .	19, 47
NSTA Science Bookstore, <a href="http://store.nsta.org">http://store.nsta.org</a> . . . . .	37

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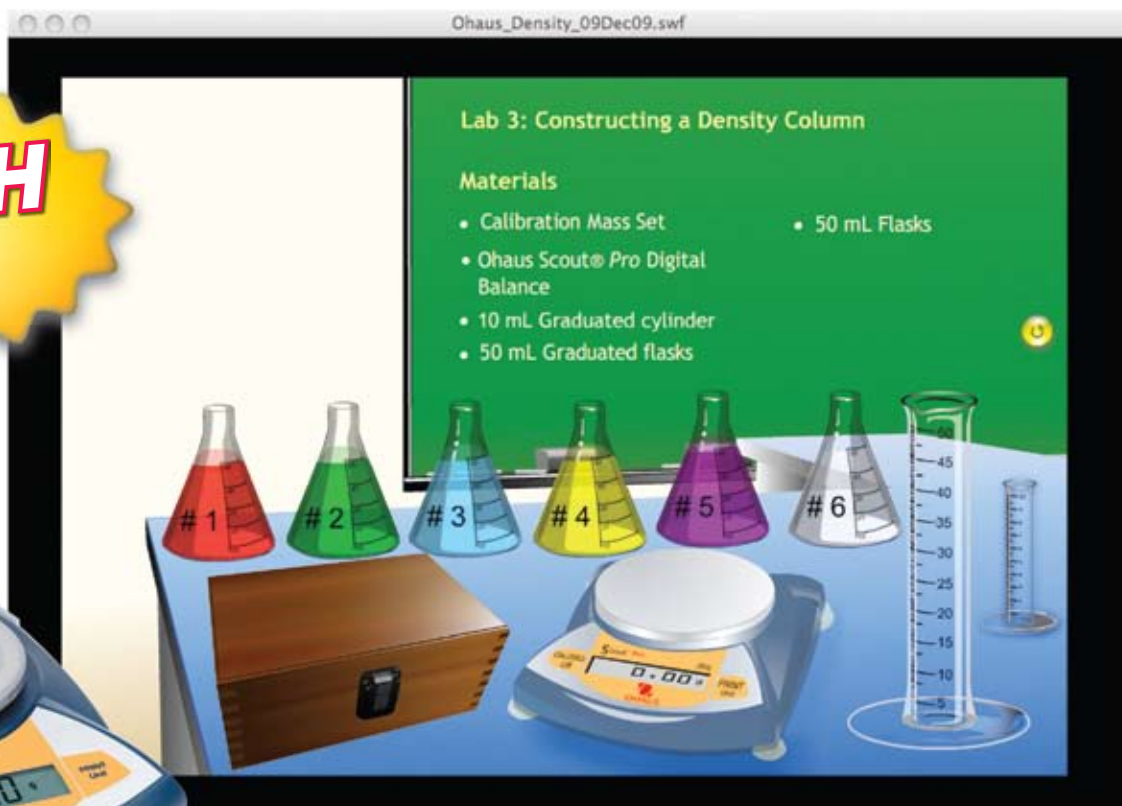




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