

# San Antonio

**Next Generation Science:  
Learning, Literacy, and Living**



2

Friday, April 12



NSTA 2013  
National Conference  
on Science Education

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# NSTA CONFERENCES ON SCIENCE EDUCATION

2013

## SAVE THE DATES



**Portland, OR**    **OCTOBER 24–26**

### Professional Development Strands

- Bridging Elementary and Secondary Science with the Common Core
- Bridging to the Highly Anticipated Next Generation Science Standards—What's in It for Me?
- Building Bridges Within STEM Education

**Charlotte, NC**    **NOVEMBER 7–9**

### Professional Development Strands

- Engineering: Promoting the “E” in STEM
- Merging Literacy into Science Instruction
- Accelerating the Skills of Digital Learners

**Denver, CO**    **DECEMBER 12–14**

### Professional Development Strands

- PreK–8 Science: A Playground for Literacy and Mathematics
- Engineering the Engineering: Connecting the Why to the How
- Exploring STEM: Inside and Out

**FOR UPDATES AND INFORMATION, VISIT**  
[www.nsta.org/conferences](http://www.nsta.org/conferences)

**NSTA** National  
Science  
Teachers  
Association

# NSTA Membership

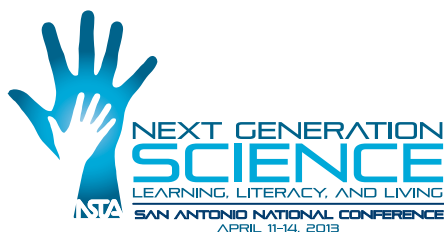
## Become the Best Teacher You Can Be

Membership in NSTA delivers all the best professional development and resources a science educator needs.

- Members select one or more of the idea-packed, peer-reviewed journals designed for all grade levels. *Science and Children* (grades K–6); *Science Scope* (grades 6–9); *The Science Teacher* (grades 9–12), or *Journal of College Science Teaching*.
- NSTA National and Area Conferences are the world's largest gathering of science educators—an unparalleled professional development opportunity.
- The NSTA Learning Center offers year-round, face-to-face and online-learning opportunities with leading education providers.
- NSTA Listserv Email Subscriptions allow members to join any of 13 electronic lists to gain knowledge from industry professionals who gather online to share valuable information.
- Members save with discounts on insurance, Learning Center products, books, digital content and conference registration.
- And stay informed with our publications; *NSTA Reports*, *NSTA Book Beat*, *SciLinks* web content and our E-newsletters.



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# NSTA 61st National Conference on Science Education

San Antonio, Texas • April 11–14, 2013

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## National Science Teachers Association

1840 Wilson Blvd.  
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E-mail: [conferences@nsta.org](mailto:conferences@nsta.org)  
[www.nsta.org](http://www.nsta.org)

**Cover Photos:** Starting left: Results are recorded from a balloon-powered car race at Harmony Science Academy—San Antonio. Photo courtesy of Harmony Science Academy—San Antonio. Top right, students evaluate the health of a watershed by examining aquatic invertebrate collections at Selah, Bamberger Ranch Preserve. Photo courtesy of Selah, Bamberger Ranch Preserve. Bottom right, a diver collects data at Diversion Spring in Spring Lake, San Marcos, Texas. Photo courtesy of Edwards Aquifer Authority.



The environment is important to science educators. These programs are recyclable and were printed on recycled paper.



Renewable Energy Science Education

## Friday, April 12

### Workshops

- 8:00am–9:00am Hands-on Hydropower
- 9:30am–11:30am Wind Energized Classroom
- 12:30pm–2:00pm WindWise Science Curriculum
- 2:30pm–3:30pm Renewable Power, Vernier & KidWind Gear
- 4:00pm–5:30pm Exploring Circuits by Hacking Toys

## Saturday, April 13

### Workshops

- 8:00am–9:30am Wind Energy for K–4
- 10:00am–11:30am Solar Energy: Hands-on!
- 12:00pm–2:00pm Wind Energized Classroom
- 2:30pm–4:00pm WindWise Science Curriculum
- 4:30pm–5:30pm Renewable Power, Vernier & KidWind Gear

## Hi! We're KidWind.

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—At Rendon / San Antonio Convention and Visitors Bureau



Reflections at the River Walk

**Mission Statement**

The mission of NSTA is to promote excellence and innovation in science teaching and learning for all.

The ideas and opinions expressed in the conference sessions, and in any handout materials provided, are those of the presenter. They are not those of the National Science Teachers Association nor can any endorsement by NSTA be claimed.

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The San Antonio Conference Committee has planned the conference around these 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.



### **Next Generation Assessments: Effectively Measuring Student Learning**

Use of assessments to measure students' understanding of science concepts is becoming increasingly important for science teachers across the country. Administrators and policy makers use assessments to determine how well their schools are preparing the next generation. Student learning is effectively measured when curriculum, instruction, and assessment are aligned. A variety of assessment strategies can provide feedback to inform teaching and learning. Assessments should be used to adjust course content and rigor, teaching techniques, and learning strategies to improve student science achievement. Moreover, assessment data should be used to craft appropriate professional development and student interventions. This strand will deepen participants' understanding of assessments and their impact on teaching and learning.



### **Next Generation Elementary Science: Building the Foundation**

One of the primary roles of elementary teachers is to build a strong foundation for science. Research indicates that many elementary educators feel unprepared to deliver effective science instruction. Foundational practices in the elementary classroom, laboratory, and field include building background knowledge, teaching scientific and engineering practices, integrating content, and developing scientific literacy. This strand will expand participants' implementation of research-based best practices for teaching science.



### **Next Generation Special Populations: Meeting the Needs of Diverse Learners**

Special student populations—including limited English proficient, special education, economically disadvantaged, and culturally diverse—are traditionally underserved in science instruction. In order to meet student needs, teachers must have the tools necessary to effectively differentiate and accommodate for individual needs. This strand will strengthen participants' knowledge of differentiated instruction, Response to Intervention, federally defined subpopulations, accessibility to a guaranteed and viable curriculum, and children's rights and safety in special populations.



### **Next Generation Technology: Putting the "T" in STEM**

As educators we must prepare all learners for a future we can only imagine. Appropriate and effective technology must be integrated with instruction to support Science, Technology, Engineering, and Mathematics (STEM) learning. The use of technology enhances students' scientific and engineering practices, and fosters the development of scientific literacy. This strand provides opportunities for science educators to experience appropriate use and integration of technology in teaching and learning, and increases their confidence in incorporating these tools into their practices.



**Next Generation Special Populations:  
Meeting the Needs of Diverse Learners**

**Friday, April 12**

**8:00–8:30 AM**

A Little PDA Goes a Long Way: Content Literacy Strategies

**8:00–9:00 AM**

The Do's and Don't's of the Flipped Classroom: Best Practices

**9:30–10:30 AM**

Diverse Science Tools for Diverse Science Learners

**11:00 AM–12 Noon**

Deduce to Reduce English Language Learners' Frustration with Science Text

**12:30–1:30 PM**

STEM Comes to Preschool  
Team Teaching in the Science Classroom

**12:30–3:30 PM**

Short Course: Squishy Circuits, Toy Engineering, and More! (By Ticket: SC-11)

**2:00–3:00 PM**

Adapting Space Adventures: Using Real NASA Data to Engage Students with Special Needs

**4:00–4:30 PM**

*Aprendiendo Ciencias*: Acquiring and Expanding Scientific Language and Literacy

**5:00–6:00 PM**

Photosynthesis: The Musical!

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Please note that your conference app scheduler will not sync with the Personal Conference Scheduler found on NSTA's website.

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## Next Generation Elementary Science: Building the Foundation

### Friday, April 12

#### 8:00–9:00 AM

Fee Fi Fo Fum! Getting Elementary Students Excited About Plants!

#### 8:00–10:30 AM

Short Course: Maury Morning of Oceanography (By Ticket: SC-6)

#### 9:30–10:30 AM

Investigating Soil in the Elementary Classroom

#### 11:00 AM–12 Noon

Magical Illusions and Scintillating Simulations for Science—It’s Showtime!

#### 12:30–1:30 PM

Circuits to Go!

#### 1:00–4:30 PM

Short Course: Real-Life Science Learning on a Budget (By Ticket: SC-12)

#### 2:00–3:00 PM

Let It Slide!

#### 5:00–6:00 PM

Growing a Garden of Learners

## Next Generation Assessments: Effectively Measuring Student Learning

### Friday, April 12

#### 8:00–9:00 AM

Activities That Lead to Conceptual Understanding of Chemistry Content

#### 11:00 AM–12 Noon

Formative Assessment in Middle Grades Science

#### 12:30–1:30 PM

Using the Nation’s Report Card (NAEP) to Improve Science Education

#### 2:00–3:00 PM

Go Hands On with the Nation’s Report Card: Do HOTS, Observe ICT Simulations, and Learn About Linking NAEP to TIMSS Results

#### 3:30–4:30 PM

The Nation’s Report Card Will Provide the First National Test of How Well Students Do in Technology and Engineering Literacy

#### 5:00–6:00 PM

Photographs for Assessment—“Take a Picture When...”: Digital Photography Makes It Easy to Engage Elementary Students in Assessment

## Next Generation Technology: Putting the “T” in STEM

### Friday, April 12

#### 8:00–9:00 AM

Digitize the Learning Experience and Take IT Mobile

#### 8:00 AM–5:00 PM

Short Course: Meeting the Next Generation Engineering Practices with Exemplary Resources (By Ticket: SC-9)

#### 8:30–9:30 AM

Featured Presentation: What a Difference a Measurement Makes (Speaker: Paul A. Stokstad)

#### 9:30–10:30 AM

Going Beyond Data Collection: Sharing in a Science Classroom

#### 11:00 AM–12:30 PM

Google Me This: How to Make Collaboration Work in a Wiki World

#### 2:00–3:00 PM

Tech Talk: A Terabyte of Ideas in an Hour

#### 3:30–4:30 PM

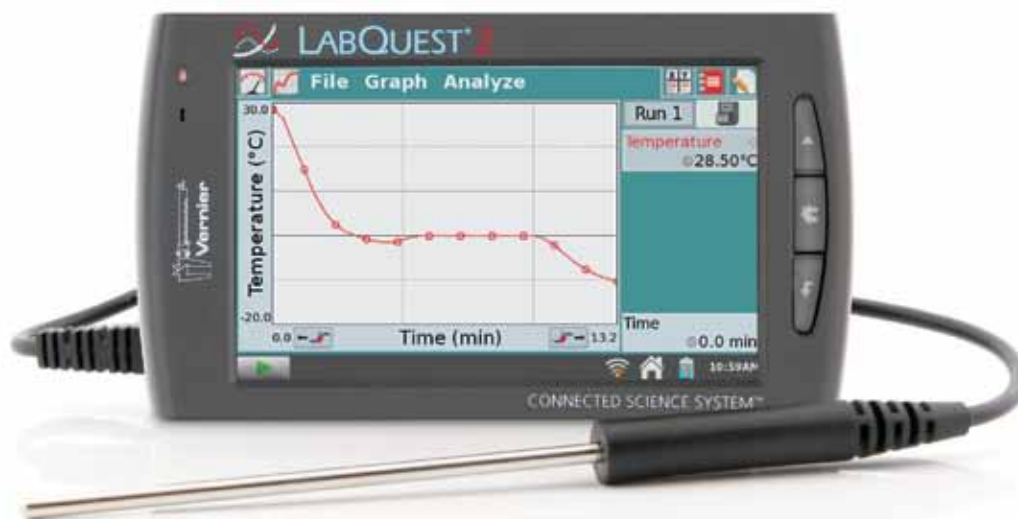
STEM Digital: Digital Cameras as Scientific Instruments

#### 5:00–5:30 PM

Designing and Developing STEM Collaborative Field Studies

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**Scholastic Administrator’s Tech Tools** – Grade: A, “A bargain. LabQuest is a modern-day science lab that fits in the palm of a hand.” – Brian Nadel

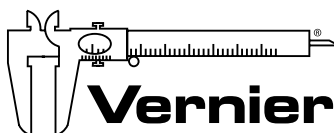


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Read the full reviews of LabQuest 2 and the Connected Science System at [www.vernier.com/labq2](http://www.vernier.com/labq2)



## Next Generation Science Standards



### NGSS Town Hall Meeting (NGSS @ NSTA)

Friday, April 12, 2:00–3:00 PM, Ballroom C2, Convention Center

In San Antonio, NGSS takes center stage. This conference is a premier event for science educators to join NGSS writers, reviewers, contributors, and others to explore this landmark document. Don't miss the multitude of events and sessions to learn more about NGSS and plan next steps for implementation.

#### Teacher Insights from the Writing Team and Town Hall Meeting

Join K–12 teachers who are writers of the Next Generation Science Standards for an exploration of the development of NGSS—from teachers for teachers. In four back-to-back sessions, writing team members will share the thinking and

ideas that went into writing this landmark document, and the challenges they experienced along the way. Individual sessions focus on elementary, life science, physical science, and Earth and space science and will explore what NGSS will mean for classroom science teachers.



The four sessions will culminate with a Town Hall Meeting with Stephen L. Pruitt, vice president for Content, Research, and Development at Achieve, Inc. This interactive forum will be an opportunity for teachers to ask questions and discuss the next steps in the implementation of NGSS.

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## Teacher Insights from the NGSS Writing Team and Town Hall Meeting

Friday, April 12, 8:00 AM–3:00 PM • Texas Ballroom F, Grand Hyatt

8:00–9:00 AM Next Generation Science Standards: Teacher Insights from the Writing Team—Elementary Level (NGSS @ NSTA) (p. 20)

9:30–10:30 AM Next Generation Science Standards: Teacher Insights from the Writing Team—Life Sciences (Middle/High School) (NGSS @ NSTA) (p. 43)

11:00 AM–12 Noon Next Generation Science Standards: Teacher Insights from the Writing Team—Physical Sciences (Middle/High School) (NGSS @ NSTA) (p. 59)

12:30–1:30 PM Next Generation Science Standards: Teacher Insights from the Writing Team—Earth and Space Sciences (Middle/High School) (NGSS @ NSTA) (p. 78)

*A complete list of NGSS @ NSTA sessions scheduled on Friday is on page 26.  
See Volume 3 for a list of NGSS @ NSTA sessions scheduled on Saturday.*

*Science Education Reform*



*More Emphasis . . . Less Emphasis*

**NSTA Exemplary Science Program (ESP)**

**ESP: Unique Features of Programs That Meet “More Emphasis” Features in the NSES**

Friday, April 12, 9:00 AM–12 Noon

215, Convention Center

NSTA’s Exemplary Science Programs (ESP) series identifies people and places where the reforms recommended have emerged. The exemplary include: 1) Exemplary Science in Grades PreK–4; 2) Exemplary Science in Grades 5–8; 3) Exemplary Science in Grades 9–12; 4) Exemplary Science: Best Practices in Professional Development; 5) Inquiry: The Key to Exemplary Science;

*The ESP Symposium is described on page 38.*

Coordinator: **Brenda Wojnowski**, WAI Education Solutions, Dallas, Tex.

***Promoting Inquiry with Preservice Elementary Teachers***

Thomas R. Lord, NSTA Director, College Science Teaching, and Retired Educator, Lewes, Del.

***More Emphasis on Teacher Quality***

Susan B. Koba, Retired Educator, Omaha, Neb.

***Creating a Pipeline to STEM Careers***

Anton Puvirajah and Lisa M. Martin-Hansen, Georgia State University, Atlanta

Geeta Verma, University of Colorado, Denver

***Bring School Science to College***

Sondra B. Akins, William Paterson University, Wayne, N.J.

***“Who Ate Our Corn?”***

Craig Wilson, USDA/Hispanic Serving Institutions National Program and Texas A&M University, College Station

***Sowing the Seeds of Future Success***

Timothy P. Scott, Texas A&M University, College Station

***The Talent Marketplace—Where Science Careers Are Made***

S. Anders Hedberg, Hedberg Consulting, LLC, Ottsville, Pa.

***Developing Students’ Authentic Inquiry Skills***

Judith A. Scheppler, Illinois Mathematics and Science Academy®, Aurora

***Preparing Students for Careers That Do Not Yet Exist***

Glenn “Max” McGee, Illinois Mathematics and Science Academy®, Aurora

6) Exemplary Science in Informal Education Settings; and 7) Exemplary Science for Resolving Societal Challenges.

The series was conceived by Robert E. Yager (1982–1983 NSTA President), who continues ESP searches and ways of recognizing classroom successes while also encouraging more to try!

***Securing a “Voice”***

David L. Brock, Roland Park Country School, Baltimore, Md.

***Stop Talking, Start Listening***

Peter Veronesi, The College at Brockport, N.Y.

***Revising Majors Biology: A Departmental Journey***

Elizabeth Allan, NSELA President, and University of Central Oklahoma, Edmond

***Revising an Old Strategy with New Frameworks***

Teddie Phillipson-Mower, University of Louisville, Ky.

***Ways to Interest More Students in Science Careers***

Claudia Khourey-Bowers, Kent State University at Stark, North Canton, Ohio

Vicki McCamon, Joseph Welty Middle School, New Philadelphia, Ohio

***Success with Science Outdoors***

Beth Ann Krueger, Central Arizona College—Aravaipa Campus, Winkelman

***Implementing the Jigsaw Technique to Enhance Learning***

Sandhya N. Baviskar, University of Arkansas—Fort Smith

***Inspiring the Next Generation of Scientists***

Gerard J. Putz, Science Olympiad, Oakbrook Terrace, Ill.

Jennifer L. Wirt, New Jersey Science Olympiad, Livingston

***Developing Inquiry Skills***

Robert Wolffe, Bradley University, Peoria, Ill.

***Why STEM—Why Now?***

Karen Charles, RTI International, Research Triangle Park, N.C.

## 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, April 12

#### 8:00–9:00 AM

Classroom Activities to Accompany  
*Stop Faking It! Force & Motion*

#### 9:30–10:30 AM

Brain-powered Science Teaching and Learning with Discrepant Events

Classroom Activities to Accompany  
*Stop Faking It! Energy*

#### 11:00 AM–12 Noon

Ways to Approach Doing POE Exercises in Your Classroom

*Picture-Perfect Science Lessons: Using Picture Books to Guide Inquiry*

#### 12:30–1:30 PM

Uncovering K–12 Students' (and Teachers') Ideas About Matter and Energy

#### 2:00–3:00 PM

*Rise and Shine: A Practical Guide for the Beginning Science Teacher*

#### 3:30–4:30 PM

Good-Bye MSDS, Hello SDS

Visualizing the World of Atoms and Molecules: Virtual Technologies That Wow Students

#### 5:00–6:00 PM

Five E(z) Guidelines for Designing Research-informed Science Lesson Sequences



## Elementary Extravaganza • Friday, 8:00–10:00 AM

### Ballroom B, Convention Center

This Extravaganza is not to be missed! Join elementary groups of professionals for an exceptional opportunity—more than 100 presenters will provide ideas. Engaging hands-on activities, strategies to excite and encourage your students, a preview of the best trade books available, information about award opportunities, contacts with elementary science organizations, sharing with colleagues, and much more will be available to participants.

Come grab some coffee, enter to win prizes, and walk away with a head full of ideas and arms full of materials! For a complete list of Extravaganza participants, please pick up a program at the door.

Sponsored in part by **Carolina Biological Supply, Delta Education/School Specialty, Houghton Mifflin Harcourt, and Science Companion, Chicago Educational Publishing Co.**

Participating organizations include: the Association of Presidential Awardees in Science Teaching, the Council for Elementary Science International, the NSTA Committee on Preschool–Elementary Science Teaching, *Science & Children* authors and reviewers, and the Society of Elementary Presidential Awardees.



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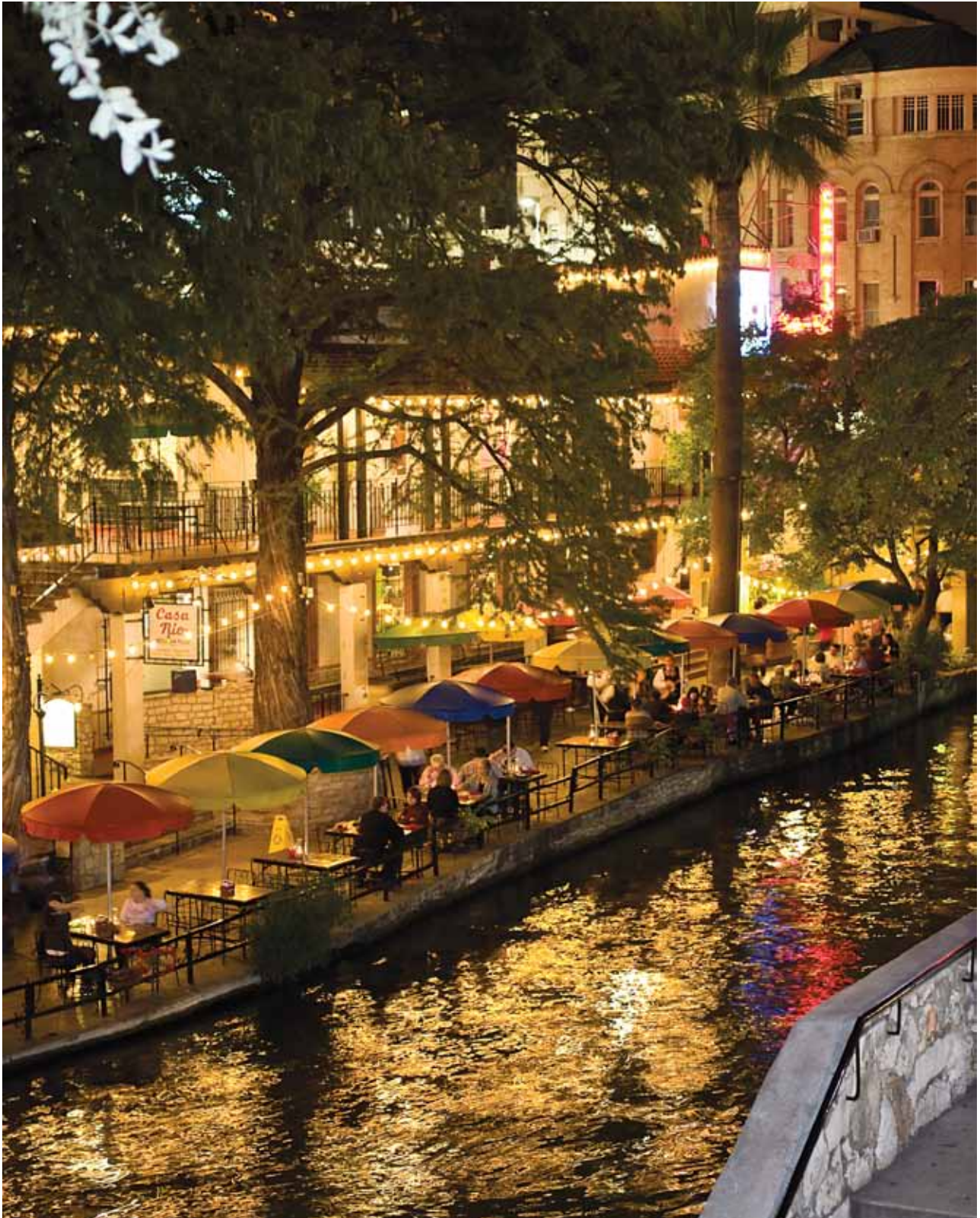
## **ENJOY ALL OF THESE AND MORE:**

- Award-winning books filled with best practices, science content, teaching tips, and lesson plans.
- New books hot off the press: *Inquiring Scientists*, *Inquiring Readers*; *Scientific Argumentation in Biology*; NSTA Kids books; *Everyday Engineering*; to name a few.

### **STORE HOURS**

<b>Wednesday</b>	<b>5:00 PM–8:00 PM</b>
<b>Thursday</b>	<b>7:00 AM–6:00 PM</b>
<b>Friday</b>	<b>7:00 AM–5:00 PM</b>
<b>Saturday</b>	<b>7:30 AM–12 Noon</b>

- Meet many of your favorite authors at sessions and book signings.
- T-shirts, totes, and other science gifts to take back to your classroom.
- **All attendees get member pricing—20% off all NSTA Press® products.**



— Richard Nowitz / San Antonio Convention and Visitors Bureau



**6:30–8:30 AM Breakfast**

**AMSE Alice J. Moses Breakfast**

*(By Invitation Only)*

*Salon A, Marriott Rivercenter*

**7:30–9:00 AM High School Breakfast**

**Curiosity Counts! Engaging Your Students in Exploration (M-2)**

*(Tickets Required: \$45)*

*Alamo Salon A, Marriott Riverwalk*



**Fuk K. Li**, Manager, NASA Mars Exploration Program, and Director, JPL Mars Exploration Directorate, NASA's Jet Propulsion Laboratory, Pasadena, Calif.

From the “Seven Minutes of Terror” of landing on Mars to roving on the surface, NASA's Mars rover Curiosity is a symbol of the human quest

to understand the unknown. Learn about how Curiosity has transformed our understanding so far, the power of balancing risk with reward, and how to accept challenges that stretch the limits of what is currently possible. Inspire your students to connect to their own curiosity through authentic STEM-based experiences that inspire innovation and discovery in the classroom...and that just may lead them to become the rover drivers, inventors, and discoverers of the future!

*Dr. Fuk Li is director for the Mars Exploration Directorate at NASA's Jet Propulsion Laboratory. He joined JPL in 1979 and has been involved in radar remote-sensing activities. He has developed a number of system analysis tools for spaceborne synthetic aperture radar system design, and participated in the development of and applications for interferometric synthetic aperture radar.*

*Dr. Li became the deputy director of JPL's Solar System Exploration Program Directorate in 2001 and deputy director for the Mars Exploration Directorate in 2004. He is currently also NASA's Mars Exploration Program Manager.*

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

**7:30–10:00 AM Breakfast**

**Next Steps Networking Forum**

*Salon C, Marriott Rivercenter*

Join Next Steps for breakfast and thought-provoking dialogue. Bring best practices and experiences to share and take away inspiration, ideas, and encouragement! \$20 at the door; RSVP: [evercoe@earthforce.org](mailto:evercoe@earthforce.org).

*The ideas and opinions expressed in the conference sessions, and in any handout materials provided, are those of the presenter. They are not those of the National Science Teachers Association nor can any endorsement by NSTA be claimed.*

**Science Area**

A science area category is associated with each session. These categories are abbreviated in heavy type at the right immediately following the session title. On page 131, you will find the conference sessions grouped according to their assigned science area category.

The science areas and their abbreviations are:

- (Bio)** = **Biology/Life Science**
- (Chem)** = **Chemistry/Physical Science**
- (Earth)** = **Earth/Space Science**
- (Env)** = **Environmental Science**
- (Gen)** = **Integrated/General Science**
- (Phys)** = **Physics/Physical Science**

**Glossary**

**STEM stands for Science, Technology, Engineering, and Mathematics.**

**Strands**

The San Antonio Conference 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. For strand descriptions, see page 6.



**Next Generation Assessments: Effectively Measuring Student Learning**



**Next Generation Elementary Science: Building the Foundation**



**Next Generation Special Populations: Meeting the Needs of Diverse Learners**



**Next Generation Technology: Putting the “T” in STEM**

The following icons will be used throughout this program.



**Global Conversations in Science Education Conference**



**NGSS @ NSTA Sessions**



**NSTA Press® Sessions**



**PDI Professional Development Institutes**

**8:00–8:30 AM Presentation**

**SESSION 1**



**A Little PDA Goes a Long Way: Content Literacy Strategies (Gen)**

(Elementary–High School) 201, Convention Center

**Pamela T. Bell** ([pbell@gdn.edu](mailto:pbell@gdn.edu)), Gordon College, Barnesville, Ga.

An effective comprehension enhancement method, known as Professional Development Alternatives (PDA), can improve the comprehension of all students. This system involves various pre-, during, and post-reading strategies that can help all students understand and retain the material presented. Join me to learn more about this method and receive a handbook of PDA strategies.



**8:00–9:00 AM Presentations**

**SESSION 1**

**Developing the Mind’s Eye: Assessing Spatial Thinking (Earth)**

(Middle Level–High School) 003A, Convention Center

**Hilarie B. Davis** ([hilarie@techforlearning.org](mailto:hilarie@techforlearning.org)), Technology for Learning Consortium, North Kingstown, R.I.

Did learning Geographic Information Systems (GIS) make a difference in students’ spatial thinking? Yes! Try out and take away our pre/post performance task (National Research Council’s Learning to Think Spatially).

**SESSION 2**

**Interdisciplinary Space Exploration with NASA and WWT (Earth)**

(General) 101A, Convention Center

**Mari M. Westerhausen**, Monterey Park School, Phoenix, Ariz.

Join your NASA Ambassador in exploring technology for interdisciplinary space units that integrate STE(A)M (Science, Technology, Engineering, Arts/Architecture, and Math) concepts using NASA Heliophysics and Solar System resources and the Microsoft® WorldWide Telescope.

**SESSION 3**

✓ **Activities That Lead to Conceptual Understanding of Chemistry Content (Chem)**

(High School) 202B, Convention Center

**Deanna M. Cullen** ([deannacullen@whitehallschools.net](mailto:deannacullen@whitehallschools.net)), Whitehall High School, Whitehall, Mich.

Join me for activities that explore three levels of representation and provide formative assessments to reveal student misconceptions, helping to develop deep conceptual understanding of chemistry content.

**SESSION 4**



**Digitize the Learning Experience and Take IT Mobile (Gen)**

(General) 207A, Convention Center

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

Join us as we share how to use iPads and other mobile devices in the science classroom. Come learn how to put your content on your students’ devices.

# Friday, April 12

	Featured Speakers/Special Events	Next Generation Science Standards	Featured Speakers/Special Events	Featured Speakers/Special Events
8:00 AM	<b>Elementary Extravaganza</b> 8:00–10:00 AM Ballroom B, Conv. Center	<b>NGSS Session</b> Teacher Insights from the Writing Team—Elementary Level (NGSS @ NSTA) 8:00–9:00 AM Texas Ballroom F, Grand Hyatt	<b>Featured Presentation</b> 8:30–9:30 AM Grand Ballroom C2, Conv. Center Speaker: Paul A. Stokstad	<b>Featured Presentation</b> 8:30–9:30 AM Grand Ballroom C3, Conv. Center Speaker: Mireya Mayor
9:00 AM				
10:00 AM	<b>NSTA ESP Symposium</b> ESP: Unique Features of Programs That Meet “More Emphasis” Features in the NSES 9:00 AM–12 Noon 215, Conv. Center	<b>NGSS Session</b> Teacher Insights from the Writing Team—Life Sciences (Middle/High School) (NGSS @ NSTA) 9:30–10:30 AM Texas Ballroom F, Grand Hyatt	<b>Science Seminar</b> 10:30 AM–12 Noon Grand Ballroom C2, Conv. Center Speaker: Susan L. Mooberry	<b>Science Seminar</b> 10:30 AM–12 Noon Grand Ballroom C3, Conv. Center Speaker: Louis L. Jacobs
11:00 AM				
12 Noon	<b>SCST Marjorie Gardner Lecture</b> 12:30–1:30 PM Bowie C, Grand Hyatt Speaker: Kimberly D. Tanner	<b>NGSS Session</b> Teacher Insights from the Writing Team—Earth and Space Sciences (Middle/High School) (NGSS @ NSTA) 12:30–1:30 PM Texas Ballroom F, Grand Hyatt	<b>Science Seminar</b> 12:15–1:45 PM Grand Ballroom C2, Conv. Center Speaker: Eloy Rodriguez	<b>Science Seminar</b> 1:30–3:00 PM Grand Ballroom C3, Conv. Center Speaker: Deborah J. Thomas
1:00 PM				
2:00 PM	<b>AGU Lecture</b> 2:00–3:00 PM Grand Ballroom C1, Conv. Center Speaker: Andrew Dessler	<b>NGSS Town Hall Meeting</b> (NGSS @ NSTA) 2:00–3:00 PM Grand Ballroom C2, Conv. Center Speaker: Stephen L. Pruitt	<b>NSTA Chapter and District Meet and Greet in Honor of Wendell Mohling</b> 2:00–3:30 PM Exhibit Hall, Conv. Center	
3:00 PM				
4:00 PM	<b>Robert H. Carleton Lecture on NGSS</b> (NGSS @ NSTA) 3:30–4:30 PM Grand Ballroom C1, Conv. Center Speaker: Michael J. Padilla	<b>NSTA/NSELA Issues Forum</b> (NGSS @ NSTA) 3:30–5:30 PM Lone Star Ballroom A, Grand Hyatt		
5:00 PM				
6:00 PM	<b>Special Evening Session</b> 6:00 PM–12 Midnight Salon A Marriott Rivercenter <b>A Festival of Award-winning Film Classics and Inspiring Legends, Part II</b>		<b>NSTA Teacher Awards Gala</b> 6:00–8:45 PM Salon H/1 Marriott Rivercenter Ticket Required (M-5)	
7:00 PM				
8:00 PM				



**SESSION 5**

**Your Students Stuck Inside? No Problem; Bring the Outside In! (Env)**

(Elementary) 208, Convention Center  
**José M. Rios** (*jrrios@u.washington.edu*), University of Washington, Tacoma

Bad weather outside? No problem! Come learn how to make and use Environmental Education (EE) centers to teach important science content and inquiry skills.

**SESSION 6**

**Interactive Science Notebooks: Putting the Next Generation Practices into Action (Gen)**

(Elementary–Middle Level) 212A, Convention Center  
**Kellie M. Marcarelli** (*kmarcarelli@sandi.net*), Knox Middle School, San Diego, Calif.

We'll highlight notebooking strategies that reinforce the eight practices outlined in the Next Generation Science Standards to prepare students for college and careers.

**SESSION 7**

**ASTC Session: Online Astronomy Teacher Professional Development—Project Share and The New York Times Knowledge Network (Earth)**

(Informal Education) 213A, Convention Center  
**Keely Finkelstein** (*keelyf@astro.as.utexas.edu*), The University of Texas at Austin

Project Share (Texas) and *The New York Times* Knowledge Network offer McDonald Observatory and StarDate astronomy content to online teacher professional development communities.

# ELEMENTARY EXTRAVAGANZA

**Friday, April 12, 2013**  
**8:00–10:00 AM · Convention Center · Ballroom B**

- Hands-on activities
- Preview science trade books
- Learn about award and grant programs
- Walk away full of ideas and arms filled with materials
- Door prizes and refreshments—Win an iPad!
- 100+ presenters

Sponsored by:



Organizations participating in the Elementary Extravaganza include the Association of Presidential Awardees in Science Teaching, the Council for Elementary Science International, the NSTA Committee on Preschool–Elementary Science Teaching, *Science & Children* authors and reviewers, and the Society of Elementary Presidential Awardees.



SESSION 8 (three presentations)

(College)

*Bowie C, Grand Hyatt*

**SCST Session: Using Bean Beetles to Encourage Inquiry in a Nonmajors Early College High School Course (Bio)**

**Betsy Morgan** (*elizabeth.r.morgan@lonestar.edu*), Lone Star College–Kingwood, Tex.

**Brian R. Shmaefsky** (*brian.r.shmaefsky@lonestar.edu*), SCST President, and Lone Star College–Kingwood, Tex.

Join us as we discuss the outcomes of a semester-long inquiry experiment using bean beetles, and similarities and differences between nonmajors and majors as well as early college high school students and traditional college students.

**SCST Session: Critical Thinking and Case Studies: What's the Connection? (Bio)**

**Heide Hlawaty** (*hhlawaty@metropolitan.edu*), Metropolitan College of New York, N.Y.

The learning of science in an experiential learning format should incorporate both the doing of science to learn it and supporting the development of learners' critical thinking and deep learning talents. Using case study narratives in a human biology course, we'll evaluate elements of critical thinking.

**SCST Session: Thriving or Just Surviving: Helping Freshman Science Majors Find Their Game (Bio)**

**Kerry L. Cheesman** (*kcheesma@capital.edu*), Capital University, Columbus, Ohio

A significant percentage of students coming to college have not mastered the essential study skills needed to do well during their first year, leading to high rates of withdrawals or movement to majors in nonscience fields. Hear how our seminar for first-year science students has shown an increase in grades in biology and chemistry courses for those who take the seminar.

SESSION 9

**Writing to Learn Through Science Notebooks/Journals in Elementary and Secondary Classrooms (Gen)**

(Elementary–High School)

*Crockett C, Grand Hyatt*

**Nancy K. Magnuson** (*nmagnuson@fsu.edu*) and **Melanie Hester** (*mhester@admin.fsu.edu*), Florida State University School, Tallahassee

Find out how students can benefit from using science notebooks in K–12 classrooms. Lots of take-home resources!

SESSION 10

**Be Part of MERITO (Multicultural Education for Resource Issues Threatening Oceans) (Env)**

(Informal Education)

*Crockett D, Grand Hyatt*

**Rocio Lozano** (*rocio.lozano@noaa.gov*), NOAA Office of National Marine Sanctuaries, Silver Spring, Md.

Come delve into how ocean education has been enhanced for multicultural communities via focused needs assessments. MERITO provides programs to motivate culturally diverse students to pursue careers in marine sciences.

SESSION 11

**Reinforce Scientific and Engineering Practices Through Clinical Research with Virtual Clinical Trials (Bio)**

(High School–College/Inf.)

*Lone Star Blrm. C, Grand Hyatt*

**Kristi G. Bowling** (*kristi.bowling@rice.edu*), Rice University, Houston, Tex.

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

Experience this free online game that engages high school students in scientific and biomedical engineering practices through the design and evaluation of virtual clinical trials.

SESSION 12

**Migrant Students Experience Success Through a University Partnership (Gen)**

(College/Supervision)

*Lone Star Ballroom E, Grand Hyatt*

**Kate A. Baird** (*kbaird@iupuc.edu*), Indiana University–Purdue University Columbus

**Stephanie S. Coy** and **Debra Thomas** (*thomasd@bcsc.k12.in.us*), Bartholomew Consolidated School Corp., Columbus, Ind.

Preservice teachers are brought together with children of migrant workers to support science inquiry. Candidate compassion and enthusiasm provide service to ELL students who are vulnerable of falling between the cracks.

SESSION 13

**NARST Session: The Interaction of Knowledge About and Teaching of Nature of Science (Gen)**

(General)

*Presidio C, Grand Hyatt*

**Judith S. Lederman** (*ledermanj@iit.edu*), **Norman G. Lederman** (*ledermann@iit.edu*), and **Stephen A. Bartos** (*sbartos@iit.edu*), Illinois Institute of Technology, Chicago

Join us as we address research-based approaches to successfully teach nature of science (NOS). Participants will be actively engaged in classroom-tested model activities.

## SESSION 14

**Creating a STEM School District (Gen)***(General)**Sequin A, Grand Hyatt***Bob Sotak** ([bsotak@mac.com](mailto:bsotak@mac.com)), Everett (Wash.) Public Schools

We will share strategies and tools we used to design a STEM school district, impacting all K–12 students and articulating with local colleges and universities.

## SESSION 15

**Enhancing Self-efficacy in Elementary Science Teaching: Effects of a Multi-Year, Whole-School Professional Learning Program (Gen)***(General)**Texas Ballroom C, Grand Hyatt***Bev Marcum** ([bmarcum@csuchico.edu](mailto:bmarcum@csuchico.edu)), California State University, Chico

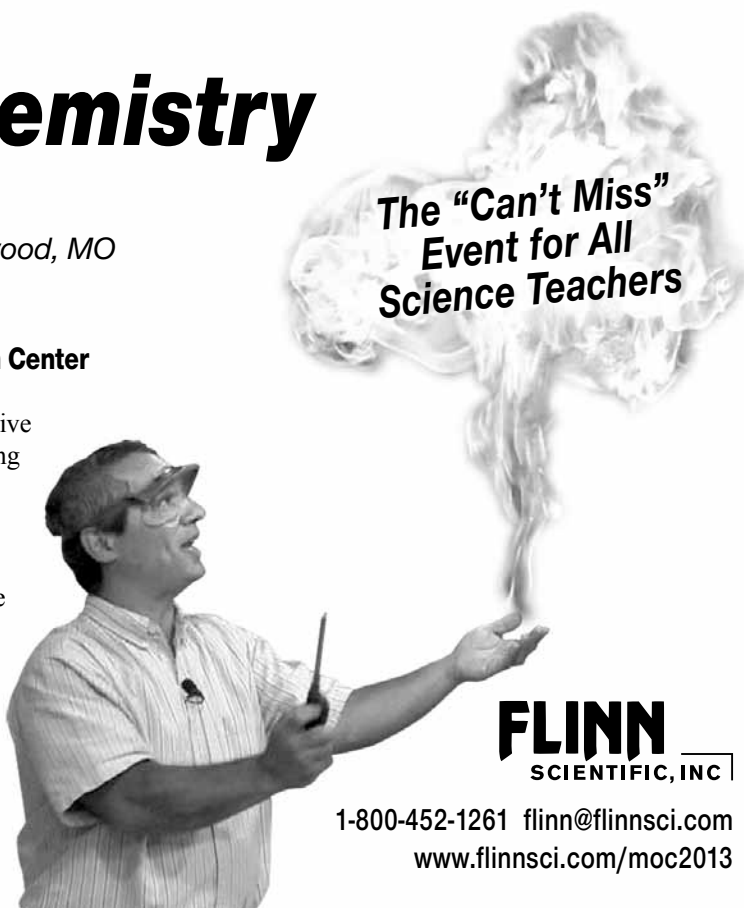
Come learn how elementary teachers increased their self-efficacy for teaching science as inquiry as a result of a three-year whole-school professional learning program.

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

**The Teaching of Chemistry***By Bob Becker, Kirkwood High School, Kirkwood, MO***Friday, April 12, 2013 • 10:00 a.m. – 11:45 a.m.****Grand Ballroom C1, Henry B. Gonzalez Convention Center**

Demonstrations are the chemistry teacher's most effective tool in bringing abstract concepts to life. Award-winning teacher Bob Becker has discovered that many of his favorite demonstrations also help illustrate his philosophy of teaching.

The core beliefs Bob holds about his students, about the art of communication, and about respect and empathy are reflected quite effectively in the color changes, flames, and KABOOMS of his demos. Come and see 21 of Bob's favorite demonstrations, and how they illustrate *The Teaching of Chemistry*. All science teachers—not just chemistry teachers—will enjoy this one-of-a-kind presentation. Handouts will be provided.



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**SESSION 16**

**Next Generation Science Standards: Teacher Insights from the Writing Team—Elementary Level (Gen)**

*(Elementary) Texas Ballroom F, Grand Hyatt*

**Vanessa Westbrook** (*vanedani\_61@yahoo.com*), Chairperson, NSTA San Antonio National Conference, and Westbrook Consulting, Austin, Tex.

**Betsy O'Day** (*betsy.oday@gmail.com*), Hallsville Intermediate School, Hallsville, Mo.

**Jaymee Herrington** (*jaymeel74@yahoo.com*), American Institute for Research, Washington, D.C.

**Mariel Milano**, Orange County Public Schools, Orlando, Fla.

**Jacqueline R. Smalls** (*jacquelinesmalls@hotmail.com*), Langley STEM Education Campus, Washington, D.C.

Join elementary teachers who are writers of the highly anticipated Next Generation Science Standards for an exploration of the development of NGSS—from teachers for teachers. Writers will share the thinking and ideas that went into writing this landmark document and the challenges they experienced along the way. This session will address life science, physical science, and Earth and space science and will explore what NGSS will mean for classroom science teachers.

**SESSION 17**

**NSELA Session: Scaffolding Toward Argumentation: A Framework for K–12 Science Education and Its Implications for Inquiry (Gen)**

*(General) Travis A, Grand Hyatt*

**Douglas J. Llewellyn** (*dllewellyn@sjfc.edu*), St. John Fisher College, Rochester, N.Y.

Walk away with activities that scaffold students toward making claims and offering supportive evidence to justify their claims, thus fostering scientific reasoning skills.

**SESSION 18**

**SYM-1 Follow-Up Session: Get Real! Use Real-Time NOAA Data to Understand Our Changing World (Env)**

*(Middle Level–College) Conf. Room 3/4, Marriott Rivercenter*

**Peg Steffen** (*peg.steffen@noaa.gov*), NOAA National Ocean Service, Silver Spring, Md.

Learn about data, tools, interactive maps, and new lesson plans to help students investigate coastal ecosystems and economies, and how climate change may impact the coast.

**SESSION 19** (two presentations)

*(Middle Level–High School) Conf. Room 15, Marriott Rivercenter*

**Integrating Probes in the Interactive Notebook**

**(Gen)**

**Jen MacColl** (*jmaccoll@susd.org*), Chaparral High School, Scottsdale, Ariz.

Integrating probes in the Interactive Notebook allows students to take risks, stimulate thinking, and experience cognitive dissonance. Probing questions allow teachers to recognize students' prior knowledge and misconceptions, and make valuable instructional decisions.

**Using Role-Play to Increase Student Understanding of Abstract Biological Concepts (Gen)**

**Jen MacColl** (*jmaccoll@susd.org*), Chaparral High School, Scottsdale, Ariz.

Integrating role-play by creating videos can make abstract and challenging concepts visible and help students construct an awareness of their own understanding.

**SESSION 20**

**Physics Education Insights by Milken Educators**

**(Phys)**

*(General) Salon B, Marriott Rivercenter*

**Fred R. Myers** (*myersf@glastonburyus.org*) and **Ken Roy** (*royk@glastonburyus.org*), Glastonbury (Conn.) Public Schools Join us for this two-part session. In “Temporary Personal Radioactivity,” we’ll discuss an analysis of radiation emitted by a person injected with radioactive material for a particular medical diagnosis and share some related human aspects of the story. In “Hands-On Physics—Are You ‘Courting’ Safety?!” we’ll share strategies on how to make physics activities safer in an effort to reduce exposure to liability issues.

**SESSION 21**

**PDI WISP Pathway Session: Reading and Writing the News (Gen)**

*(Middle Level–High School/Inf.) Salon L, Marriott Rivercenter*

**Wendy Saul** (*ewendysaul@gmail.com*), **Alan Newman** (*newmanal@umsl.edu*), and **Laura Pearce** (*laura\_1249@yahoo.com*), University of Missouri–St. Louis

Enhancing science literacy through science journalism has been the goal of this NSF-funded project. The effective measure of science engagement has become a highlight.



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- **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. Examples include:
  - **Web Seminars.** Update your content knowledge with free, 90-minute, online presentations and join the discussion. 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 to add to your classroom instruction.
- The **New Science Teacher Academy** supports second-through fifth-year science teachers during the often challenging initial years by enhancing confidence and teacher content knowledge.

## Expand Your Mind

- **NSTA Press®** publishes 20–25 new titles each year. Browse at the Science Store and connect with authors to have your new book signed. Submit your new book idea to [www.nsta.org/publications/press/authors.aspx](http://www.nsta.org/publications/press/authors.aspx).
- **NGSS @ NSTA.** Find out what's new, connect and collaborate with colleagues on NGSS, and get the resources you need to help prepare for the Next Generation Science Standards.

## Add Your Voice

- **Science Matters,** our major public awareness campaign about science education and science literacy, is designed

to rekindle a national sense of urgency and action among schools and families. Register to receive our monthly e-newsletter.

- The **John Glenn Center for Science Education.** NSTA has embarked on a \$43 million national campaign to make excellence in science teaching and learning a reality for all. The funding will support 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

- Learn about NSTA's 17 awards programs for science teachers, K–College, such as the **Shell Science Lab Challenge**, which provides science laboratory equipment and professional development support to winning teachers from middle schools and high schools with limited resources. Learn how to win a \$20,000 lab makeover support package.

## Student Competitions:

- **Toshiba/NSTA ExploraVision®** is a team-based K–12 student competition that awards up to \$240,000 in savings bonds annually.
- **THE DUPONT CHALLENGE®** Science Essay Competition for grades 7–12 students awards cash prizes and an expenses-paid trip to Disney World® and the Kennedy Space Center.
- **The Siemens We Can Change the World Challenge,** a premier national environmental sustainability competition for grades K–12 students, requires creative solutions that impact our planet. More than \$300,000 in scholarships and prizes is awarded.
- **eCYBERMISSION** is an online, STEM-related (Science, Technology, Engineering, and Mathematics) competition for students in grades 6–9.

NSTA National Science Teachers Association

SESSION 22

**Transforming Chemistry Instruction Through Modeling Experiences** (Chem)

(General) Alamo Salon B, Marriott Riverwalk

**Tasha M. Frick** ([tmf3d@mtmail.mtsu.edu](mailto:tmf3d@mtmail.mtsu.edu)) and **Heather L. Barker** ([hlb3g@mtmail.mtsu.edu](mailto:hlb3g@mtmail.mtsu.edu)), Middle Tennessee State University, Murfreesboro

Following an overview of modeling instruction, the role of classroom discourse will be highlighted, including results based on classroom observations and teacher interviews.

SESSION 23



**The Do's and Don't's of the Flipped Classroom: Best Practices** (Bio)

(Middle Level–College) Alamo Salon C, Marriott Riverwalk

**James Schreiner** ([jschreiner@bbchs.org](mailto:jschreiner@bbchs.org)) and **Tony Swafford** ([tswafford@bbchs.org](mailto:tswafford@bbchs.org)), Bradley-Bourbonnais Community High School, Bradley, Ill.

Having “flipped” for two years, we have insight into what works and what doesn't. Join us as we share our experiences to help facilitate implementation in your classroom.

SESSION 24 (two presentations)

(Middle Level–High School) Alamo Salon E, Marriott Riverwalk

**Santhi Stripped of Her Silver: Using an Olympic Case Study as the Basis for a Biotechnology Lab Sequence** (Bio)

**Jeff Newton**, Lakes Community High School, Lake Villa, Ill.

Experience a lab activity that uses the case study of a female Olympian disqualified due to her XY genotype. This activity teaches students about biotechnology and gender determination.

**Driven to Learn: How Questions Can Drive Instruction** (Gen)

**Brandon Watters** ([bwatters@lakeseagles.com](mailto:bwatters@lakeseagles.com)), Lakes Community High School, Lake Villa, Ill.

**Kari Parnin** ([kparnin@hinsdale86.org](mailto:kparnin@hinsdale86.org)), Hinsdale South High School District 86, Darien, Ill.

Is your classroom driven? Based on research from Northwestern University, learn how our school has taken inquiry-style instruction to the next level using driving questions.



SESSION 25 (two presentations)

(High School) Alamo Salon F, Marriott Riverwalk

Presenter: **Sean R. Carmody** ([sean.r.carmody@vanderbilt.edu](mailto:sean.r.carmody@vanderbilt.edu)), Vanderbilt University, Nashville, Tenn.

**Race, Socioeconomic Status, and the Medical Ethics of Cancer Research** (Bio)

**Sean R. Carmody** ([sean.r.carmody@vanderbilt.edu](mailto:sean.r.carmody@vanderbilt.edu)), **Tonja Dandy**, and **Kimberly Mulligan** ([kimberly.x.mulligan@vanderbilt.edu](mailto:kimberly.x.mulligan@vanderbilt.edu)), Vanderbilt University, Nashville, Tenn.

**Brian Harrell** ([brian.harrell@mnps.org](mailto:brian.harrell@mnps.org)), Stratford STEM Magnet High School, Nashville, Tenn.

Cancer affects every American. Emphasis will be placed on the roles of race and socioeconomic status on student views of cancer and medical ethics.

**Progress Monitoring and Standards-based Instruction** (Bio)

**Amy K. Elliott** ([aelliott@lakeseagles.com](mailto:aelliott@lakeseagles.com)), Lakes Community High School, Lake Villa, Ill.

See how high school biology students become a part of the formative assessment process. Use or adapt this tried-and-true template for effectively communicating learning targets to students at the onset of a unit and empower them to track their progress throughout. Learn how both content and college-readiness skills can be easily managed and monitored in a very practical way for both teacher and students.

SESSION 26

**Addressing Misconceptions During the First Two Weeks of Chemistry** (Chem)

(High School) Travis, Marriott Riverwalk

**Matthew L. Brodeur** ([brodeur.ml@easthartford.org](mailto:brodeur.ml@easthartford.org)) and **Nicole L. Pikul** ([shea.nl@easthartford.org](mailto:shea.nl@easthartford.org)), East Hartford High School, East Hartford, Conn.

Learn how to confront common misconceptions early in the course and increase your students' curiosity and interest while previewing core chemistry content.

**8:00–9:00 AM Workshops****Understanding and Studying Clouds in the Elementary Classroom (Earth)***(Elementary–High School)* 001A, Convention Center**Deanna TeBockhorst** (*deanna@atmos.colostate.edu*), Colorado State University, Fort Collins**Preston M. Lewis, Jr.** (*preston.lewis@nasa.gov*), NASA Langley Research Center, Hampton, Va.**Todd Ellis** (*todd.ellis@oneonta.edu*), SUNY Oneonta, N.Y. Discover how clouds influence the world around us, gaining a deeper understanding of clouds and tools for understanding the “scientific language” of the atmosphere.**The IRIS In-Class Project: Free Seismology Learning Sequences Accompanied by Online Professional Development (Earth)***(Middle Level–High School)* 001B, Convention Center**Michael Hubenthal** (*hubenth@iris.edu*) and **Tammy Bravo** (*tkb@iris.edu*), IRIS, Washington, D.C.

Explore a collection of hands-on 5E (Engage, Explore, Explain, Elaborate, and Evaluate) learning sequences

featuring videos, animations, and visualizations. Topics range from earthquakes to Earth structure, and in-depth explorations of individual subtopics.

**Fee Fi Fo Fum! Getting Elementary Students Excited About Plants! (Bio)***(Preschool–Elementary)* 202A, Convention Center**Steven C. Smith** (*mrsmith@purdue.edu*), Purdue University, West Lafayette, Ind.**Amy J. Smith** (*smitha@frankfort.k12.in.us*), Blue Ridge Primary School, Frankfort, Ind.**Kristen Poindexter** (*kpoindexter@msdwt.k12.in.us*), Spring Mill Elementary School, Indianapolis, Ind.

How do you get students excited about plants? With a giant and some magic beans, of course! Join us as we share hands-on activities about plants.

# STEM SCOPES

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**Telling the Science Story: Finding a Common Ground Between the Common Core and NRC Framework/NGSS** (Gen)

(Elementary) 213B, Convention Center  
**Christine A. Royce** (*caroyce@aol.com*), Shippensburg University, Shippensburg, Pa.

Lessons that integrate literacy strategies and science concepts will be modeled with participants and an overview of research and connection to Common Core State Standards provided.

**Simple Machines Made Simple** (Phys)

(Elementary–Middle Level) 216A, Convention Center  
**Julie A. Horner** (*julie.horner@msichicago.org*) and **Kevin Conley** (*kevin.conley@msichicago.org*), Museum of Science and Industry, Chicago, Ill.

Learn how to teach simple machines using everyday classroom objects and materials. Free lesson plans and prizes!

**Science Fair with Flair: Using Desk Drawer Materials** (Gen)

(Preschool–Elementary) 217A, Convention Center  
**Jude Kesl** (*judekesl@gmail.com*), Milwaukee (Wis.) Public Schools

Presider: Lisa Martin, Milwaukee (Wis.) Public Schools  
Develop testable questions using materials found in most teachers' desk drawers. These questions can be used for early childhood and elementary science fair projects.

**DuPont Session: DuPont Presents “Driving Science”** (Phys)

(High School) Bonham B, Grand Hyatt  
**Dorothy Moss** (*dmoss@clemsun.edu*) and **Glenda Pepin** (*gpepin@clemsun.edu*), Clemson University, Greenville, S.C.  
Drivers, start your engines! Engineers, scientists, engine specialists, and pit crew members make that statement possible. Join us in this workshop as we examine STEM in motorsports through hands-on investigations and multimedia resources.

**The Problem with Plastics** (Gen)

(Middle Level) Bonham C, Grand Hyatt  
**Andrea Swensrud** (*scienceed@kqed.org*), KQED, San Francisco, Calif.

**Sarah Carter** (*scarter@tpt.org*), Twin Cities Public Television, St. Paul, Minn.

Explore the properties of plastics, the impact they have on our environment, and alternatives for their use through engaging media and hands-on lessons.

**Cell Phones in Science Class!?** (Gen)

(High School–College/Informal) Bonham D, Grand Hyatt  
**Rob Lamb** (*rlamb@psdr3.org*), Pattonville High School, Maryland Heights, Mo.

**Jennifer Hope** (*jmhope@mckendree.edu*), Mckendree University, St. Louis, Mo.

Presider: Rob Lamb

Using simple technology to analyze and create infographics can hook your students and increase skills of interpretation when it comes to charts, graphs, and data tables.

**Show Me the Data!** (Gen)

(General) Bowie B, Grand Hyatt  
**CJ Thompson** (*cthompson@rice.edu*), **Lisa Webber** (*lwebber@rice.edu*), and **Lara Arch** (*larch1@rice.edu*), Rice University, Houston, Tex.

Instead of memorizing “rules,” inquire into the best way to represent data. Leave this workshop with a different perspective and a student-centered lesson!

**Terrific Science Games for Middle Schools** (Gen)

(Middle Level/Supervision) Lone Star Ballroom A, Grand Hyatt  
**Rodelio A. Abuan** (*odie@scienceterrificgames.com*), Sam Houston High School, Houston, Tex.

**Ma Corazon Abuan** (*ma.corazonabuan@yahoo.com*), Spring, Tex.

Learn to make your own science games and puzzles that are fun and engaging, enhance science lessons, promote deeper understanding of concepts, increase learning retention, improve skills in identifying, classifying, comparing/contrasting, and application and problem solving. The games and puzzles can be used for individual or group tutorials and use cheap, durable, and very affordable materials.

**Drawings Add to Data...and Students Like to Do Them!** (Gen)

(Informal Education) Lone Star Ballroom B, Grand Hyatt  
**Phyllis Katz** (*pkatz15@gmail.com*), Retired Educator, Silver Spring, Md.

Even stick figures will do. Let's draw and consider effective science learning and teaching with a unique coding system. Join me for thoughtful fun.

**Planning and Designing Safe, Sustainable, and Flexible Facilities for Inquiry/Project-based Science (Science Facilities 101) (Gen)**

(General) *Presidio A/B, Grand Hyatt*

**LaMoine L. Motz** (*llmotz@comcast.net*), 1988–1989 NSTA President, and Science Education and Facilities Specialist, White Lake, Mich.

**Juliana Texley** (*jtexley@att.net*), NSTA President-Elect, and Palm Beach State College, Boca Raton, Fla.

**Sandra West Moody** (*sw04@txstate.edu*), Texas State University, San Marcos

Presider: LaMoine L. Motz

So you want new science facilities? Does your curriculum define your science teaching facility? With more than 15 years of conducting visits and presentations of new and renovated school science facilities, the author team of *NSTA Guide to Planning School Science Facilities* (2nd ed.) will show you the “basics” of science facility planning, design, and budgeting for safe and sustainable facilities. See page 47 for “Science Facilities 102” session.

**Global Connections: Forests of the World (Env)**  
(*Informal Education*) *Republic B, Grand Hyatt*

**Jaclyn Stallard** (*jstallard@plt.org*) and **Al Stenstrup** (*astenstrup@plt.org*), Project Learning Tree, Washington, D.C.

The forests of the world are changing. Project Learning Tree’s new secondary module, *Global Connections: Forests of the World*, explores this vital component of Earth’s natural systems. Take home an activity module and poster sets.

## Come Get Online Access and Answers to NGSS

### NGSS@NSTA STEM STARTS HERE

Where can I access the Next Generation Science Standards online? What does a performance expectation look like?

These questions and more will be answered at NSTA’s first-ever face-to-face tutorials on NGSS.

NGSS writers and other experts will give 20-minute tutorials on NGSS at the top of each hour and then answer questions and lead informal discussions. You’ll get a chance to access and view the standards online, become oriented to and familiar with the NGSS architecture, and have an opportunity to discuss NGSS in an informal environment.

Come for 20 minutes or the entire hour. No need to register, just drop in to these FREE events hosted by NSTA.

## NGSS Classroom

### Tutorials Given at the Top of the Hour

Between 9:00 AM and 5:00 PM  
Thursday, Friday, Saturday

Located next to Exhibitor Registration,  
Street Level of Convention Center.  
Look for signs.





**NSTA Press® Session: Classroom Activities to Accompany *Stop Faking It! Force & Motion* (Phys)**

(Elementary–High School) *Texas Ballroom D, Grand Hyatt*  
**Bill Robertson** (*wrobert9@ix.netcom.com*), Bill Robertson Science, Inc., Woodland Park, Colo.

In response to teacher demand, there is now a set of classroom activities on force and motion to accompany the *Stop Faking It! Force & Motion* book. The learning cycle is incorporated in an easy-to-use, teacher-friendly, research-based curriculum for upper elementary and conceptually based high school lessons that can help your students understand force and motion concepts. Join the author for activities from the book. Lame jokes quite possible.

**Don't miss these Friday NGSS-related sessions**

Next Generation Science Standards: Teacher Insights from the Writing Team—Elementary Level (page 20)

Next Generation Science Standards: Teacher Insights from the Writing Team—Life Sciences (Middle/High School) (page 43)

Next Generation Science Standards: Teacher Insights from the Writing Team—Physical Sciences (Middle/High School) (page 59)

Next Generation Science Standards: Teacher Insights from the Writing Team—Earth and Space Sciences (Middle/High School) (page 78)

Featured Presentation: Next Generation Science Standards Town Hall Meeting  
Speaker: Stephen L. Pruitt (page 86)

Robert H. Carleton Lecture: Meeting the Challenge of the Next Generation Science Standards  
Speaker: Michael J. Padilla (page 100)

NSTA/NSELA Issues Forum (page 108)

**NGSS@NSTA**  
**STEM STARTS HERE**

**Playing Games to Learn Complex Environmental Science Concepts (Env)**

(High School) *Texas Ballroom E, Grand Hyatt*  
**Kristen R. Dotti** (*kristen\_dotti@yahoo.com*), Christ School, Arden, N.C.

Playing the role of a coal-fired power plant owner, students learn cap-and-trade principles, sulfur-reduction techniques, cost-cutting measures, and the terminology of the industry.

**A Lab Exercise Using the MODELING Method (Phys)**

(High School) *Salon J, Marriott Rivercenter*  
**Douglas Johnson** (*djohnson44@ameritech.net*), West High School, Madison, Wis.

Experience how a single lab can deliver several important lessons and address a misconception or two while empowering students and deepening their understanding.

**Equal Access to Science: Universal Design and Students with Disabilities (Gen)**

(Middle Level–High School) *Salon M, Marriott Rivercenter*  
**Lyla M. Crawford** (*lylac@uw.edu*), University of Washington, Spokane

**Rachel Zimmerman Brachman** (*rachel.zimmerman-brachman@jpl.nasa.gov*), NASA Jet Propulsion Laboratory, Pasadena, Calif.

Full inclusion of students with disabilities in STEM involves both accommodation strategies for students and universal design of instruction that enhances learning for all students.

**Modeling Biology: Energy in an Ecosystem (Bio)**

(High School) *Alamo Salon D, Marriott Riverwalk*  
**Angela C. Gard** (*gardangela0@gmail.com*), North Carolina State University, Raleigh

**Rebecca M. Stanley** (*rstanley@ncnewschools.org*), North Carolina New Schools Project, Raleigh

Perform a classroom simulation to understand energy in an ecosystem. This guided inquiry approach will explore the differences between modeling and traditional instruction by analyzing results through graphs, diagrams, and class discussion.

# What Works Workshops for 21<sup>st</sup>-Century Classrooms

## Houghton Mifflin Harcourt Workshop Schedule Henry B. Gonzales Convention Center, Room 204B

### Thursday, April 11

#### 7:30–9:00 am: Session 2234

STEM Challenges for the Classroom, Part 1.  
Author—*Michael DiSpezio*

#### 9:30–11:00 am: Session 2233

Connecting to Chemistry: Igniting Student  
Motivation with STEM Examples and Ideas.  
Author—*Michael DiSpezio*

#### 11:30–1:00 pm: Session 2240

That's Amazing! Explore the Bizarre,  
Cool, and Exciting World of Project-Based  
Biology.  
Author—*Mike Heithaus*

### Friday, April 12

#### 12:00–1:30 pm: Session 2241

Ecology Adventures: Motivating Students  
through Project-Based Learning.  
Author—*Mike Heithaus*

#### 2:00–3:30 pm: Session 2231

Extra, Extra! Read All About It! Taking  
Biology from the News to the Classroom.  
Author—*Stephen Nowicki*

#### 4:00–5:30 pm: Session 2235

More STEM Challenges for the Classroom,  
Part 2.  
Author—*Michael DiSpezio*

### Saturday, April 13

#### 8:00–9:30 am: Session 2236

Misconception Mania: Exciting and  
Engaging Ways to Address Common  
Misunderstandings in K-8 Science.  
Author—*Michael DiSpezio*

#### 10:00–11:30 am: Session 2230

Extra, Extra! Read All About It! Taking  
Biology from the News to the Classroom.  
Author—*Stephen Nowicki*

#### 12:00–1:30 pm: Session 2237

Meeting the Needs of Today's Physics  
Students.  
National Consultant—*Dave Kowal*

#### 2:00–3:30 pm: Session 2238

From Big Bird to Bird Brains—How Fun  
with Our Feathered Friends Helps  
Students Learn Science.  
Author—*Steve Nowicki*

#### 4:00–5:30 pm: Session 2232

Differentiating Instruction in Today's  
Chemistry Classroom.  
National Consultant—*Dave Kowal*

## Win a Mini Tablet!

Guests that attend any of our  
workshops or in-booth activities  
can enter to **win** one of two  
**mini tablets\*** that will be raffled  
off during the conference.



## Meet Our Authors and Get a Signed Copy of Their Books.



### Elizabeth Rusch

Elizabeth Rusch is an award-  
winning children's author  
and has written two books  
for HMH's highly-acclaimed

*Scientists in the Field* series. Elizabeth will be  
signing copies of her book *The Mighty Mars  
Rovers: The Incredible Adventures of Spirit  
and Opportunity*.

**Booth Signing: Friday, April 12**  
**Time: 3:15 PM**



### Stephen Nowicki

Dr. Stephen Nowicki is the  
author of *Holt McDougal  
Biology*. Dr. Nowicki is a  
Professor in the Departments

of Biology, Psychology, and Neurobiology at Duke  
University and is currently the Dean and Vice  
Provost for Undergraduate Education. Dr. Nowicki  
will be signing copies of *Holt McDougal Biology*.

**Booth Signing: Saturday, April 13**  
**Time: 12:00 PM**

## Visit Houghton Mifflin Harcourt at Booth #1526

\*Prize is to be used for educational/classroom purposes. Applicable laws and policies may restrict educators from accepting certain items, including raffle and contest prizes. Each prizewinner must obtain approval from the appropriate school authority for the acceptance of the prize and is responsible for notifying Houghton Mifflin Harcourt immediately if approval is denied. Must be a current educator to qualify for the drawing. Only one entry per person will be accepted. Winners do not need to be present to win. Facebook® is a registered trademark of Facebook, Inc. Twitter® is a registered trademark of Twitter, Inc.

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## 8:00–9:00 AM Exhibitor Workshops

### Hands-On Hydropower (Gen)

(Grades 4–12) 007C, Convention Center

Sponsor: KidWind Project

**Joseph T. Rand** ([joe@kidwind.org](mailto:joe@kidwind.org)) and **Michael Arquin**, KidWind Project, St. Paul, Minn.

Join KidWind as we explore hydropower—we have finally developed a hydropower system that meets our standards. It is easy to build, low cost, allows for a variety of experiments, and doesn't make a huge mess! Plus, you can use the same gear to explore wind power! Lots of great physics and environmental science concepts can be explored in this robust kit.



### NASA's Next Generation Science Classroom (Earth)

(Grades K–5) 103B, Convention Center

Sponsor: NASA Science Mission Directorate E/PO

**Cassie Soeffing**, Institute for Global Environmental Strategies, Arlington, Va.

**Ruth Paglierani** and **Kyle W. Fricke**, University of California, Berkeley

**Andi Nelson** and **Lindsay M. Bartolone**, Adler Planetarium, Chicago, Ill.

**Sheri Klug Boonstra**, Arizona State University, Tempe

**Kristin Wegner**, University Corporation for Atmospheric Research, Boulder, Colo.

**Ginger J. Butcher**, Sigma Space, Greenbelt, Md.

**Dorian W. Janney**, NASA Goddard Space Flight Center, Greenbelt, Md.

**Pamela K. Harman**, SETI Institute, Mountain View, Calif.

**Brandon Lawton** and **Dan McCallister**, Space Telescope Science Institute, Baltimore, Md.

**Edgar A. Bering**, University of Houston, Tex.

**Greg Schultz**, Astronomical Society of the Pacific, San Francisco, Calif.

**Lauren Brodsky**, The Lawrence Hall of Science, University of California, Berkeley

**Georgia Bracey**, Southern Illinois University, Edwardsville.

Participate in inquiry-based hands-on science activities that you can use with your students. These resources focus on crosscutting concepts aligned with the Next Generation Science Standards, and cover the spectrum of Earth and space science topics. The activities and hundreds more are freely available through NASA Wavelength, a new digital library for educators.

### Turn Your Science Classroom into a STEM Classroom with a WebCam Laboratory (Gen)

(Grades 6–12) 205, Convention Center

Sponsor: It's About Time

**David Birchler**, IAT Interactive, LLC, Mount Kisco, N.Y.

Bring discovery-based science lessons into your classroom using a webcam. WebCam Laboratory allows you to easily observe the natural world. Would you like to measure the size of a crater or the length of single-celled organisms? Want to analyze the movement of a pendulum? With WebCam Laboratory, it's just a click away!



## Science, Fashion, and Fun! Genes in a Bottle™ Kit (Bio)

(Grades 6–College)

217C, Convention Center

Sponsor: Bio-Rad Laboratories

**Leigh Brown**, Bio-Rad Laboratories, Hercules, Calif.

Isolate your own DNA and capture your unique essence in our stylish NEW helix-shaped necklaces! From cell structure to genetics to the chemistry of life, this workshop is perfect for all education levels, integrating multiple life science standards in a single lesson.

## 8:00–9:15 AM Exhibitor Workshop

### Science, the Literacy Connection, and the Common Core (Gen)

(Grades K–6)

214B, 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 help integrate reading and language arts into your science programs. Learn how your students can experience the enjoyment of learning science and make the literacy connection with Delta Science Modules. Receive a workshop packet and related Delta materials.

# Play Click! A Photo Scavenger Hunt at NSTA

## Sponsored by Ward's Science

### Download the NSTA App to Play and Win up to \$600 in STEM Products!

All it takes is a smart phone or tablet, and a desire to explore the NSTA conference, and you could win the latest STEM products from Ward's Science.

Here's how it works:

- Download the NSTA App in your app store
- Complete challenges by snapping photos of yourself at the show, at Ward's Science booth and workshops, and having fun in San Antonio!
- Earn points for each challenge, or for being the first to earn badges.

**1st Prize** A Ward's DataHub unit of your choice. A \$600 value.

**2nd Prize** Ward's Digital Slides: High School Life Science Set. A \$250 value.

**3rd Prize** TeacherGeek Advanced Rubber Band Racer, Classroom 10-Pack. A \$150 value.



## 8:00–9:30 AM Exhibitor Workshops

### The Next Generation of Science Virtual Labs for the Entire Science Curriculum—No Cleanup Required! (Chem)

(Grades 9–12)

006B, Convention Center

Sponsor: Pearson

**Brian Woodfield**, Brigham Young University, Provo, Utah  
Brian Woodfield, author and creator of Pearson’s innovative *Virtual Lab* series, will demo some of his latest eye-popping virtual labs, which are so visually realistic you have to see them to believe them. Whether you are short on time or short on lab materials, virtual labs give you the flexibility to experiment and meet your students where they are in the digital world.

### Achievable Inquiry in AP\* Biology (Bio)

(Grades 9–12)

006C, Convention Center

Sponsor: PASCO scientific

#### Presenter to be announced

Discover how probeware transforms traditional labs into quick, quantitative inquiry labs. Engage in hands-on activities with PASCO’s intuitive SPARKvue® software and easy-to-use probes. Select from two labs to try from our new *Advanced Biology through Inquiry* manual that addresses the new College Board Curriculum.

\*AP is a registered trademark of the College Board, which was not involved in the production of, and does not endorse, this product.

### Renewable Energy Exploration with SPARKscience and iPad (Env)

(Grades 6–8)

006D, Convention Center

Sponsor: PASCO scientific

#### Presenter to be announced

In this hands-on workshop, you’ll investigate energy output from a solar cell and wind turbine under varying environmental conditions. This standards-based, state-of-the-art solution jointly designed by PASCO and Horizon Fuel Cell Technology supports your Earth or environmental science program. Data will be collected with iPads using SPARKvue® HD.

### Introducing Simple Machines into the Elementary Classroom with LEGO® Bricks (Phys)

(Grades 1–3)

007A, Convention Center

Sponsor: LEGO Education

**Jessica Pope**, LEGO Education, Pittsburg, Kans.

Experience firsthand how you can develop your grades 1–3 students’ understanding of science, engineering, and mathematics concepts using the Simple Machines set from LEGO Education. Participants will explore gears by building a model out of LEGO bricks and completing the corresponding classroom activity from the Simple Machines Activity Pack.

### Hard Doesn’t Mean Bad—Helping Students Understand That Facing Challenges Is a Good Thing (Gen)

(Grades 6–9)

007B, Convention Center

Sponsor: eCYBERMISSION

**Sue Whitsett** ([missioncontrol@nsta.org](mailto:missioncontrol@nsta.org)), eCYBERMISSION Outreach Manager, NSTA, Arlington, Va.

How many times have you heard your grades 6–9 students say, “This is too hard” or “My data doesn’t support my hypothesis so I failed” or “I’m no good at science”? Many students are ready to give up if they feel that something is too difficult or if they don’t succeed immediately. Since many scientific discoveries come from challenges, it’s important that students learn how to embrace these challenges and become more comfortable with science. Participants will “do” science and walk away with some lesson plans and resources to take back along with information on a new NSTA competition, eCYBERMISSION, that can provide both rigor and relevance in the classroom.

### Living By Chemistry: Create a Table (Chem)

(Grades 9–12)

007D, Convention Center

Sponsor: W.H. Freeman of Bedford, Freeman & Worth (BFW) Publishing Group

**Jeffrey Dowling** ([jeffrey.dowling.contractor@bfpwpub.com](mailto:jeffrey.dowling.contractor@bfpwpub.com)), HPHLP Representing Bedford, Freeman & Worth Publishing Group, Hamilton, N.J.

**Angy Stacy**, University of California, Berkeley

Teach rigorous chemistry with guided inquiry! Let’s explore activities that introduce the periodic table and other core chemistry concepts through an historical context. Take home free sample lessons and materials from the *Living By Chemistry* curriculum.

# Maximize Your Conference Experience!

While at the conference, don't forget to:

Pick up your badge holder, your copy of the daily programs, and other materials ahead of time, if possible. Take some time to finalize your daily schedules. Keep your smartphone handy if you've created a calendar on it.

Evaluate the sessions you attend so that they can be added to your transcript.

Divide and conquer if you're attending with friends or colleagues. You can only be at one place at a time, so agree on what to attend and how to share notes and materials from sessions.

Get to the sessions early. Sometimes the smaller rooms fill up quickly.

There will be booths at registration staffed by local teachers. They'll have lots of information on science education activities and happenings in your city and state.

Check out our new NSTA Conference app. Search sessions to build a schedule that integrates your calendar; access maps of the Convention Center, hotels, and Exhibit Hall; share the play-by-play with social media channels; and much more.

Put your cell phone on mute during sessions.

Attend a session or two on a topic that's unfamiliar to you.

Keep a log or journal of the sessions you attended, people you met, and new ideas. Update your homepage, Facebook, tweets, or class Wiki/blog with a summary of what you are learning at the conference. Update your conference transcript.

Introduce yourself to teachers at the sessions or events. The value of a face-to-face conference is meeting and interacting with real people.

**The Science Behind West Nile Virus Infections**

**(Bio)**

*(Grades 9–College)* 008A, Convention Center

Sponsor: Howard Hughes Medical Institute

**Jason Crean**, Lyons Township High School, Western Springs, Ill.

**Laura Bonetta**, Howard Hughes Medical Institute, Chevy Chase, Md.

2012 was the worst year for West Nile virus infections since 2003. To understand why, researchers are studying the many factors that allow West Nile virus to infect multiple hosts and to spread in a population. Take home free classroom-ready resources from HHMI to teach students about infectious diseases and, in particular, ones that are spread by mosquitoes. These resources are easily adapted for various levels of high school curricula, ranging from introductory biology courses through honors, AP, and IB biology.

**Space Camp® and 21st-Century Learning: The Crossroads of Formal and Informal Education**

**(Gen)**

*(Grades K–12)* 008B, Convention Center

Sponsor: Space Camp

**Marcia Lindstrom**, Space Camp, Huntsville, Ala.

Specialty camps—especially those dedicated to encouraging the study of science, technology, engineering, and math—are uniquely positioned to provide 21st-century learning skills to young people in the areas of learning/innovation and life/career skills. This workshop explains how Space Camp is bridging the gap between formal and informal education.

**Pairing Gizmos with Common Core ELA—A Perfect Duo!**

**(Phys)**

*(Grades 6–12)* 101B, Convention Center

Sponsor: ExploreLearning

**Corey Peloquin** (*corey.peloquin@explorelarning.com*), ExploreLearning, Charlottesville, Va.

**Pamela Caffery** (*pamela.caffery@sdc.k12.fl.us*), Hillsborough County Public Schools, Tampa, Fla.

Experience the perfect combination of ExploreLearning’s Gizmos with hands-on inquiry and the Common Core State Standards (CCSS) for English Language Arts & Literacy in History/Social Studies, Science, and Technical Subjects. Gain a classroom perspective on how to integrate CCSS through the use of a 5E (Engage, Explore, Explain, Elaborate, and Evaluate) instructional model. Take home a complete unit that has been teacher tested and student approved.

**Exploring Alternative Energy and Careers in STEM**

**(Env)**

*(Grades 9–12)* 102A, Convention Center

Sponsor: Fisher Science Education

**Robert Marshall**, Carnegie Science Center, Pittsburgh, Pa.

As a renewable energy source, solar energy proves to be a vast and inexhaustible resource that’s a clean alternative to fossil fuels. Hydrogen is also useful as a compact energy source in fuel cells/batteries, and many companies are working to develop technologies involving hydrogen energy. Join Robert Marshall, an educator from Carnegie Science Center’s award-winning STEM Center, as he shares information and methods you can use to introduce these options to your students.

**Bring Simple Machine Concepts to Life with Real-World Models!**

**(Phys)**

*(Grades 3–6)* 102B, Convention Center

Sponsor: K’NEX Education

**Presenter to be announced**

Explore that common expression “simple machines make work easier” and investigate hands-on strategies to help students understand simple machine technologies. Build and use K’NEX® simple machine models and discover that simple machines make work easier by multiplying force and distance as well as changing the direction of force. Standards-aligned STEM concepts related to simple machines will be emphasized. Drawing for a K’NEX Education Simple Machine Set!

**Fantastic Physical Science Demonstrations from Flinn**

**(Phys)**

*(Grades 6–12)* 103A, Convention Center

Sponsor: Flinn Scientific, Inc.

**Janet Hoekenga** (*jhoekenga@flinnsci.com*) and **Joan Berry** (*jberry@flinnsci.com*), Flinn Scientific, Inc., Batavia, Ill.

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

**Color, Spectrophotometry, and Teaching the Structure of the Atom**

**(Chem)**

*(Grades 9–12)* 203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

How do we teach topics—such as electron configurations that were graduate school material a generation ago—so that high school students can learn and understand them? Walk away with some effective ways to teach the structure of the

atom. Using a user-friendly spectrophotometer from the new program *A Natural Approach to Chemistry*, explore how light interacts with dyes. Then use unique spectrum cards to show how atoms, color, and spectra are related, making a conceptual bridge between a core chemical technology—making dyes—and the fundamental structure of the atom.

### **What's Soil Got to Do with It? (Bio)**

(Grades K–6) 204A, Convention Center

Sponsor: Nutrients for Life Foundation

**Nancy Bridge** ([info@nutrientsforlife.org](mailto:info@nutrientsforlife.org)), Olympia High School, Orlando, Fla.

How do plants grow? Plant seeds of success and teach biological concepts through hands-on activities by growing plants in your classroom. The standards and inquiry-based Nutrients for Life elementary curriculum and supplemental materials will be provided as we explore properties of soil and how plant growth affects soil.

### **REAL School Gardens: Life Science Comes Alive (Gen)**

(Grades K–5) 204B, Convention Center

Sponsor: REAL School Gardens

**Ellen Robinson** ([erobinson@realschoolgardens.org](mailto:erobinson@realschoolgardens.org)) and **Scott Feille** ([sfeille@realschoolgardens.org](mailto:sfeille@realschoolgardens.org)), REAL School Gardens, Fort Worth, Tex.

Food chains, environments, and interdependence allow students to ground themselves in these concepts by studying the complex web of life that exists just outside the classroom doors. Learn about opportunities to partner with REAL School Gardens and leave newly equipped to make the life sciences come alive for your students.

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

(Grades 9–12) 206A, Convention Center

Sponsor: Carolina Biological Supply

#### **Carolina Teaching Partner**

Perform a guided dissection featuring Carolina's Perfect Solution cats and get the "inside story" on the highest quality preserved specimens available. Learn skinning techniques, review vertebrate anatomy, discover the structures shared by cats and humans, and develop a greater appreciation for the complexity of life. Features Carolina's Perfect Solution preserved cats.

### **Engineer Excitement in Your Classroom with a Carolina STEM Challenge (Phys)**

(Grades 6–12) 206B, Convention Center

Sponsor: Carolina Biological Supply

#### **Carolina Teaching Partner**

Catapult, float, and race your way into hands-on activities that you can use to engage your middle and high school students. At the same time, you can foster both critical-thinking and creative problem-solving skills. Come experience how Carolina makes it easy to incorporate STEM into your classroom. Free handouts and door prizes!

### **Carolina Chemistry Investigations for Advanced Chemistry (Chem)**

(Grades 9–12) 207B, Convention Center

Sponsor: Carolina Biological Supply

#### **Carolina Teaching Partner**

Bring inquiry to your classroom with new Carolina chemistry activities and see your classroom come alive. Carolina's new labs help students develop essential chemistry practices, understand core chemistry concepts, and learn chemistry through inquiry per the new AP Chemistry curriculum. Experience three different activities in this hands-on workshop. Handouts/free giveaways!

### **Chase Your Curiosity and Develop Critical Skills with Discovery Education Science Techbook (Gen)**

(Grades K–12) 209, Convention Center

Sponsor: Discovery Education

**Patti Duncan**, Discovery Education, Lakeville, Pa.

**Brad Fountain**, Discovery Education, Silver Spring, Md. Students are born with a natural curiosity. The resources and instructional strategies utilized in Science Techbook inspire curiosity and develop critical skills in every student. Learn how to use these resources to enhance thinking, collaborating, and problem solving.

### **K–8 Science with Vernier (Gen)**

(Grades K–8) 210A, Convention Center

Sponsor: Vernier Software & Technology

**Verle Walters** ([info@vernier.com](mailto:info@vernier.com)) and **David Carter** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Learn how easy it is to measure temperature, gas pressure, magnetic field, and more. In this hands-on workshop, you can try experiments from our popular *Elementary Science with Vernier* and *Middle School Science with Vernier* lab books using sensors on LabQuest 2 or a computer using our low-cost Go! products.

**Engineering with Vernier (Phys)**  
(Grades 7–College) 210B, Convention Center

Sponsor: Vernier Software & Technology  
**David L. Vernier** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

This is a two-part workshop. The first half will be oriented toward middle school. It will demonstrate the use of Vernier sensors with the LEGO®'s MINDSTORM® NXT robotics kit. The second half will demonstrate projects using LabVIEW™, for use with first-year college or high school students.

**Physics from the NRC Framework: Exploring NGSS and Newton's Laws (Phys)**

(Grades 9–12) 211, Convention Center  
Sponsor: Ward's Science

**Jill Lewis**, VWR Education, Rochester, N.Y.

High school physics gets a makeover in this hands-on lab demonstrating how to tie Newton's laws to modern-day applications and technology. Learn how to use digital tools and guided inquiry lessons to introduce students to the fun of physics, while satisfying science and engineering practice developing and using models.

**Perimeter Institute: Classroom Activities for Dark Matter (Phys)**

(Grades 11–12) 212B, Convention Center  
Sponsor: Perimeter Institute for Theoretical Physics

**Greg Dick** ([contact@perimeterinstitute.ca](mailto:contact@perimeterinstitute.ca)), **Dave Fish** ([contact@perimeterinstitute.ca](mailto:contact@perimeterinstitute.ca)), and **Damien Pope** ([contact@perimeterinstitute.ca](mailto:contact@perimeterinstitute.ca)), Perimeter Institute for Theoretical Physics, Waterloo, Ont., Canada

Are you looking for ways to connect your students with current physics research? Join us as we explore how uniform circular motion can be used to introduce students to dark matter. The Mystery of Dark Matter multimedia resource is the product of collaboration between classroom teachers and Perimeter Institute researchers.

**The Private Eye® Way to Magnify Minds: How to Fire Up STEM and Common Core State Standards' Literacy Goals (Gen)**

(General) 214A, 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 magnify thought...and develop the essential skills of scientist, writer, and artist in all your students. Engage creative and critical thinking as students write, draw, and theorize with this acclaimed program. Free loupes and lessons!

**Genetics: Crazy Traits and Adaptation Survivor (Bio)**

(Grades 6–12) 214D, Convention Center  
Sponsor: CPO Science/School Specialty Science

**Scott W. Eddleman** and **Nathan Olsson**, CPO Science/School Specialty Science, Nashua, N.H.

Students learn new vocabulary when they experience genetics. Concepts like traits, alleles, phenotypes, genotypes, and heredity will come alive as you create crazy creatures with a unique kit and study the resulting population. Take away STEM activities and an understanding of how to incorporate science and engineering practices in lessons.



**You Be The Chemist Challenge (Chem)***(Grades 5–8)**Salon E, Marriott Rivercenter*

Sponsor: The Dow Chemical Co.

**John Rice** and **Suzette Bucher**, Chemical Educational Foundation®, Arlington, Va.

The Chemical Educational Foundation (CEF), a national nonprofit organization, and The Dow Chemical Company have partnered together to introduce CEF's You Be The Chemist (YBTC) educational programs. These innovative programs offer a "challenge" that introduces students to the central role of chemistry in everyday life by providing educators with inquiry-based and easy-to-use activities. Join us and participate in this fun, innovative academic competition engaging grades 5–8 in experiment demonstrations learning chemistry concepts, scientific discoveries, and laboratory safety. National YBTC Challenge competitions are exciting events, encouraging the collaboration of industry members, schools, and community organizations. A student from YOUR school could be the next winner. Attend this enjoyable hands-on work shop to learn more!

**8:00–10:00 AM Workshop****Elementary Extravaganza (Gen)***(Preschool–Middle Level)**Ballroom B, Convention Center*Organizer: Linda Froschauer (*fro2@mac.com*), 2006–2007 NSTA President, and Field Editor, *Science & Children*, Westport, Conn.

This Extravaganza is not to be missed! Join elementary groups of professionals for an exceptional opportunity—more than 100 presenters will provide ideas. Engaging hands-on activities, strategies to excite and encourage your students, a preview of the best trade books available, information about award opportunities, contacts with elementary science organizations, sharing with colleagues, and much more will be available to participants. Come grab some coffee, enter to win prizes, and walk away with a head full of ideas and arms full of materials! Visit [bit.ly/WpogHG](http://bit.ly/WpogHG) for a complete list of Extravaganza participants or please pick up a program at the door.

Participating organizations include the Association of Presidential Awardees in Science Teaching, the Council for Elementary Science International, the NSTA Committee on Preschool–Elementary Science Teaching, *Science & Children* authors and reviewers, and the Society of Elementary Presidential Awardees.

This event is sponsored in part by Carolina Biological Supply; Delta Education/School Specialty; Houghton Mifflin Harcourt; and Science Companion, Chicago Educational Publishing Company.

**8:00–10:00 AM Exhibitor Workshop****Using Science Notebooks to Impact Student Learning with FOSS (Gen)***(Grades K–6)**214C, Convention Center*Sponsor: Delta Education/School Specialty Science–FOSS  
**Virginia Reid**, The Lawrence Hall of Science, University of California, Berkeley

**Ellen Mintz**, Charleston County Schools, Charleston, S.C. Learn how we implement science notebooks in the new FOSS editions. Through active investigations from the new editions, you'll discover how science notebooks can impact student achievement by providing a tool for developing conceptual understanding, exposing evidence of learning, and guiding instruction.

**8:00–10:30 AM Short Course****Maury Morning of Oceanography (SC-6)***(Grades 6–8)**Salon del Rey A, Hilton***Tickets Required: \$23****Kevin Tambara** (*tambarak@einsteinfellows.org*), Einstein Fellow, National Science Foundation, Arlington, Va.**Carol A. Kraft** (*carol.kraft@rps205.com*), Rockford Environmental Science Academy, Rockford, Ill.

For description, see Volume 1, page 59.

**8:00–11:00 AM Short Courses****Be a Winner! Get a Grant and Your Students Win, Too! (SC-7)***(Elementary–High School)**La Corona, Hilton***Tickets Required: \$32****Kitchka Petrova** (*kpetrova7@dadeschools.net*), Ponce de Leon Middle School, Coral Gables, Fla.**Patty McGinnis**, NSTA Director, Middle Level Science Teaching, and Arcola Intermediate School, Eagleville, Pa.

For description, see Volume 1, page 59.

**The STEM Innovation Equation: Nine Keys to Improving STEM Education in America's Schools (SC-8)***(K–12/Administration)**Salon del Rey C, Hilton***Tickets Required: \$48****Diana Laboy-Rush**, AuthenticSTEM, Portland, Ore.

For description, see Volume 1, page 60.

**8:00 AM–12 Noon Workshop**

**PDI BSCS-I Pathway Session: Using Models to Enhance How Students Learn Science (Bio)**

(Elementary–High School) Conf. Room 1/2, Marriott Rivercenter

**Rebecca Kruse** ([rkruse@bscs.org](mailto:rkruse@bscs.org)) and **Brooke Bourdélát-Parks** ([bbparks@bscs.org](mailto:bbparks@bscs.org)), BSCS, Colorado Springs, Colo.

In this session, participants will explore the highly anticipated NGSS Practice 2, Developing and Using Models, through key activities of the *Toward High School Biology* curriculum. We'll explore the fundamental "atom rearrangement" conceptual model of chemical reactions and learn how the model applies to explaining growth and repair in living organisms.

**8:00 AM–1:00 PM NSTA Symposium**

**Flight of the Monarch Butterflies (SYM-2)**


(Grades K–12) Conf. Room 17/18, Marriott Rivercenter

**Tickets Required: \$54**

**Jim O'Leary**, Maryland Science Center, Baltimore  
**Grant Bowers** and **Kelly Nail**, University of Minnesota, St. Paul

For description, see Volume 1, page 57.

**8:00 AM–5:00 PM Short Course**

 **Meeting the Next Generation Engineering Practices with Exemplary Resources (SC-9)**

(Elementary–High School) Salon del Rey B, Hilton

**Tickets Required: \$50**

**Peter Y. Wong** ([pwong@mos.org](mailto:pwong@mos.org)), **Yvonne M. Spicer**, and **Michelle DiIeso** ([mdiieso@mos.org](mailto:mdiieso@mos.org)), Museum of Science, Boston, Mass.

**Linda M. Morris** ([linda.m.morris@dartmouth.edu](mailto:linda.m.morris@dartmouth.edu)), U.S. Ice Drilling Program, Dartmouth Thayer School of Engineering, Hanover, N.H.

**Gary D. Clow**, U.S. Geological Survey, Boulder, Colo.

**Jay Johnson**, Ice Drilling Design and Operations, University of Wisconsin–Madison

For description, see Volume 1, page 60.

**8:30–9:00 AM Presentation**

**SESSION 1**

**Integrating Science and the Common Core State Standards (Gen)**

(Elementary–High School)

Crockett A, Grand Hyatt

**Mary L. Loesing** ([mloesing@ccsdl.org](mailto:mloesing@ccsdl.org)), Connetquot Central School District, Bohemia, N.Y.

**Theresa A. Curry** ([theresa\\_curry@manhasset.k12.ny.us](mailto:theresa_curry@manhasset.k12.ny.us)), Manhasset High School, Manhasset, N.Y.

Receive an overview of the Common Core Learning Standards and discover different ways that these standards can be incorporated into the science curriculum.

**8:30–9:30 AM Featured Presentation**



**What a Difference a Measurement Makes (Gen)**

(General)

Grand Ballroom C2, Convention Center



**Paul A. Stokstad** ([stokstad@pasco.com](mailto:stokstad@pasco.com)), President, PASCO scientific, Roseville, Calif.

Presider: Martha Griffin, NSTA Director, District XIII, and Pasadena ISD, Sugar Land, Tex.

Started as a high school science project 50 years ago, the result today is PASCO scientific. Join Paul Stokstad, the science fair student who founded PASCO, as he shares how his STEM education shaped the mission of PASCO to provide students with the tools to do science, rather than just to learn about science. Paul will recount the journey of how PASCO made its way from a college dorm room to a garage to a world-class science education company.

*Paul Stokstad's fascination with scientific discovery began early. His science fair project built during his junior year in high school became the impetus for founding PASCO scientific.*

*From its humble beginnings in a college dorm room, PASCO has grown to become a global leader in developing technology-based solutions for hands-on science, serving educators and students in more than 100 countries around the world.*

*Since founding PASCO scientific in 1964, Paul has worked tirelessly to create innovative ways to teach and learn science. His recognitions include an honorary doctor of science from Andrews University in 2000 and a Distinguished Service Citation from the American Association of Physics Teachers in 2007. Paul received his bachelor's degree in physics and master of engineering degree from Dartmouth College.*



**8:30–9:30 AM Featured Presentation****My Wild Life***(General)***(Gen)***Grand Ballroom C3, Convention Center*

**Mireya Mayor**, National Geographic Emerging Explorer, Miami, Fla.

Presider: Jo Williams, President, Gay, Lesbian, Bisexual, and Transgender Science Teachers Association, Round Rock, Tex.

Relive with Mireya Mayor her wild ride as this daughter of Cuban immigrants blossoms from NFL cheerleader to Fulbright Scholar to field scientist to National Geographic TV correspondent and most recently, to PhD recipient. Mireya shares many behind-the-scenes stories of expeditions around the world and retraces the expedition where she discovered the tiny new species that enabled huge leaps in local conservation and science.

*Mireya Mayor's fascination with the wild began early. Her journey to the remote jungles of Guyana at the age of 22 has since blossomed into a career as a National Geographic wildlife correspondent. In 2005, Mireya received two Emmy Award nominations for her work on the television series Ultimate Explorer, and she was named an "Emerging Explorer" by the National Geographic Society in 2007. She hosts the series Wild Nights with Mireya Mayor on National Geographic's channel Wild!*

*An NFL cheerleader-turned-scientist, Mireya divides her time between research in the rain forests of Madagascar, lecturing at schools and universities, and traveling the world as a wildlife correspondent. In 2000, Mireya codiscovered a new species of mouse lemur in Madagascar and eventually convinced the African island nation's leaders to declare the new species' habitat a national park.*

*Mireya is a Fulbright scholar, National Science Foundation Fellow, and published author with a PhD in anthropology from Stony Brook University.*

Speaker is sponsored by National Geographic Learning.

**8:30–10:30 AM Meeting****NSTA Aerospace Programs Advisory Board Meeting***Conference Suite 514, Marriott Rivercenter***8:30–11:30 AM Short Course****Science Is Cool: Bringing Climate Science to the Elementary Classroom (SC-10)***(Elementary–Middle Level)**La Reina, Hilton***Tickets Required: \$26**

**Susan Kelly** (*susan.kelly@montana.edu*) and **Christine Foreman** (*cforeman@montana.edu*), Montana State University, Bozeman

**Louise Huffman** (*lhuffman@andrill.org*), ANDRILL Science Management Office, Lincoln, Neb.

**Walter Woolbaugh** (*walter@montana.com*), Montana Public Schools and Montana State University, Bozeman

**Brent C. Christner** (*xner@lsu.edu*), Louisiana State University, Baton Rouge

For description, see Volume 1, page 60.

**9:00–11:30 AM Exhibitor Workshop****DNA Detectives—Who Killed Jose?****(Bio)***(Grades 9–College)**217B, Convention Center*

Sponsor: Bio-Rad Laboratories

**Leigh Brown**, Bio-Rad Laboratories, Hercules, Calif.

In this hands-on lab, we'll solve a theatrical crime scene using biotechnology skills such as DNA gel electrophoresis, restriction digestion, and pipetting. Learn about the Innocence Project and how the wrongly accused can be exonerated.



## 9:00 AM–12 Noon NSTA ESP Symposium

### ESP: Unique Features of Programs That Meet “More Emphasis” Features in the NSES (Gen)

(General) 215, Convention Center

The Standards offered Four Goals/Justifications for Science in K–6 Settings, namely that all students would: 1) Experience the richness and excitement of knowing about and understanding the natural world; 2) Use appropriate scientific processes and principles in making personal decisions; 3) Engage intelligently in public discourse and debate about matters of scientific and technological concern; and 4) Increase their economic productivity through the use of the knowledge, understandings, and skills of the scientifically literate person in their careers.

NSTA’s Exemplary Science Programs (ESP) series identifies people and places where the reforms recommended have emerged. The exemplary include: 1) Exemplary Science in Grades PreK–4; 2) Exemplary Science in Grades 5–8; 3) Exemplary Science in Grades 9–12; 4) Exemplary Science: Best Practices in Professional Development; 5) Inquiry: The Key to Exemplary Science; 6) Exemplary Science in Informal Education Settings; and 7) Exemplary Science for Resolving Societal Challenges.

The series was conceived by Robert E. Yager (1982–1983 NSTA President), who continues ESP searches and ways of recognizing classroom successes while also encouraging more to try!

Coordinator: Brenda Wojnowski, WAI Education Solutions, Dallas, Tex.

### Symposium Participants:

#### Promoting Inquiry with Preservice Elementary Teachers

**Thomas R. Lord** (*treeveslord@gmail.com*), NSTA Director, College Science Teaching, and Retired Educator, Lewes, Del.

#### More Emphasis on Teacher Quality

**Susan B. Koba** (*skoba@cox.net*), Retired Educator, Omaha, Neb.

#### Creating a Pipeline to STEM Careers

**Anton Puvirajah** (*apuvirajah@gsu.edu*) and **Lisa M. Martin-Hansen** (*lmartinhansen@gsu.edu*), Georgia State University, Atlanta

**Geeta Verma** (*geeta.verma@ucdenver.edu*), University of Colorado, Denver

#### Bring School Science to College

**Sondra B. Akins** (*akins@wpunj.edu*), William Paterson University, Wayne, N.J.

#### “Who Ate Our Corn?”

**Craig Wilson** (*cwilson@science.tamu.edu*), USDA/Hispanic Serving Institutions National Program and Texas A&M University, College Station

#### Sowing the Seeds of Future Success

**Timothy P. Scott** (*tim@science.tamu.edu*), Texas A&M University, College Station

#### The Talent Marketplace—Where Science Careers Are Made

**S. Anders Hedberg** (*anders@hedbergconsultingllc.com*), Hedberg Consulting, LLC, Ottsville, Pa.

#### Developing Students’ Authentic Inquiry Skills

**Judith A. Scheppler** (*quella@imsa.edu*), Illinois Mathematics and Science Academy®, Aurora

#### Preparing Students for Careers That Do Not Yet Exist

**Glenn “Max” McGee** (*maxmcgee@imsa.edu*), Illinois Mathematics and Science Academy®, Aurora

#### Securing a “Voice”

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

#### Stop Talking, Start Listening

**Peter Veronesi** (*pveronesi@brockport.edu*), The College at Brockport, N.Y.

#### Revising Majors Biology: A Departmental Journey

**Elizabeth Allan** (*eallan@uco.edu*), NSELA President, and University of Central Oklahoma, Edmond

#### Revising an Old Strategy with New Frameworks

**Teddie Phillipson-Mower** (*t.phillipsonmower@louisville.edu*), University of Louisville, Ky.

#### Ways to Interest More Students in Science Careers

**Claudia Khourey-Bowers** (*cmkhourey@kent.edu*), Kent State University at Stark, North Canton, Ohio

**Vicki McCamon** (*mccamonv@npschools.org*), Joseph Welty Middle School, New Philadelphia, Ohio

#### Success with Science Outdoors

**Beth Ann Krueger** (*beth.krueger@centralaz.edu*), Central Arizona College—Aravaipa Campus, Winkelman

#### Implementing the Jigsaw Technique to Enhance Learning

**Sandhya N. Baviskar** (*sandhya.baviskar@uafs.edu*), University of Arkansas—Fort Smith

#### Inspiring the Next Generation of Scientists

**Gerard J. Putz** (*gjputz@sbcglobal.net*), Science Olympiad, Oakbrook Terrace, Ill.

**Jennifer L. Wirt** (*scitchr24@yahoo.com*), New Jersey Science Olympiad, Livingston

#### Developing Inquiry Skills

**Robert Wolffe** (*rwolffe@fsmail.bradley.edu*), Bradley University, Peoria, Ill.

#### Why STEM—Why Now?

**Karen Charles** (*kcharles@rti.org*), RTI International, Research Triangle Park, N.C.

**9:00 AM–5:00 PM Exhibits***Exhibit Hall B, Convention Center*

The NSTA Exhibit Hall is a must-see! NSTA brings you the leading science education companies and organizations to showcase products, services, curricula, and much more. You'll discover something new and exciting in the world of science teaching. Some exhibitors will offer materials for sale.

**9:00 AM–5:00 PM Networking Opportunity****NSTA International Lounge***Republic C, Grand Hyatt*

Please stop by the NSTA International Lounge to relax or meet colleagues while you're at the conference. The lounge is open Thursday through Saturday, 9:00 AM–5:00 PM.

**9:30–10:00 AM Presentation****SESSION 1****Measuring Minority Students' Learning in Science and Technology (Chem)***(General)**Alamo Salon B, Marriott Riverwalk*

**Terrell L. Strayhorn** (*strayhorn.3@osu.edu*), The Ohio State University, Columbus

Increasing the number of racial/ethnic minorities in STEM fields is a national priority. To achieve this goal, educators use a number of pedagogical techniques to promote development of students' scientific and technical learning, although little is known about how to do so. In this session, I will demonstrate effective ways to measure such learning, present data from a multi-school study, and offer recommendations for increasing learning in this domain.

# NSTA Student Chapter Showcase and Lounge

A three-day showcase featuring interactive sessions presented by NSTA Student Chapter faculty advisors, student leaders, and members—highlighting campus and community activities, hands-on demonstrations, discussion groups, and more. Between sessions, the room will serve as a lounge for preservice teachers, new teachers, and faculty advisors to meet, network, and share ideas. Refreshments available!

**April 11–13 11:00 AM – 3:00 PM (daily)**

Henry B. Gonzalez Convention Center  
Executive Assembly



**NSTA** National  
Science  
Teachers  
Association

## 9:30–10:30 AM Presentations

### SESSION 1

#### National Marine Sanctuaries—Bringing Ocean Technology into Your Classroom (Earth)

(Informal Education) 003A, Convention Center

**Tracy Hajduk** ([tracy.hajduk@noaa.gov](mailto:tracy.hajduk@noaa.gov)), NOAA Office of National Marine Sanctuaries, Silver Spring, Md.

National Marine Sanctuary lessons bring ocean science to classrooms. Come see how more than 100 lessons, real-time research expeditions, and telepresence can bring science exploration to your students.

### SESSION 2

#### A Robotic WISSARD Integrates STEM into Your Classroom! (Earth)

(General) 101A, Convention Center

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

**Ross D. Powell** ([rpowell@niu.edu](mailto:rpowell@niu.edu)), Northern Illinois University, DeKalb

WISSARD stands for Whillans Ice Stream Subglacial Access Research Drilling. This STEM project will have students excited about cutting-edge Antarctic geoscience. Scientists and engineers have created a robot to explore under the ice shelf.

### SESSION 3



#### Going Beyond Data Collection: Sharing in a Science Classroom (Gen)

(General) 207A, Convention Center

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

This model lesson will demonstrate how students can collect and share data and produce a digital report. Bring your own device to participate as a student or come observe all the action.

### SESSION 4

#### Teach STEM? NASA Explorer Schools Can Help! (Gen)

(Middle Level–High School) 212A, Convention Center

**Rob LaSalvia**, NASA Glenn Research Center, Cleveland, Ohio

Presider: Jodie Rozzell, Director, NASA Explorer Schools, NSTA, Arlington, Va.

NASA Explorer Schools is NASA's classroom-based gateway to middle school and high school classrooms—inspiring students and teachers to participate in NASA's mission through inquiry-based experiences.

### SESSION 5

#### ASTC Session: Excite Kids Through Effective Science, Technology, Engineering, and Math Messaging (Phys)

(Informal Education) 213A, Convention Center

**Tricia Berry** ([triciaberry@txgcp.org](mailto:triciaberry@txgcp.org)), The University of Texas at Austin

Explore research-based messaging, imagery, and best practices to engage diverse students in science, technology, engineering, and mathematics and to excite them to pursue STEM careers.

### SESSION 6

#### Kindergarten Engagement Lessons (Gen)

(Preschool–Elementary) 213B, Convention Center

**Andrea Zdinak Andretta**, Norwalk (Conn.) Public Schools

Kindergartners are easily engaged. Let's look at how the inquiry process is accessible for these young learners, beginning with planned engagement lessons.

### SESSION 7

#### A Matter of Fact (Phys)

(Elementary) 216A, Convention Center

**Stephanie Williams** ([stephwil@greenville.k12.sc.us](mailto:stephwil@greenville.k12.sc.us)) and **Reginald Williams** ([rswillia@greenville.k12.sc.us](mailto:rswillia@greenville.k12.sc.us)), Alexander Elementary School, Greenville, S.C.

Matter is a difficult concept for students to understand. Join us and engage in activities that reinforce matter vocabulary and concepts.

### SESSION 8

#### Science Reviews: Point by Point (Gen)

(Elementary–Middle Level) 216B, Convention Center

**Shirley M. Willingham** ([shirlwil@hotmail.com](mailto:shirlwil@hotmail.com)), Houston Academy, Houston, Tex.

Using games and slide shows can add zest to your review time and keep students involved. Receive tips to make creating reviews faster and easier.

**SESSION 9** (two presentations)*(High School–College)**Bowie C, Grand Hyatt***SCST Session: Tuning Biology in Texas: Aligning Competencies and Expectations for the Biology Degree (Bio)****Lee E. Hughes** (*lhughes@unt.edu*), University of North Texas, Denton**Linda W. Crow** (*lcrow@lonestar.edu*), Lone Star College–Montgomery, Conroe, Tex.**Marisela Rodriguez** (*marisela.rodriguez@laredo.edu*), Laredo Community College, Laredo, Tex.

A committee of biology faculty members from across Texas participated in a “tuning” process during 2011 and 2012. The recommendations of this committee will be presented, including the key competencies and learning outcomes expected for a student entering the degree program from high school and for completion of a bachelor’s degree in biology.

**SCST Session: Increasing the Diversity and Quality of Biology Graduates (Bio)****Claire Sandler** and **Joe Salvatore** (*joesalva@umich.edu*), University of Michigan, Ann Arbor

Michigan Biology Academy Scholars Program (M-Bio) is a two-year program for low-income, first-generation, and/or underrepresented minority students in biology who are selected to begin their first year on campus in an intensive summer program designed to prepare them for the rigors of a college education. We’ll discuss student selection, the intensive first summer term, academic coaching, and other associated programming.

**SESSION 10** (two presentations)*(General)**Crockett A, Grand Hyatt***Students as Scientists (Gen)****Aimee M. Schludecker** (*aschludecker@msddecatur.k12.in.us*), Decatur Central High School, Indianapolis, Ind.**Mary Anne Hammonds** (*mhammonds@msddecatur.k12.in.us*), Decatur Middle School, Indianapolis, Ind.

Engage and assess through science notebooking. Students write thoughts, get feedback before “publishing” work, make reference guides of concepts, and take ownership of their work.

**Promising Practices Bridge the Gap: A STEM High School Needs Assessment (Gen)****Loretta W. Harvey** (*lharvey@shawnee.edu*) and **Kenneth W. Carlson** (*kcarlson@shawnee.edu*), Shawnee State University, Portsmouth, Ohio

An external needs assessment will be used to identify student and teacher needs in a STEM high school in rural Appalachia, promising practices that support STEM education.

**SESSION 11****Supporting All Learners (Gen)***(Elementary–High School)**Crockett B, Grand Hyatt***Crystal L. Marsh** and **Nickoleta Lytras** (*nickoleta.lytras@salkschool.org*), Salk School of Science, New York, N.Y.

Each student has unique learning strengths and needs. This session will help you identify those needs and provide strategies to help each student succeed.

**SESSION 12**

**Exploring the Wonder of Science and Children's Literature for the Next Generation (Gen)**

*(General)* *Crockett C, Grand Hyatt*

**Sally C. Mayberry** and **Alison Conant** (*edsresearcher@aol.com*), Florida Gulf Coast University, Fort Myers

This session was created to introduce effective children's literature and promote science and literature content integration to ensure success for the next generation.

**SESSION 13**

**No Child Left Behind: An Update on the Federal Education Law (Gen)**

*(General)* *Lone Star Ballroom B, Grand Hyatt*

**Jodi Peterson** (*jpeterston@nsta.org*), Assistant Executive Director, Legislative & Public Affairs, NSTA, Arlington, Va. No Child Left Behind (aka the Elementary and Secondary Education Act) has had a major impact on K–12 education. In this session, we will examine the current status of NCLB, its effect on science education, where Congress and the Administration are headed in regard to education policy, and more.

**SESSION 14**

**Science Teacher Preparation Revisited (Gen)**

*(Informal Education)* *Lone Star Ballroom C, Grand Hyatt*

**Marvin Druger** (*mdrugr@syr.edu*), 1994–1995 NSTA President, and Syracuse University, Syracuse, N.Y.

Emphasis will be placed on developing a new model for science teacher preparation that improves on current practices. Your input is encouraged.

**SESSION 15**

**Engaging the Elementary School Community in Innovative and Meaningful STEM Activities (Gen)**

*(General)* *Lone Star Ballroom E, Grand Hyatt*

**Prent Klag** (*klag@suu.edu*), Southern Utah University, Cedar City

Bolster community support, build excitement, and broaden partnerships by involving elementary schools, businesses, universities, and governmental agencies in innovative and meaningful STEM activities.

**SESSION 16**



**NSTA Press® Session: Brain-powered Science Teaching and Learning with Discrepant Events (Gen)**

*(Middle Level–High School)* *Mission A, Grand Hyatt*

**Thomas P. O'Brien** (*tobrien@binghamton.edu*), Binghamton University, Binghamton, N.Y.

Engaging, dual-purpose minds-on activities (and cartoons) explore the question: What does research on learning tell

us about the desired direction for “next generation” teaching (Curriculum–Instruction–Assessment)?

**SESSION 17**

**Effective Professional Development with NSTA Resources (Gen)**

*(Supervision/Administration)* *Mission B, Grand Hyatt*

**Steve Rich** (*bflywriter@comcast.net*), NSTA Director, Professional Development, and West GYSTC, Carrollton, Ga.

Professional development providers will get tips from the PD committee on the effective use of NSTA Press® books and other resources that boost teachers' content knowledge and pedagogy.

**SESSION 18**

**NARST Session: Reaching More Students by Providing Visual Contextualization During Assessments (Gen)**

*(General)* *Presidio C, Grand Hyatt*

**Angi Shelton** (*angi@temple.edu*), Virginia Beach, Va.

Emphasis will be placed on results from contextualized virtual assessments and participants will have an opportunity to experience the assessments and get involved.

**SESSION 19**

**Using Formative Assessment Data to Improve Student Achievement (Env)**

*(High School–College)* *Sequin A, Grand Hyatt*

**Don Carmichael** (*dcarmichael@d125.org*), **Jason Carlson** (*jcarlson@d125.org*), and **Lisa Thoss**, Adlai E. Stevenson High School, Lincolnshire, Ill.

Prsident: Steven Wood (*swood@d125.org*), Adlai E. Stevenson High School, Lincolnshire, Ill.

Explore the use of student performance data to create review materials tailored to the needs of each student.

**SESSION 20**

**Trends in Credit Attainment of High School Students in Science and Math Courses in Texas (Gen)**

*(General)* *Texas Ballroom C, Grand Hyatt*

**Liang Zeng** (*zengl@utpa.edu*) and **G. Harold Poelzer** (*hpoelzer@utpa.edu*), The University of Texas–Pan American, Edinburg

Hear about trends in credit attainment of high school students in required and non-required science and math courses in Texas from 1997 to 2011.



## SESSION 21

**Next Generation Science Standards: Teacher Insights from the Writing Team—Life Sciences (Middle/High School) (Bio)**

(Middle Level—High School) *Texas Ballroom F, Grand Hyatt*  
**Vanessa Westbrook** (*vanedani\_61@yahoo.com*), Chairperson, NSTA San Antonio National Conference, and Westbrook Consulting, Austin, Tex.

**Kevin Fisher** (*kfisher56@msn.com*), Lewisville ISD, Flower Mound, Tex.

Join middle school and high school life science teachers who are writers of the highly anticipated Next Generation Science Standards for an exploration of the development of NGSS— from teachers for teachers. Writers will share the thinking and ideas that went into writing this landmark document and the challenges they experienced along the way. This session will address and explore life science from the secondary perspective (grades 6–12) and what NGSS will mean for classroom science teachers.

## SESSION 22

**NSELA Session: Tools for Leaders (Gen)**

(General) *Travis A, Grand Hyatt*  
**Darlene Ryan** (*dryan@chccs.k12.nc.us*), Glenwood Elementary School, Chapel Hill, N.C.

**Susan Koba** (*skoba@cox.net*), Retired Educator, Omaha, Neb.

**Jo Anne Vasquez** (*jvasquez@helios.org*), 1996–1997 NSTA President, and Helios Education Foundation, Phoenix, Ariz.

**Brenda Wojnowski** (*bwojnowski@gmail.com*), WAI Education Solutions, Dallas, Tex.

The various tools and strategies shared with science leaders in this session support them in their work to enhance teaching and learning in their context. Session includes small groups for further discussion of an idea/tool presented by the panel. Handouts!

## SESSION 23

**AMSE Session: The Literacy STEM Connection (Gen)**

(Middle Level—High School) *Conf. Room 6, Marriott Rivercenter*  
**Barbara Mammen** (*bmammen@stevens.edu*), Stevens Institute of Technology, Hoboken, N.J.

**Donna Darden-Irons** (*ddarden@camden.k12.nj.us*), Morgan Village Family School, Camden, N.J.

**Ivy Foster-Maye** (*imaye@camden.k12.nj.us*), Veterans Memorial Family School, Camden, N.J.

Emphasis will be placed on promoting literacy for all students through the use of instructional strategies that integrate STEM content, science inquiry, the engineering design process, and 21st-century skills.

## SESSION 24

**Deploying iPads One to One in a High School (Gen)**

(High School/Supervision) *Conf. Room 15, Marriott Rivercenter*  
**Shawn M. Carlson** (*scarlson@c3sd3.org*), Boothbay Region High School, Boothbay Harbor, Maine

Join me as I share approaches used by our high school in deploying iPads to all students.

## SESSION 25

**Are You Certain? Teaching Error Analysis and Other Experimental Skills in the Physics Classroom (Phys)**

(Middle Level—College) *Salon B, Marriott Rivercenter*  
**David Bonner** (*dbonner@hinsdale86.org*), Hinsdale South High School, Darien, Ill.

For students to learn *from* experiments, they must first learn *how* to do experiments. Join me for practical insights and examples for teaching experimental skills.

## SESSION 26

**Science, Reading, and Math, Oh My! Courage to Integrate (Gen)**

(General) *Salon F, Marriott Rivercenter*

**Jewlana D. Smith-Hunter** (*smithhunter@fultonschools.org*), Seaborn Lee Elementary School, College Park, Ga.

Tear down the walls of isolation and welcome integration. Find out how to effectively teach science, reading, and math standards while meeting diverse learners' needs.



SESSION 27

**Invertebrates as the “Backbone” of an Elementary Science Curriculum (Bio)**

(Preschool–Middle Level) Alamo Salon E, Marriott Riverwalk

**Ilana April** (*iapril@amnh.org*), **Jennifer Belfiore** (*jbelfiore@amnh.org*), and **Caitlin Van Ness**, American Museum of Natural History, New York, N.Y.

Discover how studying live invertebrates helps young children make connections to “big ideas” such as biodiversity, habitats, stewardship, and scientific practice.

SESSION 28 (two presentations)

(High School) Alamo Salon F, Marriott Riverwalk

**Teaching and Learning About the Human Nature of Science Within the Learning Cycle (Bio)**

**Rachel A. Beattie** (*rbcreative8@gmail.com*), Lincoln-Way East High School, Frankfort, Ill.

Join me as I share standards- and research-based lessons to confront student preconceptions about the roles of subjectivity, creativity, observation, and inference in developing the DNA model.

**Standards- and Research-based Lessons for the High School Biology Classroom (Bio)**

**Rachel A. Beattie** (*rbcreative8@gmail.com*), Lincoln-Way East High School, Frankfort, Ill.

Through presenter-designed formative assessment probes, you’ll discover standards- and research-based lessons designed to confront student preconceptions about biology concepts at the high school level.

SESSION 29

**Write Your Way to Success: Grant Writing Strategies for You and Your Chemistry Students (Chem)**

(High School) Travis, Marriott Riverwalk

**Kenetia K. Thompson** (*k\_thompson2@acs.org*), **Michael Mury**, **Marta Gmurczyk**, and **Karen M. Kaleuati** (*k\_kaleuati@acs.org*), American Chemical Society, Washington, D.C.

Looking to fund your innovative ideas? We will give you pointers for writing a fundable proposal and share grant opportunities from the American Chemical Society.

9:30–10:30 AM Workshops

**What’s Up? Classroom Activities from the Association of Astronomy Educators, Session I: Sun, Earth, and Planets (Earth)**

(General) 001A, Convention Center

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

**Wendy M. Van Norden** (*wendy.m.vannorden@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

Led by master astronomy teachers from the Association of Astronomy Educators (AAE), join us for classroom-ready, hands-on astronomy activities that really work.

**Weather Headlines: A Tool for Science Learning (Earth)**

(Middle Level–High School) 001B, Convention Center

**Lisa Gardiner** (*lisagard@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.

**Becca Hatheway** (*hatheway@ucar.edu*) National Center for Atmospheric Research, Boulder, Colo.

News stories about extreme weather provide a forum for learning atmospheric science. Explore activities and resources that allow students to consider weather in new ways.

**NASA CERES S’COOL Project: Become a S’COOL Cloud Observer! (Earth)**

(Elementary–Middle Level) 002, Convention Center

**Preston M. Lewis, Jr.** (*preston.lewis@nasa.gov*), NASA Langley Research Center, Hampton, Va.

**Brian Butera**, Turn of River Middle School, Stamford, Conn.

Engage your class in making real-world cloud and weather observations. Become a NASA S’COOL cloud observer and learn more about clouds wherever you are!



**Diverse Science Tools for Diverse Science Learners (Gen)**

(General) 201, Convention Center

**Deanna Boyd** (*sherrise77@gmail.com*), Renaissance Middle School, Fairburn, Ga.

Experience a hands-on demonstration of science tools, including science notebooks, foldables, vocabulary strategies, and various differentiation techniques. Free materials and information will be distributed!





**Investigating Soil in the Elementary Classroom (Earth)**

*(Elementary)* 202A, Convention Center  
**Davida Buehler** ([dbuehler@geosociety.org](mailto:dbuehler@geosociety.org)), The Geological Society of America, Boulder, Colo.

Join The Geological Society of America as we discover the components of soil and the various properties through numerous inquiry-based activities.

**An Amazing Beginning: Starting Interactive Science Notebooks with Your Students! (Gen)**

*(Elementary)* 217D, Convention Center  
**Elizabeth L. Ridgeway** ([ridgewae@highlands.k12.fl.us](mailto:ridgewae@highlands.k12.fl.us)), Lake Country Elementary School, Lake Placid, Fla.

Learn to set up notebooks; integrate reading, writing, and art; and start using notebooks as an assessment tool in your classroom now. Handouts!

**Literacy (Prose and Poetry) as a Component of Science Teaching (Bio)**

*(Elementary)* 208, Convention Center  
**Kathryn T. Watkins** ([watkins@unm.edu](mailto:watkins@unm.edu)), The University of New Mexico, Albuquerque

Come explore various ways to use prose and poetry to teach students characteristics of living organisms.

**“Life begins at retirement.”**

—Author Unknown



Join the NSTA Retired Advisory Board for an insightful information-sharing session. Fellow colleagues will share ideas about staying active both in and out of the profession.

**Before and After Retirement: Practicalities and Possibilities**

**Saturday, April 13  
 9:30–10:30 AM**

Grand Hyatt San Antonio  
 Bonham E

For more information on the Retired Members Advisory Board, contact Rebecca Bell, chair, at [rbell153@gmail.com](mailto:rbell153@gmail.com).



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

(Elementary–High School) Ballroom A, Convention Center  
**Michelle Harris** (*michelle.harris@apsva.us*), Wakefield High School, Arlington, Va.

**Roberta M. Johnson** (*rmjohnsn@nestanet.org*), NESTA and University at Albany, Boulder, Colo.

**Margaret A. Holzer** (*mholzer@monmouth.com*), Chatham High School, Chatham, N.J.

**Sharon Katz Cooper** (*scooper@oceanleadership.org*), Deep Earth Academy, Consortium for Ocean Leadership, Washington, D.C.

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

**Emily J. Fuger** (*efuger@sciencesocieties.org*), Soil Science Society of America, Madison, Wis.

**Paige Valderrama Graff** (*paige.v.graff@nasa.gov*), Jacobs ESCG/NASA Johnson Space Center, Houston, Tex.

**Timothy McCollum** (*tmccollum@eiu.edu*), Eastern Illinois University, Charleston

**H. Michael Mogil** (*hmmogil@weatherworks.com*), How The Weatherworks, Naples, Fla.

**Shelley Olds** (*olds@unavco.org*), UNAVCO, Boulder, Colo.

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

**Carole J. Reesink** (*cjreesink@muscanet.com*), Retired Educator, Muscatine, Iowa

**Randy Russell** (*rrussell@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.

**Jennifer Savage** (*jsavage@seti.org*), SETI Institute, Mountain View, Calif.

**Denise R. Smith**, East Ward Elementary School, Killeen, Tex.

Join more than 20 NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

**DuPont Session: DuPont Presents “The Science of Food Safety” (Bio)**

(Middle Level–High School) Bonham B, Grand Hyatt  
**Michael Clark**, Greenwood School District, Millerstown, Pa.

**Lisa Paige Bynum** (*lpbynum@volusia.k12.fl.us*), Heritage Middle School, Deltona, Fla.

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.

**Water Water Everywhere...But Would You Swim in the Passaic River? (Gen)**

(Middle Level) Bonham C, Grand Hyatt  
**Lynn B. Tarant** (*ltarant@paterson.k12.nj.us*), Paterson Education Fund, Paterson, N.J.

**Sarah Sterling-Laldee** (*patersonstem@gmail.com*), School No. 2, Paterson, N.J.

**Sugeiry V. Lopez** (*lopez.sugeiry@gmail.com*), YMCA of Paterson, N.J.

President: Shalumiel Hill (*shalumiel\_hill@yahoo.com*), YMCA of Paterson, N.J.

Teachers and interns engage middle school students in becoming agents of change in their local community with the importance of water quality and Great Falls being named a National Historic Site.

**Connecting the Circuit: Inquiry, Literacy, and the Brain (Gen)**

(Supervision/Administration) Bonham D, Grand Hyatt  
**Wayne Snyder** (*wayne.snyder@cgu.edu*), Claremont Graduate University, Claremont, Calif.

President: Jeff DeGlopper, Milwaukee Academy of Science, Milwaukee, Wis.

Engage in a “batteries and bulbs” guided inquiry, demonstrating the power of inquiry and predictions, and analyzing examples and non-examples and student writing...while relating these to brain-based research.

**CSSS Session: Science Ideas and Practices: Assessing Both Simultaneously (Gen)**

(Supervision/Administration) Bonham E, Grand Hyatt  
**Deborah Tucker** (*deborahlt@aol.com*), Science Education Consultant, Napa, Calif.

**Grant M. Gardner** (*grantmgardner@msn.com*), Assessment Services, Inc., Pepperell, Mass.

Hands-on performance tasks that are used as formative or summative tools assess both core ideas and practices. Join us and explore the benefits of these unique assessment tasks.

**Using a “Strengths-based” Approach to Teaching Science to Students with Disabilities (Gen)**

(General) Bowie B, Grand Hyatt  
**Sami Kahn** (*samikahn@mail.usf.edu*), University of South Florida, Tampa

During this hands-on workshop, participants will model strategies that not only accommodate students with disabilities’ challenges, but also challenge students to reach their scientific potential.

**Neuroscience for Your Biology Classroom (Bio)***(High School–College/Inf.) Lone Star Blrm. A, Grand Hyatt***Dina Markowitz** (*dina\_markowitz@urmc.rochester.edu*) and **Susan Holt**, University of Rochester, N.Y.

Would you like to use simple, hands-on, active learning lessons to introduce neuroscience concepts into your biology curriculum? Join us and experience two sample neuroscience activities from the University of Rochester's Life Sciences Learning Center. Handouts and information on support for field testing in your classroom will be provided.

**The Architects Have Started Without Me: What Do I Do Now? (Science Facilities 102) (Gen)***(General) Presidio A/B, Grand Hyatt***LaMoine L. Motz** (*llmotz@comcast.net*), 1988–1989 NSTA President, and Science Education and Facilities Specialist, White Lake, Mich.**Juliana Texley** (*jtexley@att.net*), Palm Beach State College, Boca Raton, Fla.**Sandra West Moody** (*sw04@txstate.edu*), Texas State University, San Marcos

Presider: LaMoine L. Motz

Is your district designing new science facilities but you're not involved? You need to get involved before it is TOO LATE! In this advanced course on science facility planning and design (an extension of the Science Facilities 101 session, page 25), the NSTA author team for *NSTA Guide to Planning School Science Facilities* (2nd ed.) will present more detailed information and examples of functional and flexible science facilities for inquiry/project-based science. We'll look at budgeting, working with the architect, space requirements, technology, flexibility, safety, new types of spaces, and special adjacencies. Take home a packet.

**Wetlands and Watersheds—An Inquiry Approach!****(Env)***(General) Republic B, Grand Hyatt***Judith Lucas-Odom** (*judyps23@yahoo.com*), Showalter Intermediate, Chester, Pa.

Water is a precious commodity! We will explore how to keep it viable using inquiry activities in a wetland/watershed environment.

**NSTA Press® Session: Classroom Activities to Accompany Stop Faking It! Energy (Phys)***(Elementary–High School) Texas Ballroom D, Grand Hyatt***Bill Robertson** (*wrobert9@ix.netcom.com*), Bill Robertson Science, Inc., Woodland Park, Colo.

In response to teacher demand, I'm developing a set of classroom activities on energy to accompany the *Stop Faking It! Energy* book. The learning cycle is incorporated in an

easy-to-use, teacher-friendly, research-based curriculum for upper elementary and conceptually based high school lessons that can help your students truly understand energy concepts. Join me for activities from the upcoming book.

**Mobile Science: Unlock the Potential of iPads in the Field (Env)***(General) Texas Ballroom E, Grand Hyatt***Katy Scott** (*kscott@mbayaq.org*), Monterey Bay Aquarium, Monterey, Calif.

Come see how the Monterey Bay Aquarium uses iPads in the field to help K–12 students access and create a wealth of information.

**SYM-1 Follow-Up Session: Get Muddy! How to Adopt One of Our Nation's Estuaries and Get Your Students Excited About Data (Gen)***(Middle Level–High School) Conf. Room 3/4, Marriott Rivercenter***Bree Murphy** (*bree.murphy@noaa.gov*), NOAA National Estuarine Research Reserve System, Silver Spring, Md.**Peg Steffen** (*peg.steffen@noaa.gov*), NOAA National Ocean Service, Silver Spring, Md.

Join us and get to know your “home” estuary! We will be leading a fun, interactive game of trivia about our nation's estuaries and you can win valuable prizes! We'll introduce our new curriculum for middle and high school students about estuaries, the world's most productive marine ecosystems. This curriculum is loaded with low-cost hands-on activities and data-related activities you can do in your classroom as well as a wealth of other multimedia resources that are all free and downloadable online.

**Meltdown: Using a Nuclear Disaster to Teach Science (Gen)***(High School) Conference Room 16, Marriott Rivercenter***Laurie A. Hayes** (*lhayes@cart.org*), **Angela Thornton** (*athornton@cart.org*), and **Todd Bristol** (*tbristol@cart.org*), Center for Advanced Research and Technology, Clovis, Calif.

Using the Fukushima Japan meltdown as a model, you will engage in hands-on activities that can integrate physics, chemistry, and biology into the science classroom.



**Slingshot Physics: Authentic Application of Work, Energy, Friction, and Newton's First Law of Motion (Phys)**

(High School)

Salon J, Marriott Rivercenter

**Aaron Osowiecki** ([aosowiecki@gmail.com](mailto:aosowiecki@gmail.com)) and **Jesse Southwick** ([jesse.southwick@gmail.com](mailto:jesse.southwick@gmail.com)), Boston Latin School, Boston, Mass.

Assess your students' understanding of work, energy, friction, and Newton's first law of motion using an inexpensive rubber band slingshot.

**PDI McREL Pathway Session: Designing Effective Science Lessons—Revealing and Addressing Preconceptions (Gen)**

(General)

Salon K, Marriott Rivercenter

**Anne Tweed** ([atweed@mcrel.org](mailto:atweed@mcrel.org)), 2004–2005 NSTA President, and McREL, Denver, Colo.

Students can provide the right word, definition, or formula... yet still hold inaccurate preconceptions. If "correct" answers can result in insufficient evidence of understanding, then how can teachers reveal and address student misconceptions to determine if students really understand science concepts? Come learn about an instructional process that you can use to reveal prior knowledge, address misconceptions, and build on what students already understand. Handouts.

**Interactive Word Walls Come to Life (Gen)**

(Middle Level–High School)

Salon M, Marriott Rivercenter

**Nancy J. Rodriguez** ([nancy.rodriguez@esc20.net](mailto:nancy.rodriguez@esc20.net)), Education Service Center, Region 20, San Antonio, Tex.

**Lisa Duran** ([lisa.duran@harlandale.net](mailto:lisa.duran@harlandale.net)), Harlandale ISD, San Antonio, Tex.

Prsident: Sandy Botello, Education Service Center, Region 20, San Antonio, Tex.

Are your English language learner students struggling with science vocabulary and content? Join us as we create and interact with organized word walls. Learn ways to incorporate organized word walls and vocabulary into daily activities.

**Stretch Your Legs for Science (Bio)**

(General)

Alamo Salon C, Marriott Riverwalk

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

**Bird Cramer**, Peachtown Elementary School, Aurora, N.Y.

**Pamela Evans** ([pevans@charleston.k12.il.us](mailto:pevans@charleston.k12.il.us)), Jefferson Elementary School, Charleston, Ill.

Care for a little more exercise than running between sessions? Come join us for a mini bird walk! After a quick tutorial on bird identification, we'll head outside for a quick citizen science count. You'll experience just how engaging and easy it can be to get going with citizen science!

**Tangible Models and Augmented Reality: New Technology for High School Biology Classrooms (Bio)**

(High School)

Alamo Salon D, Marriott Riverwalk

**Matt D. Silberglitt** ([msilber@wested.org](mailto:msilber@wested.org)) and **Jodi Davenport** ([jdavenport@wested.org](mailto:jdavenport@wested.org)), WestEd, Oakland, Calif.

**Autumn Chapman** ([autleaf46@yahoo.com](mailto:autleaf46@yahoo.com)), Alameda, Calif.

Explore new DNA, protein, and virus models, along with augmented reality apps. Take home models, links to apps, and activities to use in your classes.

**9:30–10:30 AM Exhibitor Workshops****NASA's Next Generation Science Classroom****(Earth)***(Grades 6–8)**103B, Convention Center*

Sponsor: NASA Science Mission Directorate E/PO

**Cassie Soeffing**, Institute for Global Environmental Strategies, Arlington, Va.**Ruth Paglierani** and **Kyle W. Fricke**, University of California, Berkeley, Calif.**Andi Nelson** and **Lindsay M. Bartolone**, Adler Planetarium, Chicago, Ill.**Sheri Klug Boonstra**, Arizona State University, Tempe**Kristin Wegner**, University Corporation for Atmospheric Research, Boulder, Colo.**Ginger J. Butcher**, Sigma Space, Greenbelt, Md.**Dorian W. Janney**, NASA Goddard Space Flight Center, Greenbelt, Md.**Pamela K. Harman**, SETI Institute, Mountain View, Calif.**Brandon Lawton** and **Dan McCallister**, Space Telescope Science Institute, Baltimore, Md.**Edgar A. Bering**, University of Houston, Tex.**Todd Ellis**, SUNY Oneonta, N.Y.**Greg Schultz**, Astronomical Society of the Pacific, San Francisco, Calif.**Lauren Brodsky**, The Lawrence Hall of Science, University of California, Berkeley**Georgia Bracey**, Southern Illinois University, Edwardsville

Participate in inquiry-based hands-on science activities that you can use with your students. These resources focus on crosscutting concepts aligned with the highly anticipated Next Generation Science Standards and cover the spectrum of Earth and space science topics. The activities and hundreds more are freely available through NASA Wavelength, a new digital library for educators.



*B*y invitation only, join your fellow NSTA Life Members for a breakfast filled with memories as well as meaning. Catch up with old friends, make new ones, trade war stories, and discuss ways to share your talents and vitality with the science education community.

*NSTA Life Members' Buffet Breakfast*

Sunday, April 14

7:00–9:00 AM

*Grand Hyatt San Antonio, Bowie B/C*

Tickets are required (M-11: \$50 on-site) and, if still available, must be purchased at the NSTA Registration Area by 3:00 PM on **Saturday, April 13**.

*Participation is limited to NSTA life members only.*

**Earth and Space Science—More Pertinent Today,  
More Important in the Next Generation Science  
Standards (Earth)**

(Grades 6–12) 205, Convention Center

Sponsor: It's About Time

**Ann Benbow**, American Geosciences Institute, Alexandria, Va.

Recent developments and the increasing societal importance of Earth-related issues have created a need for understanding Earth's systems. See how the American Geosciences Institute's new edition of *EarthComm*, and its project-based Earth systems approach can help you implement the practices and goals of NGSS.

**9:30–11:00 AM Presentation**

**SESSION 1**

**NMLSTA Session: NMLSTA Share-a-Thon (Phys)**

(Middle Level) Texas Ballroom A/B, Grand Hyatt

**Rajeev Kumar Swami** ([chem276@yahoo.com](mailto:chem276@yahoo.com)), NMLSTA President, and Central State University, Wilberforce, Ohio

**Todd F. Hoover** ([thoove2@bloomu.edu](mailto:thoove2@bloomu.edu)), Bloomsburg University of Pennsylvania, Bloomsburg

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

**Patty McGinnis**, NSTA Director, Middle Level Science Teaching, and Arcola Intermediate School, Eagleville, Pa.

**Leanne K. Moorman** ([lmoorman@windstream.net](mailto:lmoorman@windstream.net)), Columbus (Ohio) City Schools

Middle level science teachers will share tested-and-tried activities from their classrooms with fellow teachers. Come receive complete activities that can be used to motivate middle grade students.

**9:30–11:30 AM Exhibitor Workshop**

**Wind-energized Classroom (Gen)**

(Grades 4–12) 007C, Convention Center

Sponsor: KidWind Project

**Joseph T. Rand** ([joe@kidwind.org](mailto:joe@kidwind.org)) and **Michael Arquin**, KidWind Project, St. Paul, Minn.

Join KidWind as we explore classroom wind turbine activities. Play with simple devices you can build for less than \$5 to advanced turbines that explore generators, gearboxes, and airfoils. Learn about curricula, student design challenges, and web tools to make your classroom come alive with wind-powered science.

**9:30 AM–12:30 PM Workshop**

**PDI WISP Pathway Session: Integrating Science and  
Literacy—A Journey, Not a Destination (Gen)**

(General) Salon L, Marriott Rivercenter

**Carrie Launius** ([jlaunius@hazelwoodschoools.org](mailto:jlaunius@hazelwoodschoools.org)), Hazelwood School District, Florissant, Mo.

**Kristin T. Rearden** ([krearden@utk.edu](mailto:krearden@utk.edu)) and **Amy D. Broemmel** ([broemmel@utk.edu](mailto:broemmel@utk.edu)), University of Tennessee, Knoxville

**Sarah C. Campbell** ([sarah@sarahccampbell.com](mailto:sarah@sarahccampbell.com)), Author/Photographer, Jackson, Miss.

**Suzanne Flynn** ([suzannemflynn@earthlink.net](mailto:suzannemflynn@earthlink.net)), Lesley University, Cambridge, Mass.

**Terry Catusus Jennings** ([ltjennings@verizon.net](mailto:ltjennings@verizon.net)), Author, Reston, Va.

**Darcy Pattison** ([darcy@darcypattison.com](mailto:darcy@darcypattison.com)), Little Rock, Ark.

**Wendy Saul**, University of Missouri—St. Louis

**Melissa Stewart**, Acton, Mass.

**Mike Szydlowski** ([mszydlow@columbia.k12.mo.us](mailto:mszydlow@columbia.k12.mo.us)), Columbia (Mo.) Public Schools

**Juliana Texley** ([jtexley@att.net](mailto:jtexley@att.net)), Palm Beach State College, Boca Raton, Fla.

**Catherine Thimmesh** ([cthimmesh@comcast.net](mailto:cthimmesh@comcast.net)), Houghton Mifflin Harcourt, Eden Prairie, Minn.

**Peggy Thomas** ([pegtwrite@aol.com](mailto:pegtwrite@aol.com)), Middleport, N.Y.

**Diana Wiig** ([dwiig@uwyo.edu](mailto:dwiig@uwyo.edu)), University of Wyoming, Laramie

**Sallie Wolf** ([salwolf@comcast.net](mailto:salwolf@comcast.net)), Oak Park, Ill.

Presider: Suzanne Flynn

Interact with noted authors, science educators, and NSTA program managers as they share strategies for integrating science and literacy using high-quality science trade books.

**10:00–10:30 AM Presentation**

**SESSION 1**

**Teaching Climate and Energy: The CLEAN Collection of Peer-reviewed Climate and Energy Learning Resources (Env)**

(Informal Education)

Crockett D, Grand Hyatt

**Tamara S. Ledley**, TERC, Cambridge, Mass.

**Anne U. Gold** ([anne.u.gold@colorado.edu](mailto:anne.u.gold@colorado.edu)), University of Colorado at Boulder

The CLEAN collection of climate and energy learning resources helps you teach with confidence. See materials, teaching tips, and standard alignments at [cleanet.org](http://cleanet.org). Learn more!

**10:00–11:15 AM Exhibitor Workshop****Identifying, Clarifying, and Designing Experiments (Gen)***(Grades K–8)**214B, Convention Center*

Sponsor: Delta Education/School Specialty Science

**Johanna Strange**, Consultant, Richmond, Ky.**Tom Graika**, Consultant, Lemont, Ill.

Having trouble getting students ready for science fairs and STEM performances? Learn an effective method for teaching students to design experiments from simple investigations. The same process can help students crystallize engineering ideas. Delta products will be featured and resources will be provided.

**10:00–11:30 AM Exhibitor Workshops****Take a Swipe at Microbes! (Bio)***(Grades 7–12)**006A, Convention Center*

Sponsor: LaMotte Co.

**Ken Rainis**, Precision Microslides, Cottonwood, Ariz.

Excite students with fun and safe ways to become scientific explorers of microbes in air, water, food, and on surfaces. As scientists, students will use technology to identify the microbes that they find. As engineers, they will design methods to collect data using BioPaddles™. As mathematicians, they will quantify microbes in CFU/cm<sup>2</sup> units. Engage students in thinking about the real-world connections of microbes and life. Come microbe hunting with us! Takeaways!

**The Next Generation Science Standards: What They Mean for Earth and Space Science (Earth)***(Grades K–12)**006B, Convention Center*

Sponsor: Pearson

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

The Next Generation Science Standards represent a bold new direction for K–12 science in America, but also pose many challenges and questions. Professor Michael Wysession, a lead author of NGSS, will talk about the implications for teaching, assessment, and professional development in American Earth and space science education.

**Equip Your iPad or Android Tablet for Science with SPARKvue® HD, a Full-featured Science Application (Gen)***(Grades K–12)**006C, Convention Center*

Sponsor: PASCO scientific

**Presenter to be announced**

Explore PASCO's science application for the iPad and Android Tablet. SPARKvue HD offers a suite of display and analytical tools, all within an integrated learning environment—including reflection prompts, journaling, and more. The app also supports the growing collection of SPARKlabs, integrating rich content with live data collection and analysis.

**Exploring Basic Optics (Phys)***(Grades 9–12)**006D, Convention Center*

Sponsor: PASCO scientific

**Presenter to be announced**

Explore the behavior of light with PASCO's basic optics components. Using lenses, a multifunction light box, prisms, and a ray table, see how easily quantitative measurements are made in a guided inquiry exploration. Demonstrations of color mixing and a sensor-based diffraction of light experiment are visualized using SPARKvue® software.

**Enhancing the Elementary Classroom Through Robotics (Gen)**

(Grades 2–5) 007A, Convention Center

Sponsor: LEGO Education

**Jessica Pope**, LEGO Education, Pittsburg, Kans.

Learn how your students can explore science and math concepts with LEGO Education WeDo Robotics by building moving models out of LEGO® bricks and programming the models using a graphical programming platform developed specifically for elementary students. Participants will discover key science, math, engineering, and literacy concepts by completing an actual classroom activity from the LEGO Education WeDo Robotics Set and Activity Pack.

**Volcanoes and the Ring of Fire (Earth)**

(Grades 5–12) 007B, Convention Center

Sponsor: Simulation Curriculum Corp.

**Herb Koller** ([hkoller@simcur.com](mailto:hkoller@simcur.com)), Simulation Curriculum Corp., Minnetonka, Minn.

What are volcanoes and where are they found? What volcanoes in the United States pose an immediate threat? See on the big screen how *The Layered Earth* can answer these questions with the help of our ready-to-use lessons.

**Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (Chem)**

(Grades 6–College) 007D, Convention Center

Sponsor: Wavefunction, Inc.

**Paul Price** ([sales@wavefun.com](mailto:sales@wavefun.com)), Trinity Valley School, Fort Worth, Tex.

Indispensable in many college chemistry courses, molecular modeling is also an effective learning tool for the high school classroom. Bring your laptop (Windows or Mac OS X) to this hands-on workshop and learn how to support your teaching of AP Chemistry with the powerful recent release of *Odyssey High School Chemistry*.

**HHMI's *The Day the Mesozoic Died* Classroom Resources (Earth)**

(Grades 7–College) 008A, Convention Center

Sponsor: Howard Hughes Medical Institute

**Cindy Gay**, Steamboat Springs High School, Steamboat Springs, Colo.

**Jeremy Conn**, Goshen High School, Goshen, Ohio

View HHMI's *The Day the Mesozoic Died*, a new short film that can enrich your teaching of the nature and power of the scientific method. The film traces the uncovering of key clues that led to the stunning discovery that an asteroid struck Earth 66 million years ago, triggering a mass extinction of animals, plants, and even microorganisms. Take home

free lessons, tips, and activities that address key concepts presented in the film, emphasizing the connections among all science disciplines.

**The Basics of Flipped Learning, Getting Started: A Panel Discussion of Experts (Gen)**

(Grades 9–12) 008B, Convention Center

Sponsor: Carolina Biological Supply

**Jon Bergmann** and **Aaron Sams**, Flipped Learning Network, Lake Forest, Ill.

Learn from this panel of experts (who've been through the school of hard knocks) how to actively transfer responsibility and ownership of learning to students through flipped learning. The result—improved student understanding of key concepts. Explore new tools, techniques, and resources to overcome challenges and successfully implement flipped learning.

**Experiences from a Professional Development Opportunity in Costa Rica (Bio)**

(Grades 5–12) 101B, Convention Center

Sponsor: Tropical Ecology Assessment and Monitoring Network

**Peggy Lubchenco**, Tropical Ecology Assessment and Monitoring Network, Goleta, Calif.

**Jenn Boyd**, Westlake High School, Westlake Village, Calif.

**Beth Platt**, Smithtown High School West, Smithtown, N.Y.

Last summer, 16 biology teachers participated in fieldwork at the Tropical Ecology Assessment and Monitoring (TEAM) Network site in Costa Rica. Come see how they translate their field experiences with camera-trapping and satellite-image interpretation into curriculum and student projects. TEAM will also demonstrate its newly created, extremely useful educational portal.

**Go Green and Bring STEM Concepts to Life with the K'NEX® Education Renewable Energy Set! (Phys)**

(Grades 5–9) 102B, Convention Center

Sponsor: K'NEX Education

**Presenter to be announced**

Address critical STEM concepts in the middle school classroom and gain instructional models that can enhance your students' understanding of these concepts in this hands-on workshop. K'NEX and the lessons provided in the teacher's guide use hands-on exploration in conjunction with an engaging, inquiry-based approach to learning. Students work together as they build, investigate, discuss, and evaluate concepts, ideas, and designs. Drawing for a K'NEX Education Renewable Energy Set!



**New Advanced Inquiry Labs for AP Biology from Flinn Scientific (Bio)***(Grades 10–12)* 103A, Convention Center

Sponsor: Flinn Scientific, Inc.

**Maureen Hunt** ([mhunt@flinnsci.com](mailto:mhunt@flinnsci.com)) and **Jennifer Sternberg** ([jsternberg@flinnsci.com](mailto:jsternberg@flinnsci.com)), Flinn Scientific, Inc., Batavia, Ill.

Four big ideas, more great labs! The revised AP Biology curriculum integrates scientific inquiry and reasoning through a series of student-directed, inquiry-based laboratory investigations. Join Flinn Scientific as we model the inquiry process and demonstrate activities from our new guided inquiry labs for AP Biology. We will share proven strategies for improving students' ability to generate meaningful questions, design experiments, and analyze scientific evidence. Handouts provided for all activities include alignment with the new AP Biology curriculum.

**Biomes and Invasive Species (Bio)***(Grades 9–12)* 203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

How do the characteristics of a biome determine the plant and animal life found there? How do nonnative species survive to become invasive species? In this activity from the SEPUP high school biology program, *Science and Global Issues: Biology*, students match a set of organism cards to proper climate/biome cards, then use literacy strategies to consider the impact of invasive species.

**Making Science Fun: MyBotanicPlanet.com (Bio)***(Grades K–5)* 204A, Convention CenterSponsor: TruGreen's *MyBotanicPlanet.com*

**Julie (Inspector Nectar) Baltz** ([julie.baltz@memphisbotanicgarden.com](mailto:julie.baltz@memphisbotanicgarden.com)) and **Drew (Flavor Flores) Massengale** ([drew.massengale@memphisbotanicgarden.com](mailto:drew.massengale@memphisbotanicgarden.com)), Memphis Botanic Garden, Memphis, Tenn.

Learn how to make K–5 science more fun. Creatively capture the persona of educational characters in TruGreen's *MyBotanicPlanet.com*. Become Flavor Flores to take your students on a remarkable journey as they discover that some of their favorite flavors come from plants. Or engage as Inspector Nectar to help students follow clues as they learn about pollination.

**NGSS and Scientific Practices—More Than Photo-shopping Models' Flaws (Phys)***(Grades 6–9)* 204B, Convention Center

Sponsor: Sangari Active Science

**Joe Krajcik**, Michigan State University, East Lansing

What comes to mind when you hear the word “model”? Solar system mobiles? Cells in pie plates? The new standards require going beyond the models used in science for years! Come engage in modeling activities for middle schoolers and unpack how to think about models you use now in ways consistent with the highly anticipated NGSS.

**Carolina Investigations™ for AP Biology Labs (Bio)***(Grades 9–12)* 206A, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Looking for a seamless transition to the new curriculum? Enrich your students' experience in AP Biology with unique solutions from Carolina. This hands-on workshop introduces you to new resources designed for the revised College Board AP Biology curriculum, while enhancing your ability to introduce inquiry into your classroom.

**Integrating Common Core Writing, Speaking, and Listening Strategies into Science Instruction (Gen)***(Grades K–5)* 206B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Explore ways to provide students with Common Core writing, speaking, and listening strategies through inquiry-based instruction. These skills lead to better understanding in writing, speaking, and reading science.

**High School Biology in a Digital World: Critical Thinking Trumps Information Overload (Bio)***(Grades 9–12)* 209, Convention Center

Sponsor: Discovery Education

**Wendy Raymond**, Williams College, Williamstown, Mass.

Join Wendy Raymond, Discovery Education senior biology consultant, in exploring the excitement of biology education in a digital world. Learn why some students with the best high school science grades often struggle in college courses and what might be done to provide a stronger high school science foundation.

**Physics with Vernier (Phys)**  
(Grades 9–College) 210A, Convention Center

Sponsor: Vernier Software & Technology

**David L. Vernier** ([info@vernier.com](mailto:info@vernier.com)) and **Verle Walters** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

Experiments such as sound waves and motion of a cart on a ramp from our popular *Physics with Vernier* lab book will be performed. A variety of new physics accessories such as the Diffraction Apparatus will be available to try as well. Conduct these experiments using LabQuest 2 and LabQuest Mini.

**Inquiry-based Biology with Vernier (Bio)**  
(Grades 9–College) 210B, Convention Center

Sponsor: Vernier Software & Technology

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

**Rick Rutland**, Five Star Education Solutions, LLC, San Antonio, Tex.

Do you need to add inquiry labs to your biology course? Vernier has done the work for you with our new book, *Investigating Biology through Inquiry*. In this hands-on workshop, you will learn how to conduct a biology inquiry investigation using sensors with our LabQuest 2.

**Put the “E” in STEM: Science and Engineering Practices in Action (Phys)**

(Grades 6–12) 211, Convention Center

Sponsor: Ward’s Science

**Joe Simmons**, VWR Education, Rochester, N.Y.

Are you ready to race? Come build a rubber band racer as outlined in a guided inquiry activity incorporating science and engineering practices into a fun physical science lesson. Each participant will build, race, and keep his or her own vehicle while satisfying science and engineering practice developing and using models.

**Unleashing Your Students’ Inner Inventor—Robots, Video Games, and DIY! (Gen)**

(Grades 7–College) 212B, Convention Center

Sponsor: SparkFun Electronics

**Lindsay Craig** ([linz.craig@sparkfun.com](mailto:linz.craig@sparkfun.com)) and **Brian Huang**, SparkFun Electronics, Boulder, Colo.

Create a musical instrument or a video game controller while learning real-world STEM skills. This workshop shows how easily students can create fun electronic projects.

**What the Heck Happened?! (Gen)**  
(Grades 3–10) 214A, Convention Center

Sponsor: Educational Innovations, Inc.

**Ted Beyer**, Educational Innovations, Inc., Bethel, Conn. Discrepant events seize students’ attention, and Educational Innovations has real jaw-droppers! Mom and Dad will hear about these at the dinner table. Door prizes and freebies!

**Car and Ramp: Using a Graph to Predict Speed with the CPO Science Data Collector (Phys)**

(Grades 6–12) 214D, Convention Center

Sponsor: CPO Science/School Specialty Science

**Erik Benton** and **Nathan Olsson**, CPO Science/School Specialty Science, Nashua, N.H.

Combine a unique data collector and photogate system with a car and ramp experiment for a series of inquiry-based investigations. Speed, acceleration, and Newton’s laws are uncovered while developing a theory based on your own graph used to predict the speed of the car at any point on the ramp.

**Flinn Scientific Morning of Chemistry: The Chemistry of Teaching (Chem)**

(Grades 6–12) Grand Ballroom C1, Convention Center

Sponsor: Flinn Scientific, Inc.

**Bob Becker** ([flinn@flinnsci.com](mailto:flinn@flinnsci.com)), Kirkwood High School, Kirkwood, Mo.

Come to the Flinn Scientific “Morning of Chemistry” and see award-winning teacher Bob Becker present 20 exciting chemical demonstrations. Color changes and KABOOMS bring chemistry to life—and illustrate valuable teaching principles. Don’t miss this unique presentation. Handouts!

## 10:00 AM–12 Noon Exhibitor Workshop

**Worm and Squirm Your Way into Behavior Labs (Bio)**

(Grades 9–College) 217C, Convention Center

Sponsor: Bio-Rad Laboratories

**Sherri Andrews**, Bio-Rad Laboratories, Hercules, Calif.

How do genes influence behavior? Use the model organism *C. elegans* (a nematode) to answer this question in an engaging activity that compares normal and mutant worm behavior. We will explore worm taste preferences in a simple and fast chemotaxis assay, and examine the connection of our worm mutant to human diseases. Come see this great alternative AP fruit fly behavior lab!

**10:30 AM–12 Noon Science Seminar****The Bat Flower Plant: New Hope for Treating Cancer? (Bio)***(High School–College) Grand Ballroom C2, Convention Center*

**Susan L. Mooberry** (*mooberry@uthscsa.edu*), Professor of Pharmacology, The University of Texas Health Science Center, San Antonio

Presider: Mary Poarch, Local Arrangements Coordinator, NSTA San Antonio National Conference, and North East ISD, San Antonio, Tex.

Focusing on identifying more effective drugs for the treatment of cancer, Dr. Mooberry's laboratory has isolated a large group of compounds from the tropical bat flower plant that show promising properties. She will discuss the initial discovery of these compounds, how they work against cancer cells, and the efforts underway to select one that might have potential to help people with cancer.

*Dr. Susan Mooberry's research is dedicated to the discovery of more effective therapies for the treatment of cancer, with a primary focus on breast cancer. There are several aspects to her work, including drug discovery, identification of the mechanisms of drug action, the nature of drug resistance, identifying rational drug combinations, and elucidation of the cellular pathways through which drugs work to kill cancer cells. Dr. Mooberry's drug discovery program identifies new anticancer agents from natural products and from small-molecule chemical libraries.*

*She holds seven patents on new classes of agents with potential use against cancer and has a patent pending. One of these agents was clinically developed and tested at the Cancer Therapy & Research Center (CTRC) Institute for Drug Development.*

*Recipient of the President's Council Excellence Award by the Health Science Center for her outstanding research accomplishments, she is the co-leader of the Experimental Therapeutics Program of the CTRC at the University of Texas Health Science Center at San Antonio. She is also the principal investigator of grants from the National Cancer Institute and the Department of Defense Prostate Cancer program. In 2010, Dr. Mooberry was inducted into the San Antonio Woman's Hall of Fame.*

*She earned her PhD in pharmacology at the Medical University of South Carolina in Charleston.*

**10:30 AM–12 Noon Science Seminar****Icons and Innovation in Paleontology (Gen)**  
*(General) Grand Ballroom C3, Convention Center*

**Louis L. Jacobs** (*jacobs@smu.edu*), Professor of Earth Sciences, and President, Institute for the Study of Earth and Man, Southern Methodist University, Dallas, Tex.

Presider: Deb Thrall, President-Elect, New Mexico Science Teachers Association, Albuquerque

Fossils have long been a gateway to science for learners of all ages because of the imaginative appeal of ancient creatures, lost worlds, extinction, and the evolution of our own species. Like all sciences, paleontology has made great strides in recent years. Paleontology has been reinvigorated by new discoveries focused on innovative ways to visualize fossils and search for biomolecules that relate to issues of broader societal and scientific relevance. Based on personal field and laboratory studies, Louis will highlight new directions in this field, including a fresh look at the most prominent icon of modern geology—the puzzle-like fit of Africa and South America.

*Louis Jacobs is a vertebrate paleontologist who utilizes the fossil record to answer significant questions about Earth and life history. His fieldwork is currently focused on the iconic, puzzle-like fit of Africa and South America, as viewed through the rocks and fossils of coastal Angola. Internationally recognized for his fossil discoveries, seven fossil species have been named for him, including Malawisaurus, which he discovered in Malawi.*

*At present, he is a professor in Southern Methodist University's Roy M. Huffington Department of Earth Sciences in Dallas and president of the Institute for the Study of Earth and Man at SMU. He also serves on the National Park Service Science Committee Advisory Board.*

*Among his publications are Quest for the African Dinosaurs: Ancient Roots of the Modern World, Lone Star Dinosaurs, and Cretaceous Airport, as well as more than 100 scientific papers and edited volumes.*

*Louis received his PhD in geology from The University of Arizona in 1977.*

### 10:30 AM–12 Noon Exhibitor Workshop

#### Exploring STEM with K’NEX® (Gen)

(Grades 3–6) 102A, Convention Center

Sponsor: Fisher Science Education

**Robert Marshall**, Carnegie Science Center, Pittsburgh, Pa.

STEM is all about preparing the future workforce of America. K’NEX Education provides the ideal way to engage your students in an experiential learning environment focused on STEM. Join Robert Marshall, an educator from Carnegie Science Center’s award-winning STEM Center, and learn how you can incorporate activities that encourage student innovation, cognitive learning, and an aptitude for science. One participant will walk away with a set of K’NEX Education products.

### 10:30 AM–12:30 PM Exhibitor Workshop

#### FOSS Formative Assessment: Making Student Thinking Visible (Gen)

(Grades K–6) 214C, Convention Center

Sponsor: Delta Education/School Specialty Science–FOSS

**Brian Campbell** and **Kathy Long**, The Lawrence Hall of Science, University of California, Berkeley

Formative assessment shows great promise for improving student achievement. FOSS makes it easy to make student thinking visible, interpret the evidence of learning, and take action to improve learning. Join FOSS developers for an introduction to the new assessment system created for the 3rd edition, including new computer software (FOSSmap).

### 10:30 AM–1:30 PM Meeting

#### Next Steps Advisory Board Meeting

(By Invitation Only) Conference Room 10, Marriott Rivercenter

### 11:00–11:30 AM Presentation

#### SESSION 1

#### Teaching College-Level Anatomy and Physiology in High Schools Through a Concurrent Enrollment Program (Bio)

(High School–College)

Bowie C, Grand Hyatt

**Murray S. Jensen** ([mjsjensen@umn.edu](mailto:mjsjensen@umn.edu)), University of Minnesota, Minneapolis

Join me for an overview of the University of Minnesota’s concurrent enrollment program through which a four-credit, freshmen-level anatomy and physiology course is offered at more than 20 area high schools.

### 11:00 AM–12 Noon Meeting

#### Discovery Education Focus Group on the New Health/Wellness Program *fit 4 the classroom*

Valero, Marriott Riverwalk

Eat, network, and share your ideas about *fit4theclassroom.com* and STEM integration for K–6 classrooms. First 25 to register receive prizes...and everyone gets lunch! To register, visit [fit4theclassroom.eventbrite.com](http://fit4theclassroom.eventbrite.com).

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### 11:00 AM–12 Noon Presentations

#### SESSION 1

#### NASA INSPIRE: A Five-Year Retrospective on Online Learning (Earth)

(Middle Level–High School) 003A, Convention Center

**Bradford Davey** ([brad@techforlearning.org](mailto:brad@techforlearning.org)) and **Hilarie B. Davis** ([hilarie@techforlearning.org](mailto:hilarie@techforlearning.org)), Technology for Learning Consortium Inc., North Kingstown, R.I.

INSPIRE stands for Interdisciplinary National Science Project Incorporating Research and Education Experience. Examine the effects of online learning on students’ interest in NASA and STEM. After five years, much has been learned and will be shared.

#### SESSION 2

#### Magical Illusions and Scintillating Simulations for Science—It’s Showtime! (Gen)

(Elementary–Middle Level/Informal) 202A, Convention Center

**Alan J. McCormack** ([amccorma@mail.sdsu.edu](mailto:amccorma@mail.sdsu.edu)), 2010–2011 NSTA President, and San Diego State University, San Diego, Calif.

Storylines, discrepant events, and magic develop concepts in both physical and biological sciences, pique children’s interest and imagination, and build creative and logical thinking skills.



## SESSION 3

✓ **Formative Assessment in Middle Grades Science**  
(Gen)

(Middle Level) 202B, Convention Center  
**David A. Young** (*dayoung7@gmail.com*), Fayetteville High School, Fayetteville, Ark.

Join me as I present several standards-based investigations for the middle grades. I'll demonstrate how formative assessment may be done as students work through these investigations.

## SESSION 4

**CESI Session: Strong STEMs Need Strong Sprouts!**  
(Bio)

(Preschool–Elementary) 212A, Convention Center  
**Julie V. McGough** (*mrmagoojulie2@att.net*), Valley Oak Elementary School, Fresno, Calif.

Use STEM to construct a plant and use marbles to show the process of photosynthesis! Make abstract science concepts concrete!

## SESSION 5

**ASTC Session: Creating Virtual Fieldwork Experiences (VFEs): Place-based, Technology-rich Professional Development for Formal and Informal Educators**  
(Gen)

(Informal Education) 213A, Convention Center  
**Don Duggan-Haas** (*dad55@cornell.edu*) and **Richard A. Kissel** (*rak256@cornell.edu*), Museum of the Earth, Paleontological Research Institution, Ithaca, N.Y.

Creating VFEs engages educators in a collaborative close study of local environments and yields educational resources useful for catalyzing, extending, or sometimes replacing actual fieldwork.

## SESSION 6

**Managing Science in the Early Childhood Setting**  
(Gen)

(Preschool–Elementary) 213B, Convention Center  
**Andrea Zdinak Andretta**, Norwalk (Conn.) Public Schools

Join a kindergarten teacher and an English language learner coordinator for a discussion on how to incorporate science into the already busy day without dropping other subjects.

## SESSION 7 (two presentations)

(Elementary–Middle Level) 216B, Convention Center  
**Hot Warm-ups** (Gen)

**Meshelle M. Smith** (*meshelle.smith@humble.k12.tx.us*), Woodland Hills Elementary School, Kingwood, Tex.

Take home easy-to-implement warm-ups that engage students as soon as they sit down!

**Capturing Students' Attention in the Classroom and Beyond!** (Gen)

**Anne Durrance** (*anne.durrance@gmail.com*), G.W. Long Elementary School, Skipperville, Ala.

Walk away with super tips and techniques for using blogging and social networking to inform, encourage, and challenge young learners (and their families) outside the classroom.

## SESSION 8

**Using Video to Enhance Confidence in Teaching Engineering** (Gen)

(Elementary) Crockett A, Grand Hyatt  
**Melissa Higgins** (*mhiggins@mos.org*), Museum of Science, Boston, Mass.

Find out how using classroom videos to model effective engineering instruction can increase elementary educators' confidence in and ability to teach engineering and technology.

## SESSION 9

**Embedding Explicit Literacy Strategies into Science Instruction to Support Struggling Learners** (Gen)

(General) Crockett C, Grand Hyatt  
**Maya Israel** (*misrael@illinois.edu*), University of Illinois at Urbana-Champaign, Champaign

Join me as I highlight evidence-based ways of embedding literacy instruction within science lessons with attention to balancing explicit instruction and inquiry to support diverse learners.

## SESSION 10

**Focusing On Wildlife Conservation: Developing Public Service Announcements for Critically Endangered Species** (Env)

(General) Crockett D, Grand Hyatt  
**Christine Marie Mazza** (*cmazza4@schools.nyc.gov*), New York City Dept. of Education, Flushing, N.Y.

**Andrea Drewes** (*adrewes@wcs.org*), Wildlife Conservation Society/Bronx Zoo, Bronx, N.Y.

Hear how the New York City Department of Education and the Wildlife Conservation Society have partnered to work with teachers and students to use iPads to create and publish public service announcements for critically endangered species.

**SESSION 11**

**Tips and Resources for First-Year Chemistry Teachers  
(Chem)**

(High School–College) Lone Star Ballroom A, Grand Hyatt  
**Wai S. Chan** ([waisum.chan@yahoo.com](mailto:waisum.chan@yahoo.com)), William P. Clements High School, Sugar Land, Tex.

Don't be anxious and worried about teaching chemistry! Be prepared to enjoy your chemistry teaching experience with useful resources and tips in this session.

**SESSION 12**

**The Rube Goldberg Machine Contest: Invention in the Classroom  
(Gen)**

(Middle Level–College) Lone Star Ballroom E, Grand Hyatt  
**Shawn S. Jordan** ([shawn.s.jordan@asu.edu](mailto:shawn.s.jordan@asu.edu)), Arizona State University, Mesa

Rube Goldberg Machine Contests challenge middle school, high school, and college students to build complex inventions that complete simple tasks while linking STEM and the arts.



**SESSION 13**

**CSI Web Adventures: Engage Your Students in Scientific Methods and Techniques Applied to Solve Crimes  
(Bio)**

(General) Lone Star Ballroom F, Grand Hyatt

**Kristi G. Bowling** ([kristi.bowling@rice.edu](mailto:kristi.bowling@rice.edu)), Rice University, Houston, Tex.

**Lynn Lauterbach** ([lynnlauterbach@gmail.com](mailto:lynnlauterbach@gmail.com)), Loveland, Colo.

Developed with CBS and the American Academy of Forensics, this free award-winning website provides rookie training plus cases for students to solve.

**SESSION 14**

**The Shell Science Lab Challenge: Equipment for Your Lab!  
(Chem)**

(Middle Level–High School) Mission A, Grand Hyatt

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

Learn how you can receive amazing prize packages, including new science lab equipment, NSTA memberships, and more!

**SESSION 15**

**What Teachers Told Us  
(Gen)**

(Informal Education) Mission B, Grand Hyatt

**Mary Ann Wojton** ([mwojton@mail.cosi.org](mailto:mwojton@mail.cosi.org)), COSI, Columbus, Ohio

Find out what teachers want from informal science providers. Results from COSI's Teacher Needs Analysis will be shared as well as programs that we are doing that meet the needs of teachers.

**SESSION 16**

**NARST Session: Finding Science in the Everyday: Balancing Demonstration and Contextualization in the Chemistry Classroom  
(Chem)**

(High School/Supervision) Presidio C, Grand Hyatt

**Catherine E. Milne** ([cem4@nyu.edu](mailto:cem4@nyu.edu)), NYU Steinhardt, New York, N.Y.

How can stories of everyday experiences provide motive and context for students to explore multimedia explanatory models of simple kinetic molecular theory and associated topics? Join us and find out!

## SESSION 17

**Integrating Engineering and Science Learning**  
(Gen)

(Elementary–Middle Level) Texas Ballroom C, Grand Hyatt  
**Arthur H. Camins** ([arthurcamins@gmail.com](mailto:arthurcamins@gmail.com)), Stevens Institute of Technology, Hoboken, N.J.

Learn about the successes and challenges of our NSF Math Science Partnership grant to integrate engineering and science learning in grades 3–8.

## SESSION 18

**The Science of Service Learning: One School's Journey to Promote Science Knowledge Through Service**  
(Env)

(General) Texas Ballroom E, Grand Hyatt

**Jennifer C. Williams** ([jenniferwilliams@newmanschool.org](mailto:jenniferwilliams@newmanschool.org)), **Lisa Coulon** ([lisacoulon@newmanschool.org](mailto:lisacoulon@newmanschool.org)), and **Elaine T. Sevin** ([elainesevin@newmanschool.org](mailto:elainesevin@newmanschool.org)), Isidore Newman School, New Orleans, La.

Hear how Isidore Newman School implemented science-based service learning programs that increase student understanding of coastal issues facing communities along the Gulf Coast.

## SESSION 19


**Next Generation Science Standards: Teacher Insights from the Writing Team—Physical Sciences (Middle/High School)**  
(Chem)

(Middle Level–High School) Texas Ballroom F, Grand Hyatt

**Vanessa Westbrook** ([vannedani\\_61@yahoo.com](mailto:vannedani_61@yahoo.com)), Chairperson, NSTA San Antonio National Conference, and Westbrook Consulting, Austin, Tex.

**Julie M. Pepperman** ([fjpep@att.net](mailto:fjpep@att.net)), Maryville, Tenn.

**Craig T. Gabler** ([cgabler@esd113.org](mailto:cgabler@esd113.org)), Educational Service District 113, Tumwater, Wash.

Join middle school and high school physical science teachers who are writers of the highly anticipated Next Generation Science Standards for an exploration of the development of NGSS— from teachers for teachers. Writers will share the thinking and ideas that went into writing this landmark document and the challenges they experienced along the way. This session will address and explore physical science from the secondary perspective (grades 6–12) and what NGSS will mean for classroom science teachers.

## SESSION 20

**Write for an NSTA Journal** (Gen)

(General) Travis A, Grand Hyatt

**Ken Roberts**, Assistant Executive Director, Journals, NSTA, Arlington, Va.

Meet with the editors to learn how to properly prepare and submit a manuscript to one of NSTA's journals. The editors will be available at the end of the session to discuss and critique your article ideas.

## SESSION 21

**Inquiry Writing for Diverse Learners via Common Core**  
(Gen)

(Elementary/Informal Ed) Travis D, Grand Hyatt

**Analorena Sanchez** ([alsanchez@washoeschools.net](mailto:alsanchez@washoeschools.net)), Glenn Duncan STEM Academy, Reno, Nev.

Learn how a STEM Academy has infused writing inquiry into the curriculum, which proves results for diverse learners. Lesson handouts and door prizes!

## SESSION 22

**SYM-1 Follow-Up Session: Teaching About Climate Change—Here and Now**  
(Gen)

(General) Conference Room 3/4, Marriott Rivercenter

**Frank Niepold** ([frank.niepold@noaa.gov](mailto:frank.niepold@noaa.gov)), NOAA, Silver Spring, Md.

During this NOAA session, teaching about climate change and related subjects will be explored using reviewed collections of excellent educational resources.

## SESSION 23

**AMSE Session: Enhancing a STEM Culture Through Multidisciplinary Education and Research Teams**  
(Gen)

(High School) Conference Room 6, Marriott Rivercenter

**Preston D. Robinson III** ([prrobinson@jackson.k12.ms.us](mailto:prrobinson@jackson.k12.ms.us)), Jackson (Miss.) Public Schools

**Constance Martin** ([constance.n.martin@jsums.edu](mailto:constance.n.martin@jsums.edu)), Jackson State University, Jackson, Miss.

Come learn how to enhance an academic pipeline for training and mentoring K–12 students and undergraduate students for STEM careers.

**SESSION 24** (two presentations)

(Middle Level–High School) Conf. Room 15, Marriott Rivercenter

**21st-Century Science Classroom (Gen)**

**Mark Prosize** (*mprosize@lakeseagles.com*) and **Brandon Watters** (*bwatters@lakeseagles.com*), Lakes Community High School, Lake Villa, Ill.

iPads, iPad probes, HDTVs, and more are now a part of regular instruction. Discover innovative teaching and learning that fully embraces this technological age.

**Urban Students Creating Media (Gen)**

**Nicole Hesson** (*nicole.hesson@temple.edu*), Haverford College, Ardmore, Pa.

Why not get students involved in creating their own? Come learn how to engage students in creating their own media.

**SESSION 25**

**The 3 Es: Easy, Exciting, inExpensive Physics (Phys)**

(Middle Level–College) Salon B, Marriott Rivercenter

**Kathy Mirakovits** (*kmirakovits@portageps.org*) and **Lindsey McConney** (*lmccconney@portageps.org*), Portage Northern High School, Portage, Mich.

Experiments and equipment for physics don't always have to be expensive or complex. Join us for easy, fun ways to excite students about physics.

**SESSION 26**

**The 50 Best Physics Demos to Do Before You Die... (Phys)**

(Middle Level–High School) Salon E, Marriott Rivercenter

**Peter Hopkinson** (*phopkinson@shaw.ca*), Retired Educator, Burnaby, B.C., Canada

Well maybe not quite 50, but as many as we can fit into an hour...and they really are the best!

**SESSION 27**

**PDI Outdoor Science Pathway Session: Integrating Mathematics and Science (Gen)**

(Elementary–Middle Level) Salon F, Marriott Rivercenter

**Jessica Jetton** (*jjetton@forsyth.k12.ga.us*), Forsyth County Schools, Cumming, Ga.

Would your principal support teaching science outdoors if you could integrate mathematics? Come get some support to make this happen.

**SESSION 28** (two presentations)

(Middle Level–High School) Salon J, Marriott Rivercenter

**Teaching Physical Science Principles Through the Design of an Underwater Robot (Phys)**

**Jason C. Sayres** (*jason.sayres@stevens.edu*), Stevens Institute of Technology, Hoboken, N.J.

Let's discuss underwater robotic projects as vehicles for teaching physical science principles, how they differ from land-based robotics projects, and what unique challenges are involved.

**Tiering Your Objectives to Meet the Needs of Every Learner (Phys)**

**Tony A. Losinger** (*tlosinger@sequoits.com*) and **Sarah Fay** (*sfay@sequoits.com*), Antioch Community High School, Antioch, Ill.

Come learn about and receive multiple examples of how to tier your classroom objectives around the needs of each learner.

**SESSION 29**

**Send the Right Message: Excite and Engage Kids in STEM with Your Words, Images, and Real-World Connections (Chem)**

(Informal Education) Alamo Salon B, Marriott Riverwalk

**Tricia Berry** (*triciaberry@txgcp.org*), The University of Texas at Austin

Learn the latest research about engaging girls in STEM and explore research-based best practices in messaging that connect diverse populations to the excitement of STEM.

**SESSION 30**

**A Multiplayer Online Game That Fosters Engagement and Learning in STEM (Bio)**

(General) Alamo Salon E, Marriott Riverwalk

**Susannah Gordon-Messer** (*sgmesser@mit.edu*) and **Louisa Rosenheck** (*louisa@mit.edu*), MIT, Cambridge, Mass.

Immerse yourself in MIT's game world that engages biology students and provides real-time teacher feedback about student learning. Sign up your class to play!

**SESSION 31**

**Forensic Anthropology: Teaching the Skeletal System (Bio)**

(Middle Level–High School) Alamo Salon F, Marriott Riverwalk

**Alison B. Seymour** (*seymoura@pvpusd.k12.ca.us*), Ridgecrest Intermediate School, Rancho Palos Verdes, Calif.

Hands-on lessons incorporating science, math, history, and English language arts (ELA) for middle school and high school students will be presented with teaching strategies, student examples, and handouts.



**11:00 AM–12 Noon Workshops****Incorporating ASL in Astronomy Education—for Deaf and Hearing Students (Earth)***(Informal Education) 001A, Convention Center***Jacob Noel-Storr** ([jake@cis.rit.edu](mailto:jake@cis.rit.edu)) and **Greyson Watkins**, Rochester Institute of Technology, Rochester, N.Y.

We will involve participants in kinesthetic and American Sign Language–based astronomy activities designed to create integrated learning experiences.

**Exploring Seafloor Spreading with Data from the Integrated Ocean Drilling Program (IODP) (Earth)***(Middle Level–High School) 001B, Convention Center***Barbara J. Simon-Waters** ([barbarasimonwaters@gmail.com](mailto:barbarasimonwaters@gmail.com)), Morehead City, N.C.

Join me as I present the activity “The Race Is On...with Seafloor Spreading,” which was developed during the Deep Earth Academy workshop. Real-time science in the classroom!

**Modeling the Night Sky (Earth)***(Elementary–Middle Level) 002, Convention Center***Mary Kay Hemenway** ([marykay@astro.as.utexas.edu](mailto:marykay@astro.as.utexas.edu)), The University of Texas at Austin

Model planetary motions in a timescale model of the solar system and receive a printed copy of the NASA-supported StarDate “The Solar System.”

**Exploring the Hubble Universe (Earth)***(Middle Level–College) 101A, Convention Center***Keely D. Finkelstein** ([keelyf@astro.as.utexas.edu](mailto:keelyf@astro.as.utexas.edu)), The University of Texas at Austin

Participants will be engaged in a hands-on demonstration of a new interactive education application for smart devices (e.g. iPhones and iPads) called “HubbleU,” which contains educational materials on the Big Bang and our own galaxy. Receive a free copy of a “dark energy” poster from McDonald Observatory.

**Deduce to Reduce English Language Learners’ Frustration with Science Text (Gen)***(Elementary–Middle Level) 201, Convention Center***Maria Cieslak** ([mariacieslak@yahoo.com](mailto:mariacieslak@yahoo.com)), **Francine Gollmer** ([sgollmer@aol.com](mailto:sgollmer@aol.com)), and **Michael Coop**, Gene Ward Elementary School, Las Vegas, Nev.

Discover interactive tasks using cooperative learning, graphic organizers, and a Backward Assessment Model. Come, play, and learn!

**Understanding Our Finite World (Env)***(Elementary–Middle Level) 208, Convention Center***Pamela Wasserman** ([pwasserman@popconnect.org](mailto:pwasserman@popconnect.org)), Population Connection, Washington, D.C.

Discover insightful hands-on activities to teach about Earth’s carrying capacity and sustainable ways to meet people’s needs in a world of seven billion and growing.

**Showing Young Children the Art of Science (Phys)***(Preschool–Elementary) 216A, Convention Center***James M. Dettmer**, Rainbow Station at Three Chopt, Richmond, Va.

Let’s explore how using hands-on materials for artistic creation and scientific inquiry can teach physical science and develop a passion for lifelong learning.

**Science + Writing = Learning (Gen)***(Elementary–Middle Level) 217A, Convention Center***Julie Alexander** ([jualexan@columbia.k12.mo.us](mailto:jualexan@columbia.k12.mo.us)), Columbia (Mo.) Public Schools

Explore math and literacy integration through hands-on activities. Student work examples, motivation of reluctant writers, assessment methods, and modifications for special needs students provided.



**NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon (Earth)**

(Elementary–High School) Ballroom A, Convention Center  
**Michelle Harris** (*michelle.harris@apsva.us*), Wakefield High School, Arlington, Va.

**Roberta M. Johnson** (*rmjohnsn@nestanet.org*), NESTA and University at Albany, Boulder, Colo.

**Margaret A. Holzer** (*mholzer@monmouth.com*), Chatham High School, Chatham, N.J.

**Sharon Katz Cooper** (*scooper@oceanleadership.org*), Deep Earth Academy, Consortium for Ocean Leadership, Washington, D.C.

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

**Lisa Gardiner** (*lisagard@ucar.edu*) and **Becca Hatheway** (*hatheway@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.

**Paige Valderrama Graff** (*paige.v.graff@nasa.gov*), Jacobs ESCG/NASA Johnson Space Center, Houston, Tex.

**Preston M. Lewis, Jr.** (*preston.lewis@nasa.gov*), NASA Langley Research Center, Hampton, Va.

**Timothy McCollum**, Eastern Illinois University, Charleston

**H. Michael Mogil** (*hmmogil@weatherworks.com*), How The Weatherworks, Naples, Fla.

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

**Jean Pennycook** (*jean.pennycook@gmail.com*), Penguin Science.com, Fresno, Calif.

**Carole J. Reesink** (*cjreesink@muscanet.com*), Retired Educator, Muscatine, Iowa

**Rosemarie Sanders** (*rose.sanders@me.com*), Longfellow Middle School, White Plains, N.Y.

**Jennifer Savage** (*jsavage@seti.org*), SETI Institute, Mountain View, Calif.

Join more than 20 NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

**DuPont Session: DuPont Presents “The Science of Packaging” (Gen)**

(Middle Level–High School) Bonham B, Grand Hyatt

**Timothy Dalby** (*tdalby@wilmingtonfriends.org*), Wilmington Friends School, Wilmington, Del.

**Peggy Vavalla**, DuPont, Wilmington, Del.

Participants will be introduced to a brief history of polymers and how they are used. Hands-on activities will illustrate the variables that must be considered as we design a package to preserve dry dog food.

**Then and Now: Documenting Student Understanding (Gen)**

(Middle Level) Bonham C, Grand Hyatt

**Claudia Khourey-Bowers** (*cmkhoure@kent.edu*) and **Jessica Allen** (*jallen35@kent.edu*), Kent State University at Stark, North Canton, Ohio

Find out how to elicit students’ prior knowledge on a topic and demonstrate their growth in understanding following instruction.

**Teaching Newton’s Three Laws with Coaster Cars (Phys)**

(Middle Level) Bonham D, Grand Hyatt

**Kasie L. Sattler**, Wrightstown Middle School, Wrightstown, Wis.

**Sharon A.L. Hushek** (*sharon.hushek@franklin.k12.wi.us*), Ben Franklin Elementary School, Franklin, Wis.

**Mary K. Fassbender** (*mary.fassbender@franklin.k12.wi.us*) and **Beth Gorak**, Forest Park Middle School, Franklin, Wis. Get a hands-on approach to teaching Newton’s three laws using wooden coaster cars.

**NSELA Session: Take the Lead: Ensure Your Students Can Master the Science Practices (Gen)**

(Supervision/Administration) Bonham E, Grand Hyatt

**Deborah Tucker** (*deborahlt@aol.com*), Science Education Consultant, Napa, Calif.

**Grant M. Gardner** (*grantmgardner@msn.com*), Assessment Services, Inc., Pepperell, Mass.

Leaders in science education use multiple assessment strategies. Try out a hands-on performance task and add this form of assessment to your repertoire.

**T.I.P.S. for Success in Using Formative Assessments (Gen)**

(Elementary–High School) Bowie B, Grand Hyatt

**Susanne L. Hokkanen** (*susanne.hokkanen@gmail.com*), Colin Powell Middle School, Matteson, Ill.

**Caryn Meirs** (*caryn.meirs@gmail.com*), Half Hollow Hills Central School District, Melville, N.Y.

Learn how to use the T.I.P.S. (Think, Information, Process, and Solution) format and Socratic discussion to help identify and measure student understanding.

**NSTA Press® Session: Ways to Approach Doing POE Exercises in Your Classroom (Gen)***(General)* Lone Star Ballroom B, Grand Hyatt**G. Michael Bowen** ([gmbowen@yahoo.com](mailto:gmbowen@yahoo.com)), Mount Saint Vincent University, Halifax, N.S., Canada

Using example activities from the NSTA book, *Predict, Observe, Explain: Activities Enhancing Scientific Understanding*, the authors will demonstrate how to effectively engage students in POE activities to develop their conceptual understanding. Handouts!

**Gray Matter: Learning and Teaching Science with the Brain in Mind (Gen)***(General)* Lone Star Ballroom C, Grand Hyatt**Carolyn A. Hayes** ([caahayes@comcast.net](mailto:caahayes@comcast.net)), Indiana University School of Medicine, Indianapolis

Experience via science activities how discoveries in cognitive neuroscience are applied to the NSES teaching standards and the principles of how students learn science.

**Lake St. Clair—Use or Abuse? (Env)***(Informal Education)* Republic B, Grand Hyatt**Christine Geerer** ([christine.geerer@gpschools.org](mailto:christine.geerer@gpschools.org)), **Laura M. Mikesell** ([laura.mikesell@gpschools.org](mailto:laura.mikesell@gpschools.org)), and **Alexandra Gulyas** ([alexandra.gulyas@gpschools.org](mailto:alexandra.gulyas@gpschools.org)), Parcels Middle School, Grosse Pointe Woods, Mich.

Come join an entertaining and highly interactive role-play that uncovers sources of point and nonpoint pollution in our lake. Easily adaptable to your watershed.

**NSTA Press® Session: Picture-Perfect Science Lessons: Using Picture Books to Guide Inquiry (Gen)***(Elementary)* Texas Ballroom D, Grand Hyatt**Emily Morgan** ([emily@pictureperfectscience.com](mailto:emily@pictureperfectscience.com)), Picture-Perfect Science, LLC, West Chester, Ohio**Karen Ansberry** ([karen@pictureperfectscience.com](mailto:karen@pictureperfectscience.com)), Mason (Ohio) City Schools

Join the authors of NSTA's award-winning *Picture-Perfect Science* series to learn how to use picture books to teach science and reading together!

**PDI WestEd Pathway Session: Assessment-centered Teaching (Gen)***(General)* Conference Room 12, Marriott Rivercenter**Kathy DiRanna** ([kdirann@wested.org](mailto:kdirann@wested.org)), WestEd, Santa Ana, Calif.

Come learn about a portfolio process that designs assessment plans before teaching a unit, interprets student work

for patterns, and modifies instruction/assessment based on student work.

**Switch It Up! How to Use Reflective Teaching to Keep Your Students Engaged and Learning (Gen)***(Middle Level–High School)* Conf. Room 16, Marriott Rivercenter**Shannon Mittleman**, Decatur (Ill.) Public Schools**Elizabeth Bartimus** ([ebartimu@dps61.org](mailto:ebartimu@dps61.org)), Johns Hill Magnet School, Decatur, Ill.

Come get inspired by a veteran science teacher who is always striving to find new, exciting ways to engage her students in science. Never be afraid to change...live for it!

**Connecting Science to Poetry, Music, and Art: A Student-centered Lesson in Making Mathematical Models from Nature (Gen)***(General)* Salon A, Marriott Rivercenter**Diane D. Walker** ([dianewalker2005@gmail.com](mailto:dianewalker2005@gmail.com)), New Mexico Highlands University, Rio Rancho

This hands-on workshop presents an innovative model for using conceptual and creative knowledge from science, math, and literacy to provide interesting, appropriate, and relevant curricular connections.

**PDI McREL Pathway Session: Designing Effective Science Instruction—The Role of Science Discourse (Gen)***(General)* Salon K, Marriott Rivercenter**Anne Tweed** ([atweed@mcrel.org](mailto:atweed@mcrel.org)), 2004–2005 NSTA President, and McREL, 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. Participants will practice using question stems to elicit scientific understanding and learn how to incorporate them into lessons. Handouts!

**Inquiry in the Garden: Integrating Open-ended Living Projects in Science Teaching and Learning (Gen)***(Middle Level–High School)* Salon M, Marriott Rivercenter**Dawn Wiseman** ([dwiseman@ualberta.ca](mailto:dwiseman@ualberta.ca)) and **Tracy Onuczko** ([tracy.onuczko@ualberta.ca](mailto:tracy.onuczko@ualberta.ca)), University of Alberta, Edmonton, Canada

Come explore the potential for hands-on inquiry across the sciences in this session that uses a school garden as a living resource.

**Engage Your Students with NOAA’s Coral Reef Resources (Bio)**

*(Informal Education) Alamo Salon C, Marriott Riverwalk*  
**Britta Culbertson** (*britta.culbertson@noaa.gov*), Einstein Fellow, NOAA Office of Education, Washington, D.C.  
Grab your students’ attention by incorporating coral reefs into your existing curriculum. Several NOAA resources will be highlighted, including demos, labs, activities, and multimedia.

**Enzymes—Group 1: The Builders (Bio)**

*(High School) Alamo Salon D, Marriott Riverwalk*  
**Suzanne M. Cunningham** (*scunning@purdue.edu*), Purdue University, West Lafayette, Ind.  
High school students become model “Maniacs” or LEGO® “Lunatics” as they synthesize the sugar glucose. Various concepts assist students to visualize polymerization and enzyme specificity.

**11:00 AM–12 Noon Exhibitor Workshops**

**NASA’s Next Generation Science Classroom (Earth)**

*(Grades 10–12) 103B, Convention Center*

Sponsor: NASA Science Mission Directorate E/PO

**Cassie Soeffing**, Institute for Global Environmental Strategies, Arlington, Va.

**Ruth Paglierani** and **Kyle W. Fricke**, University of California, Berkeley, Calif.

**Andi Nelson** and **Lindsay M. Bartolone**, Adler Planetarium, Chicago, Ill.

**Sheri Klug Boonstra**, Arizona State University, Tempe

**Kristin Wegner**, University Corporation for Atmospheric Research, Boulder, Colo.

**Ginger J. Butcher**, Sigma Space, Greenbelt, Md.

**Dorian W. Janney**, NASA Goddard Space Flight Center, Greenbelt, Md.

**Pamela K. Harman**, SETI Institute, Mountain View, Calif.

**Brandon Lawton** and **Dan McCallister**, Space Telescope Science Institute, Baltimore, Md.

**Edgar A. Bering**, University of Houston, Tex.

**Todd Ellis**, SUNY Oneonta, N.Y.

**Greg Schultz**, Astronomical Society of the Pacific, San Francisco, Calif.

**Lauren Brodsky**, The Lawrence Hall of Science, University of California, Berkeley

**Georgia Bracey**, Southern Illinois University, Edwardsville

**Linda Lee Smith**, NASA EPO, Pittsgrove, N.J.

Participate in inquiry-based hands-on science activities that you can use with your students. These resources focus on crosscutting concepts aligned with the highly anticipated Next Generation Science Standards and cover the spectrum of Earth and space science topics. The activities and hundreds more are freely available through NASA Wavelength, a new digital library for educators.

**Project-Based Inquiry Science: PBIS™—Exemplifying Blending Practices, Core Ideas, and Crosscutting Concepts (Gen)**

*(Grades 6–8)*

*205, Convention Center*

Sponsor: It’s About Time

**Mary Starr**, Starr and Associates, Plymouth, Mich.

Blending Practices, Core Ideas, and Crosscutting Concepts may seem overwhelming, but PBIS provides the learning environment to support students and teachers in making it happen. Come experience Project Science as you work with others to complete a middle school science investigation that blends modeling, asking questions, and other science engineering practices while developing core ideas. Take home the activity idea as well as a better understanding of PBIS.



# NSTA E-newsletters

Accessible,  
Informative, **+ FREE**

## **NSTA Express \***

Delivers the latest news, events, classes, seminars, and happenings in the science education world.

## **The STEM Classroom**

Provides a forum for ideas and resources middle and high school teachers need to support science, technology, engineering, and math disciplines.

## **NSTA's Book Beat**

Each issue highlights selected topics in science education, new NSTA Press books, sample chapters and lessons.

## **Leaders Letter**

Includes professional development resources, networking opportunities, and national news for leaders in the science education community.

## **NSTA Scientific Principals**

Offers elementary school principals new ideas, and practical applications for science curricula.

## **Encouraging Young Scientists**

Provides resources and ideas for making science fun and relevant for young children in the classroom.

## **Science Class**

With separate editions for elementary, middle, and high school teachers, this newsletter provides theme-based content along with pertinent resource.



\*Delivered weekly. All others are sent monthly.

**NSTA** National  
Science  
Teachers  
Association

## 11:00 AM–12:30 PM Presentation

### SESSION 1



#### Google Me This: How to Make Collaboration Work in a Wiki World (Gen)

(General) 207A, Convention Center

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

Come take a behind-the-scenes look at how to create a collaborative work environment in your science classroom using web-based tools.

## 11:00 AM–3:00 PM Networking Opportunity

### NSTA Student Chapter Showcase and Lounge

*Executive Assembly, Convention Center*

A three-day showcase featuring interactive sessions presented by NSTA Student Chapter faculty advisors, student leaders, and members highlighting campus and community activities, hands-on demonstrations, discussion groups, and more. In between sessions, the room will serve as a lounge for preservice teachers, new teachers, and faculty advisors to meet, network, and share ideas.

## 12 Noon–1:30 PM Luncheon

### Fueling Instructional Transformation with Digital Textbooks: A Lunch Panel Discussion Hosted by Discovery Education

(By Invitation Only) *Salon D, Marriott Rivercenter*

If you're interested in attending, please contact Laura Wenograd at [laura\\_wenograd@discovery.com](mailto:laura_wenograd@discovery.com) or 240-662-3118 for details.

## 12 Noon–1:30 PM Exhibitor Workshops

### A Tour for Your Inclusion Classes—How to Make It Work! (Env)

(Grades 5–8)

*006A, Convention Center*

Sponsor: LaMotte Co.

**Adah Stock**, Retired Educator, San Antonio, Tex.

You are a general education teacher with an inclusion classroom of diversified learners, including special education, English language learners, limited English proficiency, special minorities such as gifted/talented, and students with physical disabilities. How do you prepare an exciting and safe lab experience that everyone can relate to? LaMotte's Tour materials can be easily modified to make your day easier and engage your students. We'll share easy modifications to help you meet these special needs. Takeaways, resources, and a door prize!

### Planet Diary: Using Current Events to Engage Your Students in Science (Gen)

(Grades 3–12)

*006B, Convention Center*

Sponsor: Pearson

**Jack Hankin**, Planet Diary Author and Creator, Pacifica, Calif.

Join Jack Hankin, author and creator of Pearson's acclaimed Planet Diary website ([www.planetdiary.com](http://www.planetdiary.com)) and see how easy it is to integrate science current events into your upper elementary, middle, or high school curriculum. Planet Diary features weekly reports on important environmental issues and includes in-depth student activities. In addition, Jack will show how the companion Planet Diary Facebook page can bring social media into your science classroom in a meaningful way.



**Human Physiology with PASCO (Bio)***(Grades 9–College) 006C, Convention Center*

Sponsor: PASCO scientific

**Presenter to be announced**

Participate in PASCO's innovative lab activities that use EKG, blood pressure, heart rate, and skin temperature sensors. Bring your lectures to life by using reliable sensors and PASCO's intuitive SPARKvue® software. SPARKvue HD is now available on the iPad and select Android tablets.

**STEM: Meeting the Standards in Your Classroom (Gen)***(Grades 6–12) 006D, Convention Center*

Sponsor: PASCO scientific

**Presenter to be announced**


Experience hands-on, problem-solving STEM modules that engage students in scientific and engineering practices included in *A Framework for K–12 Science Education*. Not only do these modules incorporate specific Disciplinary Core Ideas and Crosscutting Concepts, they also support the Common Core State Standards for Literacy, Reading, and Math.

**LEGO MINDSTORMS® Education EV<sub>3</sub>: Robotics in the Middle School Classroom—Getting Started (Gen)***(Grades 6–8)**007A, Convention Center*

Sponsor: LEGO Education

**Jessica Pope**, LEGO Education, Pittsburg, Kans.

Robotics is a proven and effective way to capture students' attention and keep them engaged in hands-on science, technology, engineering, and math lessons. This session is for educators just getting started with new LEGO MINDSTORMS Education EV<sub>3</sub> or considering how to incorporate MINDSTORMS into the classroom. Learn firsthand how LEGO Education MINDSTORMS EV<sub>3</sub> can get your students excited as they model real-life mechanisms and solve real-world challenges, all while building the critical-thinking and creative problem-solving skills that will serve them well for a lifetime.



**PASCO** Presents the 11th Annual

# An Evening of Just Physics

Friday, April 12th, 2013  
Grand Ballroom C3 – Convention Center

For more information visit us at PASCO booth #132

**Come for the food, fun,  
Physics, and Free T-shirt!**

**Integrating Multimedia and SIOP Strategies in Science to Meet the Needs of ELL Students (Gen)**

(Grades K–12) 007B, Convention Center

Sponsor: Edusmart Science

**Franki Dockens** ([franki@edusmart.com](mailto:franki@edusmart.com)), Edusmart Science, League City, Tex.

Edusmart Science is an interactive, multimedia science resource for grades K–8 and high school biology. Edusmart Science’s design integrates research-based strategies included in the Sheltered Instruction Observation Protocol (SIOP) model—with rich animation/graphics and clear, concise narrated text that research indicates is effective for all students, but especially beneficial for English language learners.

**Exploring the Molecular World: Scientifically Accurate Visualization and Simulation Tools (Chem)**

(Grades 6–College) 007D, Convention Center

Sponsor: Wavefunction, Inc.

**Paul Price** ([sales@wavefun.com](mailto:sales@wavefun.com)), Trinity Valley School, Fort Worth, Tex.

The 3-D visualization of modern software is uniquely suited to help students develop an intuitive grasp of the molecular basis of chemistry. Bring your laptop (Windows or Mac OS X) to this hands-on workshop and learn how to support your teaching with the powerful recent releases of *Odyssey High School Chemistry* and *Odyssey AP Chemistry*.

**EarthViewer—4.6 Billion Years of Earth History at Your Fingertips (Earth)**

(Grades 6–College) 008A, Convention Center

Sponsor: Howard Hughes Medical Institute

**Heather Olins**, Harvard University, Boston, Mass.

**Mark Nielsen**, Howard Hughes Medical Institute, Chevy Chase, Md.

Got an iPad? Download HHMI’s free EarthViewer iOS app and join us in an exploration of Earth’s deep history. Inspired by the focus on crosscutting concepts in the highly anticipated Next Generation Science Standards, this app describes environmental conditions throughout Earth history, and how they were shaped by biology and geology. For example, oxygen is only produced biologically, but the amount of oxygen in the atmosphere is controlled by geological processes. Learn about the many exciting features of this one-of-a-kind app and how to use it in the classroom.

**Launching Literacy with Science Starters (Gen)**

(Grades K–8) 008B, Convention Center

Sponsor: Scientific Minds, LLC

**Kathy Reeves**, Scientific Minds, LLC, Orange, Tex.

Help students build a solid foundation in science while acquiring literacy skills! This workshop includes easy-to-implement best practices training in simultaneously teaching reading, writing, and science—plus strategies for ELL. Take home one month of FREE access to the Science Starters. Elementary grades include Spanish.

**Shaken Up: Teaching About Childhood Sports Injuries and the Brain (Bio)**

(Grades 6–College) 101B, Convention Center

Sponsor: Society for Neuroscience

**Edward Bilsky** ([ebilsky@une.edu](mailto:ebilsky@une.edu)), University of New England, Biddeford, Maine

Bring a hands-on lesson plan about the prevention and detection of brain injuries into your classroom to engage your students in brain science. Head injuries can cause long-term damage and affect war veterans as well as youth and professional athletes. The vulnerability of the developing brain makes injuries from childhood sports especially interesting.

**DNA Replication and Transcription—No More Gumdrops and Toothpicks! (Bio)**

(Grades 5–12) 102B, Convention Center

Sponsor: K’NEX Education

**Presenter to be announced**

Join us as we use K’NEX® to build and explore functional DNA models that actually stay together. Twist DNA ladders to make a helix, replicate it, and transcribe the model to form mRNA. Color-coded nucleotides enable quick changes of the C, G, A, T, and U bases to produce new sequences. Standards-aligned STEM concepts will be emphasized. Aligned to science education standards for grades 5–12, it is also an excellent elementary demonstration tool. Drawing for a K’NEX Education DNA Replication and Transcription Set!

**Favorite Biology Lab Activities and Games from Flinn (Bio)**

(Grades 9–College) 103A, Convention Center

Sponsor: Flinn Scientific, Inc.

**Maureen Hunt** ([mhunt@flinnsci.com](mailto:mhunt@flinnsci.com)) and **Jennifer Sternberg** ([jsternberg@flinnsci.com](mailto:jsternberg@flinnsci.com)), Flinn Scientific, Inc., Batavia, Ill.

Students learn better and faster when they are actively involved in hands-on activities that are not only fun, but that create learning opportunities along the way. We’ll



share some inquiry-based labs, interactive demonstrations, and collaborative games you can use to motivate your 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 for all activities!

**Mastering the Chemical Formula: An Effective Way to Teach Subscripts and Coefficients (Chem)**

(Grades 9–12) 203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

What is the difference between subscripts and coefficients? What does “balancing” a chemical equation mean? Many students have trouble with these fundamental chemistry concepts. If a student does not fully understand the chemical formula, then moles, reactions, and stoichiometry are

hopelessly confusing. Join us for some elegant, intuitive, and well-differentiated lessons from the new high school program, *A Natural Approach to Chemistry*, that enables students of all levels to master the chemical formula and thereby move confidently into a deeper understanding of chemistry.

**Fun, Fabulous Foldables® (Gen)**

(Grades K–8)

204A, Convention Center

Sponsor: McGraw-Hill Education

**Dinah Zike**, Dinah-Might Adventures, LP, San Antonio, Tex.

Experience how these 3-D graphic organizers can transform your science lesson into an engaging, interactive learning experience. These interactive tools offer endless possibilities for collecting data, building understanding, and assessing student comprehension.

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- You can also evaluate sessions on your smartphone via the new NSTA Conference app.



**Ecology Adventures: Motivating Students Through Project Based Learning (Bio)**

(Grades 4–8) 204B, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Mike Heithaus**, Florida International University, North Miami

Do you want to get your students out in the field doing science but can't take a field trip? Join Houghton Mifflin Harcourt author Mike Heithaus to learn how you can use exciting new video-based lessons to take your class on scientific adventures! Using high-paced video and exciting research, students are challenged to develop their own hypotheses, join research teams as they collect data, and then conduct their own data collection and analysis. Leave with one of the projects to do with your students.

**Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (Bio)**

(Grades 6–12) 206A, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Explore animal diversity by comparing and contrasting anatomical adaptations of the pig, rat, shark, and frog. Use hands-on dissection to identify characteristics of these popular vertebrates. This is an excellent comparative dissection activity featuring our very best Carolina's Perfect Solution specimens. Free dissection supplies and great door prizes!

**The Integration of Common Core Reading Informational Text and Writing in Science to Raise Achievement Scores K–8 (Gen)**

(Grades K–8) 206B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Explore the possibilities for integration of practices-based inquiry science with reading and writing, and leave with classroom strategies to meet the demands of the Common Core State Standards. Learn how practices-based inquiry science instruction increases student achievement on assessments in reading, writing, and mathematics.

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

(Grades K–12) 207B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Add excitement to your science class with live organisms! Animals broaden students' inquiry-based explorations and

increase their interest in science. Discover fun, simple hands-on activities that you can use in your classes. Organism care and handling information will be presented. Receive free product samples and literature.

**STEM Is Virtually Everywhere at Discovery (Gen)**

(Grades K–12) 209, Convention Center

Sponsor: Discovery Education

**Lance Rougeux**, Discovery Education, Silver Spring, Md.

Learn about the many ways you can make effective STEM instruction a reality in your school through Discovery Education. From STEM-focused virtual field trips to STEM Connect to our global professional learning community, we'll help you uncover and discover STEM resources and content you can use in your classroom.

**Chemistry with Vernier (Chem)**

(Grades 9–College) 210A, Convention Center

Sponsor: Vernier Software & Technology

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

**Rick Rutland**, Five Star Education Solutions, LLC, San Antonio, Tex.

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 2 and LabQuest Mini. See our Mini GC Plus gas chromatograph and SpectroVis Plus spectrophotometer in action!

**Connected Science System®: Leveraging Vernier Technology with Mobile Devices in the Classroom (Gen)**

(Grades 3–College) 210B, Convention Center

Sponsor: Vernier Software & Technology

**Matt Anthes-Washburn** ([info@vernier.com](mailto:info@vernier.com)) and **Robyn Johnson** ([info@vernier.com](mailto:info@vernier.com)), Vernier Software & Technology, Beaverton, Ore.

With the increased prevalence of mobile devices in the classroom, students have more opportunities for technology-enhanced science investigation. Vernier Data Share enables students in Bring-Your-Own-Device (BYOD) environments to collect data from one or more sensors and then individually analyze and annotate the data on smartphones, tablets, computers, and more.



# The OHAUS Advantage

## Facilitating the Education of Young Scientists

For more than a century, the OHAUS name has been synonymous with high-quality, durable and reliable mechanical and electronic scales and balances



### Heritage and History

A trusted supplier with American roots, OHAUS has been a leader in the weighing industry since the introduction of the Harvard Trip Balance. Our long-standing commitment to the education community has resulted in products and services that enhance science teaching.



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As an ISO 9001:2008 manufacturer, OHAUS manufactures products that are designed to meet national and international safety requirements which ensure compliance with legal or operational requirements and help improve student and teacher safety.



### Ingenious Portfolio

OHAUS manufactures high quality, easy-to-use weighing equipment that offers a broad range of solutions with features that are relevant and meaningful in the science classroom.



### Service and Support

OHAUS offers complete, thorough and friendly customer service, technical support, and online resources for teachers. We support our products with some of the longest warranties in the market.



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[www.ohaus.com](http://www.ohaus.com)  
Facebook [/ohauscorp](https://www.facebook.com/ohauscorp)

**Wind Power and Alternative Energy: Exploring Energy Core Concepts (Phys)**

(Grades 6–12) 211, Convention Center

Sponsor: Ward's Science

**Jill Lewis**, VWR Education, Rochester, N.Y.

Design, build, and evaluate your own windmill as you learn how to lead a lesson on developing and using models that satisfies science and engineering practices. Using affordable materials and a guided inquiry lesson, you'll design, construct, test, and discuss applications for wind energy.

**Got MoticNet?...Then Connect! (Gen)**

(Grades 8–College) 212B, Convention Center

Sponsor: Swift Optical Instruments, Inc.

**David Doty** ([david@swiftoptical.com](mailto:david@swiftoptical.com)) and **Cynthia Syverson-Mercer** ([cynthia@swiftoptical.com](mailto:cynthia@swiftoptical.com)), Swift Optical Instruments, Inc., Schertz, Tex.

Looking for a way to engage, motivate, and have real-time interaction with your students? MoticNet is created to do just that! This software application system and classroom management tool is designed to be used in a teaching environment where microscopes are used for laboratory or experiment use. Teachers are able to observe and manipulate images from their students' microscopes as well as surveil and operate the students' computers in real-time. Focus on teaching and you make connections with your students!

**Fantastical Chemistry Demos for All Classrooms (Chem)**

(General) 214A, Convention Center

Sponsor: Educational Innovations, Inc.

**Bill Richey**, Xenia High School, Xenia, Ohio

These super fun and exciting chemistry demonstrations can be used by all teachers at any level to get a classroom of students excited about the amazing world of chemistry. These easy and practical demonstrations will truly show your students what we already know—that science is fun! Freebies!

**A STEM Approach to Teaching Electricity and Magnetism (Phys)**

(Grades 6–12) 214D, Convention Center

Sponsor: CPO Science/School Specialty Science

**Scott W. Eddleman** and **Nathan Olsson**, CPO Science/School Specialty Science, Nashua, N.H.

Explore how electricity and magnetism are related through hands-on experiences. Apply your knowledge to engineering a wind turbine...and build, test, and revise your model so that it generates as much power as possible. Take away STEM activities and an understanding of how to apply the Engineering Cycle in science classes.

**12 Noon–2:00 PM NSELA/ASTE Luncheon**

**The NRC Framework and the Highly Anticipated Next Generation Science Standards (M-3)**

(Tickets Required: \$60)

Presidio A/B, Grand Hyatt



**Heidi Schweingruber** ([hschweingruber@nas.edu](mailto:hschweingruber@nas.edu)), Deputy Director, Board on Science Education, National Research Council, Washington, D.C.

The NRC Framework and the Next Generation Science Standards (NGSS) have significant implications for assessment, particularly

given the three-dimensional standards that are proposed. This session will provide an overview of a new NRC consensus study by the Board on Testing and Assessment and the Board on Science Education that will be focusing on a broad framework for how best to assess the performance expectations that form the basis of NGSS. The study is designed to run parallel with the development of NGSS and will provide conceptual guidance for test developers and for private and public investments into testing science in accordance with the NRC Framework and the NGSS. This session will provide a platform for discussing issues related to testing from your perspectives.

*Heidi Schweingruber is deputy director of the Board on Science Education (BOSE) at the National Research Council (NRC). In this role, she oversees many of the projects in the BOSE portfolio. She also collaborates with the director and board to develop new projects. She codirected the study that resulted in A Framework for K–12 Science Education (2011), which is the first step in revising national standards for K–12 science education.*

*Heidi served as study director for a review of NASA's pre-college education programs completed in 2008 and codirected the study that produced the 2007 report Taking Science to School: Learning and Teaching Science in Grades K–8. She served as an editor on the NRC report Mathematics Learning in Early Childhood: Paths to Excellence and Equity (2009). Heidi has coauthored two award-winning books for practitioners that translate findings of NRC reports for a broader audience: Ready, Set, Science! Putting Research to Work in K–8 Science Classrooms (2008) and Surrounded by Science (2010).*

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

### Using Brain-based Teaching Strategies to Improve Student Learning (M-4)

(Tickets Required: \$60)

Alamo Salon A, Marriott Riverwalk



**Warren Phillips** (*alscience@yahoo.com*), Workshop Presenter and Science/Technology Teacher, Halifax, Mass.

Using the latest brain information from fMRIs (functional MRI) and other research, teachers must adjust their teaching strategies to how the student learns. This presentation

will focus on the 20 teaching strategies in my book *Science Worksheets Don't Grow Dendrites*. I'll share sample lessons involving music (using Sing-A-Long Science®), movement, humor, manipulatives, storytelling, and visualization to create unforgettable experiences that will be stored in students' amygdala and hippocampus.

*A National Board Certified Teacher, Warren Phillips was inducted into the National Teachers Hall of Fame in in 2010. A Massachusetts science teacher for 38 years, he earned a BA in Earth Sciences and Geography, an MA in Teaching Physical Sciences, and an MEd in Instructional Technology.*

*Among his many accomplishments, Warren was selected as a finalist for the Massachusetts Presidential award in 2001, 2002, and 2003; grand prize winner in Time For Kids/Chevrolet Teaching Excellence Award in 2002; and Disney Middle School Teacher of The Year in 2004.*

*Warren recorded and produced three CDs of science songs entitled Sing-A-Long Science. From these songs, he developed a musical entitled The Science Secret.*

*Warren is coauthor with Marcia Tate of a brain-based book about teaching strategies entitled Science Worksheets Don't Grow Dendrites. He is also a contributor to NSTA's Exemplary Science in Grades 5–8.*

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

### SEPA Luncheon

(By Invitation Only)

Lone Star Ballroom D, Grand Hyatt

## 12:15–1:45 PM Science Seminar

### Nature's Medicinal Remedies in the Treatment of Diabetes and Cancer (Bio)

(General)

Grand Ballroom C2, Convention Center



**Eloy Rodriguez** (*er30@cornell.edu*), James A. Perkins Professor, Dept. of Plant Biology and Environmental Toxicology, Cornell University, Ithaca, N.Y.

President: Michael Sweet, President, Rio Grande Valley Science Association, Donna, Tex.

As many Americans strive to live a century, it is clear that diet and natural medicines (phytochemicals) are essential for controlling diabetes and preventing cancer growth. Join Dr. Rodriguez as he presents recent findings from his Cornell laboratory of novel natural drugs from the tropics and deserts of the Americas that inhibit liquid tumors (leukemia) and solid tumors (breast cancer). He will also touch on ways to present research on cancer and natural drug therapies to K–12 students interested in science, health, and medical careers.

*An internationally known research scientist and endowed professor at Cornell University, Dr. Eloy Rodriguez has devoted his professional life to the chemical biology, ecology, and medicinal chemistry/toxicology of natural small molecules and glycoproteins from plants and arthropods that are important in human and animal health and medicine.*

*His research involves the discovery of novel natural medicines from the Amazon, Caribbean, and the deserts of Mexico and the U.S. The medicines are used in the treatments of various cancer cell lines and infectious diseases. In collaboration with Dr. Richard Wrangham at Harvard, he established the discipline of zoopharmacognosy (animal self-medication with plants) and chemo-ornithology (chemical ecology of bird-insect-plant interactions) with David Rosane from the City University of New York (CUNY).*

*Dr. Rodriguez has also developed various educational science programs for K–16 students, especially minority students, at Cornell and University of California, Irvine. A Mexican-American, Dr. Rodriguez serves as a faculty advisor for the Science Organization of Latinos at Cornell University.*

*He holds a PhD in phytochemistry and plant biology from the University of Texas, Austin. He later received medical postdoctoral training in medicinal botany at the University of British Columbia. Before joining the faculty at Cornell, Dr. Rodriguez was an assistant professor of Ecology and Evolutionary Biology at the University of California, Irvine.*

### 12:30–1:00 PM Exhibitor Workshop

#### Welcome to the Neighborhood: An Overview of the Solar System (Earth)

(Grades 5–8) Booth #1500, Exhibit Hall, Convention Center

Sponsor: Science First®/STARLAB®

**Nathaniel Bell** ([info@sciencefirst.com](mailto:info@sciencefirst.com)), Science First/STARLAB, Yulee, Fla.

In this “in dome” workshop, we’ll demonstrate how you can introduce your students to our neighborhood—the solar system.

### 12:30–1:30 PM SCST Marjorie Gardner Lecture

#### Beyond Assessing Knowledge: Card Sorting, Superheroes, and Moving Toward Measuring Biological Expertise (Bio)

(Informal Education)

Bowie C, Grand Hyatt



**Kimberly D. Tanner** ([kdtanner@sfsu.edu](mailto:kdtanner@sfsu.edu)), San Francisco State University, San Francisco, Calif.

This interactive lecture will engage the audience in thinking about expert and novice thinking in biology, integrating ideas from science education, and cognitive psychology.



### 12:30–1:30 PM Presentations

#### SESSION 1 (two presentations)

(Preschool–Middle Level)

201, Convention Center



#### STEM Comes to Preschool (Gen)

**Sally C. Moomaw** ([sally.moomaw@uc.edu](mailto:sally.moomaw@uc.edu)), University of Cincinnati, Ohio

Learn about STEM activities that were implemented in an urban special education preschool. Children used multiple modalities to experiment with birdsong patterns, inclines, and pendulums.



#### Team Teaching in the Science Classroom (Gen)

**Beverly S. Owens** ([bsowens@clevelandcountyschools.org](mailto:bsowens@clevelandcountyschools.org)), Schiele Museum of Natural History, Gastonia, N.C.

**Bruce E. Bridges** ([bebridges@clevelandcountyschools.org](mailto:bebridges@clevelandcountyschools.org)), Crest Middle School, Shelby, N.C.

**Brian E. Soash** ([besoash@clevelandcountyschools.org](mailto:besoash@clevelandcountyschools.org)) and How can science teachers differentiate instruction to meet the needs of all learners? Explore methods of team teaching that can be used in science instruction.

#### SESSION 2



#### Using the Nation’s Report Card (NAEP) to Improve Science Education (Gen)

(General)

202B, Convention Center

**Hector Ibarra** ([hibarraia@gmail.com](mailto:hibarraia@gmail.com)), National Assessment Governing Board Member, Iowa City, Iowa

President: Cornelia S. Orr ([cornelia.orr@ed.gov](mailto:cornelia.orr@ed.gov)), National Assessment Governing Board, U.S. Dept. of Education, Washington, D.C.

The Nation’s Report Card provides information that helps teachers assess student progress and develop ways to improve science education. Links to previously used test questions are provided. A snapshot of test results of Texas and the states surrounding Texas will be presented. Take away a comprehensive NAEP folder along with information on how to incorporate state performance results in your classroom and school district.

## SESSION 3

**CESI Session: Meaningful and Creative Inquiry (Gen)***(General)*

212A, Convention Center

**Hans Persson** (*hanper@hanper.se*), Nacka, Sweden

Creativity and variety are powerful tools to raise both pupils' and teachers' interest in science and to keep the interest alive.

## SESSION 4

**ASTC Session: Climate Change Action Planning, Green Teams, and Project Based Learning (PBL): Best Practices from Schools (Gen)***(Informal Education)*

213A, Convention Center

**Jen Kretser** (*jkretser@wildcenter.org*), The Wild Center, Tupper Lake, N.Y.**Tammy Morgan**, Lake Placid (N.Y.) Central School District

Want to reduce your school's carbon footprint and engage students in climate science? Discover how to use your school campus as a teaching tool to create opportunities for real-world learning. DVD and materials provided.

## SESSION 5 (two presentations)

*(Preschool–Elementary)*

216A, Convention Center

**Magic with Science (Phys)****Pamela Pape** (*ppape@jackson.k12.ms.us*), Key Elementary School, Jackson, Miss.After studying simple machines and forces, students present a magic show based on Chris Oxlade's books *Science Magic with Machines* and *Science Magic with Forces*.**Inquiry and Exploration with Inclined Planes and Forces of Motion (Phys)****Sandi Castro**, Del Valle (Tex.) ISD**Lisa Adams** (*ms\_blossom@yahoo.com*), Round Rock (Tex.) ISD

Explore ideas for enhancing student understanding of inclined planes, force and motion, and material properties.

# HEAR YE, HEAR YE, SUBMIT A SESSION PROPOSAL

## 2014 National Conference on Science Education

**Leading a Science Revolution** Boston, Massachusetts • April 3–6, 2014

### Share Your Know-How

Want to present at **NSTA Boston 2014**?  
You are not too late!

There is still time to submit a session proposal before the **Monday, April 15**, deadline.

[www.nsta.org/conferences](http://www.nsta.org/conferences)

**NSTA** National  
Science  
Teachers  
Association

**SESSION 6** (two presentations)

(Elementary–Middle Level) 216B, Convention Center

**How Can We Engage Students in the Scientific and Engineering Practices? Teachers Making the Transition to Framework Practices Through Graduated Investigations** (Gen)

**Donald DeRosa**, Boston University, Boston, Mass.

Through progressively more independent activities in immersive professional development, we're developing the new framework practices for engineering and science for teachers of grades K–8.

**It All Starts with a Question!** (Gen)

**Kristin T. Rearden** (*krearden@utk.edu*) and **Amy D. Broemmel** (*broemmel@utk.edu*), University of Tennessee, Knoxville

Scientific contributions from elementary-aged youth have been instrumental throughout history, from naming clouds to finding fossils. Engage young scientists through activities based on these biographies.

**SESSION 7**

**Does Evidence-based Inquiry Improve Logical Reasoning?** (Gen)

(General) Crockett B, Grand Hyatt

**Kim M. Hawtin** (*kim.hawtin@mnp.org*), Wright Middle School, Nashville, Tenn.

**Heather J. Johnson** (*heather.j.johnson@vanderbilt.edu*), Vanderbilt University, Nashville, Tenn.

Join us for a discussion of an action research study that tested to see if instruction in and experience with evidence-based scientific inquiry improves grade 8 students' general logical reasoning.

**SESSION 8**

**Get That Textbook Out of My Classroom!** (Gen)

(General) Crockett C, Grand Hyatt

**Sarah R. Young**, Einstein Fellow, National Science Foundation, Arlington, Va.

Move away from textbooks and into a library. Come learn how to use recent young adult literature to teach physical science skills and content to your students.

**SESSION 9** (two presentations)

(General) Crockett D, Grand Hyatt

**Using Technology to Connect Field Studies to the Classroom** (Env)

**Timothy R. Gay**, Boston Latin School, Boston, Mass.

Join me and find out how to integrate technology and field studies into the laboratory component of a high school science course.

**Wind Energy—How Much and at What Price?** (Env)

**Sean D. Johnson** (*seanjohnson@uchicago.edu*) and **Dylan Hatt**, The University of Chicago, Ill.

Join us for this hands-on experience using model wind turbines, Google Maps, and National Renewable Energy Laboratory data to evaluate the feasibility and pricing of renewable electricity.

**SESSION 10**

**Using Super Mario Bros. to Teach Calculus-based Kinematics** (Phys)

(High School–College) Lone Star Ballroom A, Grand Hyatt

**Jeffrey C. Nordine** (*jnordine@trinity.edu*), Trinity University, San Antonio, Tex.

Gain an introduction to an inquiry-oriented strategy for using a popular video game to teach AP Physics students about 2-D kinematics and the derivative.





**SESSION 11****Forensic Science in Your Classroom! (Gen)***(Informal Education) Lone Star Ballroom C, Grand Hyatt***Karalyn S. Ramon**, Loyola High School of Los Angeles, Calif.

Learn how to incorporate the most popular and exciting scientific field into your classroom. Gain hands-on experience solving realistic crime scene scenarios using actual forensic techniques.

**SESSION 12****Computer Games, Simulations, and Virtual Labs for STEM Education (Gen)***(Informal Education) Lone Star Ballroom E, Grand Hyatt***Randy M. Russell**, University Corporation for Atmospheric Research, Boulder, Colo.**Teresa A. Eastburn**, National Center for Atmospheric Research, Boulder, Colo.

Join us for a broad review of computer games, simulations, and virtual labs for STEM education from many different sources.

**SESSION 13****Toshiba/NSTA ExploraVision (Gen)***(General) Mission A, Grand Hyatt***Eric V. Crossley** (*ecrossley@nsta.org*), Director, Science Education Competitions, NSTA, Arlington, Va.

ExploraVision is a K–12 competition that motivates students and challenges them to think creatively about scientific innovation 20 years into the future. Discover how students can win up to \$240,000 in savings bonds for envisioning new technologies. Learn how ExploraVision supports classroom goals; illustrates connections between science and technology; and offers recognition, computers, and other prizes for schools, students, teachers, and mentors. Session participants have a chance to win a Toshiba product!

**SESSION 14** (two presentations)

*(General) Mission B, Grand Hyatt*  
 President: Marta Fortis (*fortismarta@gmail.com*), University of Puerto Rico, San Juan

**Developing Creativity Skills in the Science Classroom (Gen)****Mary Tsotsis** (*giakts@yahoo.com*), International School of Boston, Cambridge, Mass.

Walk away with examples of learning activities and assessment for developing creativity skills in your science classroom.

**Action Research: A Teachers' Professional Development Strategy to Meet the Needs of Diverse Learners (Gen)**

**Sandra Beltran** (*sanbeltranmor@gmail.com*), **Maria Ortiz**, **Myrna Hernandez**, and **Minnette Rodriguez**, University of Puerto Rico, San Juan

Master science teachers are using action research as an effective professional development strategy to focus on the learning of students with special needs.

**SESSION 15****NARST Session: Students Reflecting on Science Learning—Assignments, Assessments, and Rubrics (Gen)***(General) Presidio C, Grand Hyatt***Jim McDonald** (*mcdon1jt@cmich.edu*), Central Michigan University, Mount Pleasant

What are effective ways to get students to reflect on their science learning? Sample assessments, reflections, assignments, and rubrics will be shared. Handouts!

**SESSION 16****STEM Share-a-Thon (Gen)***(Elementary–High School) Texas Ballroom A/B, Grand Hyatt***Lisa Damien-Marvin** (*ldamian@mac.com*), Camden Hills Regional High School, Rockport, Maine**Coit Hendley**, Eleanor Roosevelt High School, Greenbelt, Md.**Ella Bowling** (*ella.bowling@mason.kyschools.us*), Mason County Middle School, Maysville, Ky.**June Teisan** (*jlteisan@gmail.com*), Harper Woods Schools, Harper Woods, Mich.**Evan Mirenberg** (*jmetro39@aol.com*), P.S. 188 Michael E. Berdy School, Brooklyn, N.Y.

President: Amanda Upton (*aupton@nsta.org*), Manager, Nominations and Teacher Awards Program, NSTA, Arlington, Va. Come learn about the latest STEM classroom initiatives by the PASCO STEM Educator Award winners! Teachers will present their winning ideas at the elementary, middle school, and high school levels.

SESSION 17

**Integrating Science and Mathematics Using the “Hook” of CSI (Gen)**

(General) *Texas Ballroom C, Grand Hyatt*

**Kathy Mirakovits** (*kmirakovits@portageps.org*), Portage Northern High School, Portage, Mich.

Science and mathematics come to life when students learn forensic science. Integrate all sciences, mathematics, and community professionals for a successful and exciting science experience.

SESSION 18



**NSTA Press® Session: Uncovering K–12 Students’ (and Teachers’) Ideas About Matter and Energy (Chem)**

(General) *Texas Ballroom D, Grand Hyatt*

**Page Keeley** (*pagekeeley@gmail.com*), 2008–2009 NSTA President, Jefferson, Maine

**Joyce Tugel** (*jtugel@mmsa.org*), Maine Mathematics and Science Alliance, Augusta

Examine and discuss a variety of formative assessment techniques to uncover common misconceptions and learning difficulties related to core ideas and scientific practices regarding matter and energy.

SESSION 19

**Building a Strong Foundation for Energy Literacy Through Integration of Instruction Across Content Areas and Grade Levels with “Energy Day”! (Gen)**

(Elementary–High School) *Texas Ballroom E, Grand Hyatt*

**Deborah Shiflett-Fitton** (*dffitton@capelightcompact.org*), Cape Light Compact, Barnstable, Mass.

**Sally Andreola** (*sallyandreola@msn.com*), Cape Light Compact, Brewster, Mass.

**Nancy Gifford** (*ngifford@monomoy.edu*) **Melinda Forist** (*mforist@monomoy.edu*), and **Sally Rutledge** (*srutledge@monomoy.edu*), Harwich Middle School, Harwich, Mass.

Prsident: Deborah Shiflett-Fitton

Explore the concept of “Energy Day” with this award-winning, innovative, and interactive model that uses interdisciplinary and multi-grade level tools to turn a middle school into an energy learning laboratory for an entire school day.

SESSION 20

**NGSS® NSTA Next Generation Science Standards: Teacher Insights from the Writing Team— Earth and Space Sciences (Middle/High School) (Earth)**

(Middle Level–High School) *Texas Ballroom F, Grand Hyatt*

**Vanessa Westbrook** (*vanedani\_61@yahoo.com*), Chairperson, NSTA San Antonio National Conference, and Westbrook Consulting, Austin, Tex.

**Kenneth L. Huff** (*kenneth.huff@roadrunner.com*), Mill Middle School, Williamsville, N.Y.

**Mary C. Colson** (*mcolson@moorheadschoos.org*), Horizon Middle School, Moorhead, Minn.

Join Earth and space science teachers who are writers of the highly anticipated Next Generation Science Standards for an exploration of the development of NGSS— from teachers for teachers. Writers will share the thinking and ideas that went into writing this landmark document and the challenges they experienced along the way. This session will address and explore Earth and space sciences from the secondary perspective (grades 6–12) and what NGSS will mean for classroom science teachers.

SESSION 21

**What Every Science Educator Needs to Know About Students with Special Needs (Gen)**

(General) *Travis A, Grand Hyatt*

**Jennifer L. Purcell-Coleman**, University of Arkansas, Fayetteville

Join me for rationales and strategies delivered through presentation and discussion for the integration of students of special education in the science classroom with implications for teacher education.

SESSION 22

**Socratic Science Circles (Gen)**

(General) *Travis C, Grand Hyatt*

**Lara Arch** (*larch1@rice.edu*), Rice University, Houston, Tex. Participate in a Socratic Science Circle and discuss how to implement them in your classroom for various lengths of time, multiple purposes, and a variety of learners.

SESSION 23

**Becoming an Effective Teacher (Gen)**

(Informal Education) *Travis D, Grand Hyatt*

**Remy Dou** (*douremy@gmail.com*), Einstein Fellow, National Science Foundation, Arlington, Va.

Great lessons are not enough to recruit future STEM scientists. It will take a combination of competent academic programs and changes in the scientific culture—and children’s context also must be taken into account.

## SESSION 24

**SYM-1 Follow-Up Session: A Changing Climate Here and Now (Earth)**

(General) Conference Room 3/4, Marriott Rivercenter  
**Frank Niepold** ([frank.niepold@noaa.gov](mailto:frank.niepold@noaa.gov)), NOAA, Silver Spring, Md.

A climate scientist from NOAA will help explain current weather events in the context of a changing global environment.

## SESSION 25

**AMSE Session: Engineering—It Is Elementary (Gen)**

(Elementary–Middle Level) Conf. Room 6, Marriott Rivercenter  
**Bobby J. Jeanpierre** ([bjeanpie@bellsouth.net](mailto:bjeanpie@bellsouth.net)), University of Central Florida, Orlando

This session reports on K–8 teachers' experiences making sense out of the new engineering practices using the Museum of Science's *Engineering is Elementary*® design process. Take home examples of engineering design lessons developed by teachers for their classrooms.

## SESSION 26

**“Nuclear”ification: A Smorgasbord of Classroom Applications and Resources (Gen)**

(High School) Conference Room 15, Marriott Rivercenter  
**Jenelle D. Hopkins** ([jhopkins@interact.ccsd.net](mailto:jhopkins@interact.ccsd.net)), Centennial High School, Las Vegas, Nev.

**Mark Klawiter** ([mjklawit@mtu.edu](mailto:mjklawit@mtu.edu)), Michigan Technological University, Houghton

Join us for nuclear science content (physical sciences, Earth science, biological sciences) with cross-curricular ties to social studies and history, political science, literature, and the arts.

## SESSION 27

**The Magnet Lab: Magnets Is What We Do! (Phys) (Elementary)**

Salon B, Marriott Rivercenter  
**Carlos R. Villa** ([villa@magnet.fsu.edu](mailto: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.

# President's Reception

*Saturday, April 13, 7:00–8:15 PM*

*Salon E, Marriott Rivercenter*

*Cost: \$65*

*(By ticket only: M-10; Evening/cocktail attire suggested)*

The cost of the ticket includes:

- Heavy hors d'oeuvres, a pasta station, cheese display, and assorted desserts;
- Reserved seating at the President's Evening Featured Presentation by David Hanson (*in Salon I*) 8:30–9:30 PM

*Please join us for the President's Mixer—  
 9:45 PM–12 Midnight in Salon E (DJ and cash bar).*

**NSTA**  
 National Science Teachers Association

**SESSION 28**

**Video Analysis and Science Inquiry (Phys)**

(High School) Salon J, Marriott Rivercenter

**Thomas H. Letkewicz** (*letkewicz@bdusd.org*) and **Dylan Ziegler** (*zieglerd@bdusd.org*), Beaver Dam High School, Beaver Dam, Wis.

Learn how to use video analysis to gather and analyze data on motions that are difficult to examine under traditional methods. Various resources will be shared.

**SESSION 29**

**Get Moving! The Chemistry Edition (Chem)**

(Middle Level–High School) Alamo Salon B, Marriott Riverwalk

**Brian J. Ciuffreda** (*bciuffreda@princetoncharter.org*) and **Mark F. Schlawin** (*mschlawin@princetoncharter.org*), Princeton Charter School, Princeton, N.J.

Propel new learning in your science classroom. Discover some chemistry-related, standards-based physical activities and “kinesthetic clue” mnemonic devices used at one of New Jersey’s top-performing middle schools.

**SESSION 30**

**Forensic Analysis of Pollen (Bio)**

(General) Alamo Salon E, Marriott Riverwalk

**Anthony J. Bertino** (*abertino@nycap.rr.com*) and **Patricia Nolan Bertino** (*nolanp@nycap.rr.com*), Retired Educators, Scotia, N.Y.

Increase student interest/knowledge in math, literacy, and technology and discover how pollen is used to solve crimes. Take home PowerPoint, lab activities, 5E (Engage, Explore, Explain, Elaborate, and Evaluate) materials, and case studies.

**SESSION 31**

**Integrating Bioethical Case Studies into the Science Curriculum (Bio)**

(Middle Level–High School) Alamo Salon F, Marriott Riverwalk

**Terry Maksymowych** (*tmaksymowych@ndapa.org*), Academy of Notre Dame de Namur, Villanova, Pa.

The study of bioethics in the science classroom can encourage scientific literacy as well as the development of critical-thinking and problem-solving skills.

**SESSION 32**

**Tasty Chemistry: The Chemistry of Food (Chem)**

(Middle Level–High School) Travis, Marriott Riverwalk

**Sherri Conn Rukes**, Libertyville High School, Libertyville, Ill.

Polymers are found all around us. This presentation will give you a better understanding of why some polymers are used in cooking, what polymers are in food, as well as what polymers are in the tools we use to cook with. Take home a CD of the activities and information.

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**12:30–1:30 PM Workshops**

**Silent Earthquakes Beneath Your Feet? How a Magnitude 7 Earthquake Can Occur Without Being Felt by Anyone! (Earth)**

(Middle Level–High School) 001A, Convention Center

**Shelley Olds** (*olds@unavco.org*), UNAVCO, Boulder, Colo.  
**Nancy West** (*nancywest@gmail.com*), Quarter Dome Consulting, LLC, Fort Collins, Colo.

**Patrick J. McQuillan** (*mcquillan@iris.edu*), IRIS, Washington, D.C.

Explore the world beneath the Pacific Northwest and discover how new science has detected “slow earthquakes” using high-precision GPS and seismic data.

**Weather or Not: K–4 Connections for Weather Units (Earth)**

(Elementary) 001B, Convention Center

**Lynne H. Hehr** (*lhehr@uark.edu*) and **John G. Hehr** (*jghehr@uark.edu*), University of Arkansas, Fayetteville

Weather! Weather! What’s the weather...and how can the science of it be tied to language arts, math, and social studies in my classroom? Explore ways of looking at weather from an interactive, integrated standpoint! Loads of resource materials will be highlighted.

**Understanding the Solar System with Active Modeling (Earth)**

(Elementary–Middle Level) 002, Convention Center

**Nancy L. Balter** (*nancybalter@yahoo.com*), Gardena, Calif.  
Memorizing the planet names isn’t enough. We’ll model the relative planet distances in the solar system (outside!) and the moon’s phases for a conceptual understanding.

**Hands-On/Minds-On Science: Meeting the Needs of Diverse Learners in a Collaborative Setting (Earth)***(General)* 101A, Convention Center

**Maribeth A. Lowe** ([mlope@greencountyschools.com](mailto:mlope@greencountyschools.com)) and **Leah Talbert** ([ltalbert@greencountyschools.com](mailto:ltalbert@greencountyschools.com)), William Monroe High School, Stanardsville, Va.

An exciting, interactive presentation demonstrating how the use of high-tech and low-tech materials can give your students the best learning experience.

**Circuits to Go!****(Phys)***(Elementary)*

202A, Convention Center

**Cherubim Cannon** ([cherubimcannon@aol.com](mailto:cherubimcannon@aol.com)) and **Janice Porter** ([porter42b@aol.com](mailto:porter42b@aol.com)), P.S. 005 Dr. Ronald McNair, Brooklyn, N.Y.

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

Generate excitement in your classroom and make your own switches from office supplies and use them to control lights and buzzers. Students can make these circuits and take them home!

**Getting Started with the T and E in STEM (Gen)***(Elementary/Supervision)*

213B, Convention Center

**Deborah L. Dempsey** ([deb@bhstemed.us](mailto:deb@bhstemed.us)) and **Carolyn DeCristofano** ([carolyn@bhstemed.us](mailto:carolyn@bhstemed.us)), Blue Heron STEM Education, Plympton, Mass.

You know it's important to integrate engineering and technology into elementary science, but where do you begin if you've never done this before? Start here!

**Inquiry Activities for K–4—Strike While the Iron Is Hot!****(Phys)***(Elementary)*

215, Convention Center

**Elise B. Burns** ([eburns@pascack.k12.nj.us](mailto:eburns@pascack.k12.nj.us)), Pascack Hills High School, Montvale, N.J.

Children ages K–4 are more open minded and curious than at any other age. Behold a wealth of activities to engage them with basic physical science ideas that cost nearly nothing and teach them real science!

**POWER ON! Argumentation Strategies for the Elementary Science Classroom (Gen)****(Gen)***(Elementary)*

217D, Convention Center

**Tina Garrett** ([kpgarret@garlandisd.net](mailto:kpgarret@garlandisd.net)), **Becky Orsini** ([rrorsini@garlandisd.net](mailto:rrorsini@garlandisd.net)), and **Mary Huschle**, Garland (Tex.) ISD

Do your students need guidance engaging in scientific discussion and/or debate? Participants will use CER frames to actively engage in cooperative activities to learn argumentation strategies.

**NESTA Session: National Earth Science Teachers Association Earth System Science Share-a-Thon (Earth)***(Elementary–High School)*

Ballroom A, Convention Center

**Michelle Harris** ([michelle.harris@apsva.us](mailto:michelle.harris@apsva.us)), Wakefield High School, Arlington, Va.

**Roberta M. Johnson** ([rmjohnsn@nestanet.org](mailto:rmjohnsn@nestanet.org)), NESTA and University at Albany, Boulder, Colo.

**Margaret A. Holzer** ([mholzer@monmouth.com](mailto:mholzer@monmouth.com)), Chatham High School, Chatham, N.J.

**Filla Baliwag** ([baliwag@agiweb.org](mailto:baliwag@agiweb.org)), American Geosciences Institute, Alexandria, Va.

**Kathryn A. Barclay** ([kathrynbarclay65@aol.com](mailto:kathrynbarclay65@aol.com)), Dulles Middle School, Sugar Land, Tex.

**Tammy Bravo** ([tkb@iris.edu](mailto:tkb@iris.edu)), IRIS, Washington, D.C.

**Sharon Katz Cooper** ([scooper@oceanleadership.org](mailto:scooper@oceanleadership.org)), Deep Earth Academy, Consortium for Ocean Leadership, Washington, D.C.

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

**Mark Francek** ([mark.francek@cmich.edu](mailto:mark.francek@cmich.edu)), Central Michigan University, Mount Pleasant

**Lisa Gardiner** ([lisagard@ucar.edu](mailto:lisagard@ucar.edu)) and **Becca Hatheway** ([hatheway@ucar.edu](mailto:hatheway@ucar.edu)), University Corporation for Atmospheric Research, Boulder, Colo.

**Paige Valderrama Graff** ([paige.v.graff@nasa.gov](mailto:paige.v.graff@nasa.gov)), Jacobs ESCG/NASA Johnson Space Center, Houston, Tex.

**Teresa J. Kennedy** and **Michael Odell**, The University of Texas at Tyler

**Timothy McCollum**, Eastern Illinois University, Charleston

**H. Michael Mogil** ([hmmogil@weatherworks.com](mailto:hmmogil@weatherworks.com)), How The Weatherworks, Naples, Fla.

**Shelley Olds** ([olds@unavco.org](mailto:olds@unavco.org)), UNAVCO, Boulder, Colo.

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

Join more than 20 NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

**DuPont Session: DuPont Presents “Investigating Photovoltaic Cells” (Phys)****(Phys)***(Middle Level–High School)*

Bonham B, Grand Hyatt

**Wes Crawford**, Sutherlin High School, Sutherlin, Ore.

**Amy Tomlinson** ([atomlinson@southcentralunified.org](mailto:atomlinson@southcentralunified.org)), Sandy Creek Public Schools, Fairfield, Neb.

**Scott Stone** ([scott.stone@catnet.genmo.us](mailto:scott.stone@catnet.genmo.us)), Centralia High School, Centralia, Mo.

Come learn how to power a motor using photovoltaic cells and design experiments to investigate various factors that affect the cells' ability to transform light energy into electricity.

**Deep Science Learning with Sims: Incorporating Interactive Simulations Effectively with Hands-On Investigations and Argumentation (Gen)**

(Middle Level) *Bonham C, Grand Hyatt*

**Suzanna J. Loper, Ariel Krakowski, Andrew Falk, and Carissa Romano**, The Lawrence Hall of Science, University of California, Berkeley

Discover how to design learning experiences that integrate online simulations into a rich science learning experience that includes hands-on investigation, reading, writing, and scientific argumentation.

**Middle School Chemistry: Big Ideas About the Very Small (Chem)**

(Middle Level) *Bonham D, Grand Hyatt*

**James H. Kessler** (*jhkessler@acs.org*), American Chemical Society, Washington, D.C.

Conduct hands-on activities about solids, liquids, and gases from the free resource *middleschoolchemistry.com*. The 5E (Engage, Explore, Explain, Elaborate, and Evaluate) lessons and molecular animations are freely available for use in the classroom.

**Practical Technology for Environmental Field Studies (Env)**

(College) *Bonham E, Grand Hyatt*

**Billy Bennett** (*william.bennett@eku.edu*) and **Melinda Wilder** (*melinda.wilder@eku.edu*), Eastern Kentucky University, Richmond

Explore several appropriate technologies that enhance environmental field investigations. Presenters will share instructional methods and student work samples from inservice teacher courses.

**How Dirty Is Your Windshield? Formative Assessment via 3-D Graphic Organizers (Gen)**

(General) *Bowie B, Grand Hyatt*

**Robert Stremme**, Eastern University, St. Davids, Pa.

What is your students' visibility with concepts in the classroom? Learn how to use 3-D interactive organizers as authentic, relevant, and formative assessment tools.

**Got the iPads, Now Let's Get "Appy" (Gen)**

(Elementary–High School) *Lone Star Ballroom F, Grand Hyatt*

**Beth S. Guzzetta** (*tangent\_one@yahoo.com*) and **Anthony J. Tepedino** (*ttepedino@allendalecolumbia.org*), Allendale Columbia School, Rochester, N.Y.

Come learn about numerous available educational science iPad apps plus other ways to integrate technology into your classroom using the iPad.

**Ocean Plastic Pollution: Examining Issues and Solutions in a Middle School Classroom (Env)**

(Middle Level) *Republic B, Grand Hyatt*

**Mary C. Whaley** (*mwhaley@mbayaq.org*), Monterey Bay Aquarium, Monterey, Calif.

Enrich your middle school classroom with hands-on standards-based activities focusing on issues and solutions surrounding plastic pollution. Activities will highlight physical and chemical properties of plastics, including density and buoyancy.

**10 Things Everyone Should Know About the Atmosphere (Phys)**

(Elementary–High School) *Conf. Room 16, Marriott Rivercenter*

**Brian Jones, Cherie Bornhorst, Sheila Ferguson** (*sferguso@lamar.colostate.edu*), and **Sue Ellen Kempton**, Colorado State University, Fort Collins

Join the Little Shop of Physics to explore the science of weather and climate concepts through inquiry-based hands-on activities that can be adapted for any grade level!

**Designing Engineers—From Kids to Careers (Gen)**

(General) *Salon A, Marriott Rivercenter*

**Arthur W. Bowman** (*awbowman@nsu.edu*), Norfolk State University, Norfolk, Va.

Emphasis will be placed on how use of the design process to prepare children for careers in engineering as well as elementary design briefs are key to success.

**PDI Outdoor Science Pathway Session: Teaching Outdoor Science Through Trade Books (Env)**

(Elementary–Middle Level) *Salon F, Marriott Rivercenter*

**Christine A. Royce** (*caroyce@aol.com*), Shippensburg University, Shippensburg, Pa.

Find out how outdoor lessons and environmental concepts can be enhanced with appropriate children's literature from the coauthor of *Teaching Science Through Trade Books*.

**PDI McREL Pathway Session: Engaging Students in Inquiry for Developing Scientific Thinking****(Gen)***(General)**Salon K, Marriott Rivercenter***Cyndi Long** (*clong@mcrel.org*), McREL, Denver, Colo.

Scientific thinking encompasses not only the nature of science and a scientific way of knowing, but also how students must be able to think this way in their science classroom every day and know its relevance to their daily lives. This means not just completing a two-week unit about the nature of science, but being able to apply that knowledge. Learn how to design your instruction to promote student inquiry and scientific thinking that leads to understanding. Handouts and sample lessons.

**CRASH Science! Investigating the Dangers of Distracted Driving****(Gen)***(Middle Level–High School)**Salon M, Marriott Rivercenter***Griff Jones** (*gjones@coe.ufl.edu*) and **Linda C. Jones** (*lcjones@coe.ufl.edu*), University of Florida, Gainesville

Learn how to use easy-to-implement biology- and physics-related hands-on inquiry activities and dramatic crash videos to teach students about the dangers of distracted driving.

**Fun Science to Stimulate Inquiry****(Bio)***(Middle Level–College)**Alamo Salon C, Marriott Riverwalk***John W. Fedors** (*jfedors@wavecable.com*), Science Activities, Lincoln, Calif.

Join me for hands-on activities in diffusion, passive transport, simulated cell organelles, MRI, hydrophilic/hydrophobic properties, intimate microbes, energy transfer, and forensics.

**Bird Islands: Exploring Biodiversity Using Interactive Geospatial PDFs to Address the New Frameworks****(Bio)***(Middle Level–High School)**Alamo Salon D, Marriott Riverwalk***Carol Burch** (*cburch129@gmail.com*), Hannibal High School, Hannibal, N.Y.**Nancy Trautmann** (*nmt2@cornell.edu*), Cornell Lab of Ornithology, Ithaca, N.Y.**James G. MaKinster** (*makinster@hws.edu*), Hobart and William Smith Colleges, Geneva, N.Y.

Bring your laptop/iPad for hands-on spatial inquiry of bird populations. Interactive PDF maps inspire students to learn the meaning of biodiversity, species richness, endemism, and abundance.

**12:30–1:30 PM Exhibitor Workshop****Engineering the Future: A Practical Approach to STEM for High School****(Gen)***(Grades 8–12)**205, Convention Center*

Sponsor: It's About Time

**Lee Pulis**, Museum of Science, Boston, Mass.

STEM—it's a real need. *Engineering the Future* is a real answer. See how the Museum of Science, Boston has packaged a solution that makes implementing STEM easy. Learn how *Engineering the Future's* four real-world projects give students an opportunity to see how engineering is part of their everyday world.

**12:30–2:00 PM Exhibitor Workshop****WindWise Science Curriculum****(Gen)***(Grades 4–12)**007C, Convention Center*

Sponsor: KidWind Project

**Joseph T. Rand** (*joe@kidwind.org*) and **Michael Arquin**, KidWind Project, St. Paul, Minn.

Interested in bringing wind energy science to your physics, technology, biology, environmental science, and Earth science classrooms? This workshop features a hands-on exploration of the WindWise Curriculum developed at KidWind. Participants will receive curricular and other materials to help them start this project in their classrooms. Visit [www.kidwind.org](http://www.kidwind.org) for more information.

**12:30–3:30 PM Short Course****Squishy Circuits, Toy Engineering, and More! (SC-11)***(Elementary–Middle Level)**Salon del Rey C, Hilton***Tickets Required: \$23****Didey Muniz** (*dideymuniz@mail.utexas.edu*), Women in Engineering Program, The University of Texas at Austin**Katelyn Wamsted** (*katelyn@girlstart.org*), Girlstart, Austin, Tex.**Melissa R. Cigarroa** (*melissa@wowsciencelaredo.org*), Informal Science Learning Associates (ISLA) of Laredo, Tex.**Karen A. Peterson** (*kpeterson@edlabgroup.org*), National Girls Collaborative Project, Lynnwood, Wash.

For description, see page 61.

**12:30–4:30 PM Workshop**

**PDI BSCS-I Pathway Session: Analyzing and Interpreting Data in Your Classroom (Gen)**

(Elementary–High School) Conf. Room 1/2, Marriott Rivercenter

**Jody Bintz** ([jbintz@bscs.org](mailto:jbintz@bscs.org)) and **Connie J. Hvidsten** ([chvidsten@bscs.org](mailto:chvidsten@bscs.org)), BSCS, Colorado Springs, Colo.

Come learn how to help students interpret and reason about data and observations (NGSS practice 4). During this session, we will share a common experience, analyze video of teaching and learning, and consider ways to support students to think scientifically in your classroom!

**1:00–1:30 PM Presentations**

**SESSION 1**

**My Big Backyard (Bio)**

(Elementary) 208, Convention Center

**Marcia N. Segers** ([marcia.segers@trussvillecityschools.com](mailto:marcia.segers@trussvillecityschools.com)) and **Angela Shorter** ([angela.shorter@trussvillecityschools.com](mailto:angela.shorter@trussvillecityschools.com)), Paine Primary School, Trussville, Ala.

Take young naturalists on a worldwide backyard excursion! Incorporate research, technology, and communication skills through hands-on/minds-on activities to develop environmentally conscious citizens.

**SESSION 2**

**I Draw to Assess; Do You? Creative Formative Assessment Strategies (Gen)**

(Elementary–High School) Crockett A, Grand Hyatt

**Trinity J. Ayres**, Calgary (Alta.) Catholic School District, Canada

Learn creative formative assessment strategies that establish student knowledge about a topic and show students' development as they continue their learning.

**1:00–2:00 PM Meeting**

**Lifelines for Climate Change Education Meeting**

(By Invitation Only) Conference Room 7, Marriott Rivercenter

Visit [www.globalsystemscience.org/lifelines](http://www.globalsystemscience.org/lifelines) for information.

**1:00–2:30 PM Exhibitor Workshops**

**If You Want TEKS in Their Minds, Put FOSS in Their Hands (Texas Edition) (Gen)**

(Grades K–8) 214B, Convention Center

Sponsor: Delta Education/School Specialty Science–FOSS  
**Linda De Lucchi, Kathy Long, Brian Campbell, and Diana Velez**, The Lawrence Hall of Science, University of California, Berkeley

Join FOSS developers to get a sneak preview of the upcoming FOSS edition designed just for Texas educators and students. Each FOSS investigation is designed to provide multiple exposures to Texas Essential Knowledge and Skills (TEKS) using seamlessly integrated strategies that center on active investigation and include notebooks, formative assessment, and digital technology.

**Taking Science Outdoors with FOSS K–6 (Gen)**

(Grades K–6) 214C, Convention Center

Sponsor: Delta Education/School Specialty Science–FOSS  
**Erica Beck Spencer and Joanna Snyder**, The Lawrence Hall of Science, University of California, Berkeley

FOSS now reaches beyond the classroom and into your school yard and local environment. Learn how FOSS, 3rd Edition engages children in meaningful outdoor science learning experiences. Participate in outdoor investigations that can apply, extend, and expand classroom content and concepts to the real world. Take home a copy of *Taking FOSS Outdoors*.

**What Colors Your World? Quick, Easy, and Cheap Biotech Activities for Biology and Chemistry (Gen)**

(Grades 9–College) 217B, Convention Center

Sponsor: Bio-Rad Laboratories

**Kirk Brown**, Tracy High School, Tracy, Calif.

In this hands-on workshop, learn how natural and synthetic pigments can be extracted and separated based upon their molecular properties. The use of biotechnology separation techniques cuts across the chemistry and biology curricula, and these techniques are easy to bring into the classroom.



**1:00–3:00 PM Workshop****PDI WISP Pathway Session: Taking Little Ones from Questions to Claims: K–3 Inquiry Using the SWH (Gen)***(Preschool–Elementary) Salon L, Marriott Rivercenter***Lori Norton-Meier**, University of Louisville, Ky.

**Jay Staker** (*jstaker@iastate.edu*), Iowa State University, Ames  
 Harness the wonder of children to explore their world by linking science to literacy. The Science Writing Heuristic (SWH) approach brings reading, writing, and inquiry together for learning.

**1:00–3:00 PM Exhibitor Workshop****Ecology to Enzymes to Industry (AP Big Idea 4) (Bio)***(Grades 9–College) 217C, Convention Center*

Sponsor: Bio-Rad Laboratories

**Damon Tighe**, Bio-Rad Laboratories, Hercules, Calif.

In this inquiry-based hands-on workshop, learn to use ecological knowledge of the kingdom Fungi to find and characterize novel cellobiase enzymes for application in cellulosic biofuel production. The enzyme cellobiase is easy to extract from mushrooms, and a colorimetric system for assaying activity can be used to determine how pH, temperature, and concentrations affect the rate of reaction.

**1:00–4:30 PM Short Course****Real-Life Science Learning on a Budget (SC-12)***(Elementary)**La Corona, Hilton***Tickets Required: \$36**

**Carolyn Lowe** (*clowe@nmu.edu*), North Michigan University, Marquette

For description, see page 61.

**1:30–3:00 PM Science Seminar****When the World Was Warm—Looking Back to the Future (Earth)***(General)**Grand Ballroom C3, Convention Center*

**Deborah J. Thomas** (*dthomas@ocean.tamu.edu*), Associate Professor, Dept. of Oceanography, Texas A&M University, College Station

President: Jennipher Green, Program Representative, NSTA San Antonio National Conference, and The University of Texas at San Antonio

The sediments that have accumulated in the ocean basins preserve an archive of Earth's climate history. Scientific ocean drilling has made possible the investigation of this climate record, revealing a period of global greenhouse warmth that peaked 50 million years ago. This interval represents an analog for future greenhouse warmth and provides the unique opportunity to investigate how the different components of the climate system may respond to global warming. Join Dr. Thomas in a discussion of how we reconstruct ocean circulation and its role in global climate during an ancient greenhouse climate state.

*A faculty member in the Department of Oceanography at Texas A&M University since 2004, Dr. Deborah Thomas specializes in the investigation of past climate, using the chemical composition of marine sediments recovered by the Integrated Ocean Drilling Program to reconstruct environmental conditions during intervals of extreme global warmth.*

*Dr. Thomas has been involved in scientific ocean drilling for nearly 20 years, beginning with her research as an undergraduate at Brown University. Since then she has sailed on several expeditions aboard the Integrated Ocean Drilling Program's vessel JOIDES Resolution and published extensively on the sediments recovered during these expeditions.*

*Furthermore, scientific ocean drilling has provided Dr. Thomas with the unique opportunity to work with amazing K–12 educators through the Consortium for Ocean Leadership's Deep Earth Academy teacher training programs.*

*She received a PhD in geological sciences from The University of North Carolina at Chapel Hill.*

### 1:30–3:00 PM Exhibitor Workshop

#### Exploring STEM Careers: Water and Our Environment (Env)

(Grades 6–12) 102A, Convention Center

Sponsor: Fisher Science Education

**Robert Marshall**, Carnegie Science Center, Pittsburgh, Pa.

With global population growth creating a rise in demand, access to clean water is becoming increasingly important. Learn how you can bring this real-world issue to life for your middle and high school students. Gain hands-on experience in this technology-focused environmental workshop, led by Robert Marshall, a STEM educator from Carnegie Science Center, one of the nation's leading hands-on science museums. Handouts and door prizes!



### 2:00–3:00 PM Featured Presentation

#### NGSS@NSTA Next Generation Science Standards Town Hall Meeting (Gen)

(General)

Grand Ballroom C2, Convention Center



**Stephen L. Pruitt**, Vice President for Content, Research, and Development, Achieve, Inc., Washington, D.C.

President: Jacqueline R. Smalls, Langley STEM Education Campus, Washington, D.C.

The Next Generation Science Standards (NGSS) are due for release in early 2013. What are the next steps after the NGSS are completed? How will they affect science education, including classroom instruction, professional development, curriculum materials, and state assessments? Join Stephen for a Town Hall Meeting on NGSS. This interactive forum will be an opportunity for teachers to ask questions and discuss the next steps in the implementation of NGSS.

With private funding from the Carnegie Corporation—the National Research Council and Achieve, Inc., with support from NSTA and the American Association for the Advancement of Science, have embarked on a two-step cooperative process. The first step, the NRC *Framework*, was released in July 2011. The next step is the development of the actual standards, a process led by Achieve involving science experts, science teachers, states, and other science education partners.

*Vice president for Content, Research, and Development at Achieve, Stephen Pruitt is leading the development of the Next Generation Science Standards. He began his career as a high school chemistry teacher in Georgia, where he taught for 12 years.*

*In 2003, he joined the Georgia Department of Education as the program manager for Science. He served in that role for four years before becoming director of Academic Standards, in which he oversaw the continued implementation of the Georgia Performance Standards in all content areas. In 2008, he became the associate superintendent of Assessment and Accountability, responsible for directing all state assessments and overseeing the No Child Left Behind accountability process. In April 2009, Stephen became chief of staff to state School Superintendent Kathy Cox, coordinating the work of the agency, and a variety of projects such as Georgia's third-ranked Race to the Top application.*

*Stephen earned his PhD of philosophy in chemistry education from Auburn University.*

## 2:00–3:00 PM American Geophysical Union (AGU) Lecture

### The Climate Science Debate: What Does the Science Tell Us and Why People on Both Sides Are So Angry About It (Env)

(General)

Grand Ballroom C1, Convention Center



**Andrew Dessler** ([adessler@tamu.edu](mailto:adessler@tamu.edu)), Professor of Atmospheric Sciences, Texas A&M University, College Station

Join Dr. Andrew Dessler as he reviews the state of the science of climate change and discusses why climate scientists are so worried about this problem. Also, he will

weigh in on the polarized debate over climate change and why there is such an enormous split over both the scientific reality of the problem and the policy options.

*A climate scientist who studies both the science and politics of climate change, Dr. Andrew Dessler is presently professor of Atmospheric Sciences at Texas A&M University. His research revolves around climate feedbacks, in particular how water vapor and clouds act to amplify warming from the carbon dioxide that humans emit.*

*In 2012, he received the AGU's Ascent Award from the atmospheric sciences section to reward exceptional achievement by a mid-career scientist. During the last year of the Clinton Administration, Dr. Dessler served as a Senior Policy Analyst in the White House Office of Science and Technology Policy.*

*His authorship includes The Science and Politics of Global Climate Change: A Guide to the Debate and Introduction to Modern Climate Change. In recognition of his work on outreach, in 2011 he was named a Google Science Communication Fellow.*

*He holds a PhD in chemistry from Harvard University and completed postdoctoral work at NASA's Goddard Space Flight Center. In addition, Dr. Dessler spent nine years on the research faculty of the University of Maryland.*

Speaker is sponsored by American Geophysical Union.

## 2:00–3:00 PM Meeting

### Gay, Lesbian, Bisexual, and Transgender Science Teachers Association Annual Meeting

Bonham, Marriott Riverwalk

## 2:00–3:00 PM Presentations

### SESSION 1

#### Jurassic Expedition: Paleontology Field School (Earth)

(Informal Education)

003A, Convention Center

**Beverly S. Owens** ([bsowens@clevelandcountyschools.org](mailto:bsowens@clevelandcountyschools.org)), Schiele Museum of Natural History, Gastonia, N.C.

Learn how you and your students can participate in the Jurassic Expedition to dig dinosaurs, collect fossils, and sightsee across the western United States.

### SESSION 2



#### Tech Talk: A Terabyte of Ideas in an Hour (Gen)

(General)

207A, Convention Center

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

So how many ideas are in a terabyte? Answer: More than we can probably cover—but come hear about websites, tools, apps, and more.

### SESSION 3

#### CESI Session: Integrating Quality Children's Literature to Promote Science and Digital Literacies (Gen)

(Elementary)

212A, Convention Center

**Jeff A. Thomas** ([jathomas@usi.edu](mailto:jathomas@usi.edu)), University of Southern Indiana, Evansville

Explore integrating award-winning children's science trade books into the elementary classroom. We'll discuss how to make connections to the Common Core State Standards.

### SESSION 4

#### ASTC Session: Art and Science: Building Community Partnerships for Interdisciplinary Programs (Env)

(General)

213A, Convention Center

**Christy Youker** ([cyouker71@yahoo.com](mailto:cyouker71@yahoo.com)), Upper Colorado River Authority, San Angelo, Tex.

An art museum, an environmental agency, and a school district bring art and science together in a three-tiered program. Learn why and how it is working and share ideas on working collaboratively on interdisciplinary programs.

**SESSION 5**

**Not Your Grandfather's Writing Tablet! (Gen)**

(Preschool–Middle Level) 215, Convention Center

**Glenda L. Ogletree**, Armstrong Atlantic State University, Savannah, Ga.

**Jaime Berry** (*jlb110@shsu.edu*), Sam Houston State University, Huntsville, Tex.

Emphasis will be placed on student-created science concept maps using interactive tablets (like iPads) integrated with nonfiction informational content books.

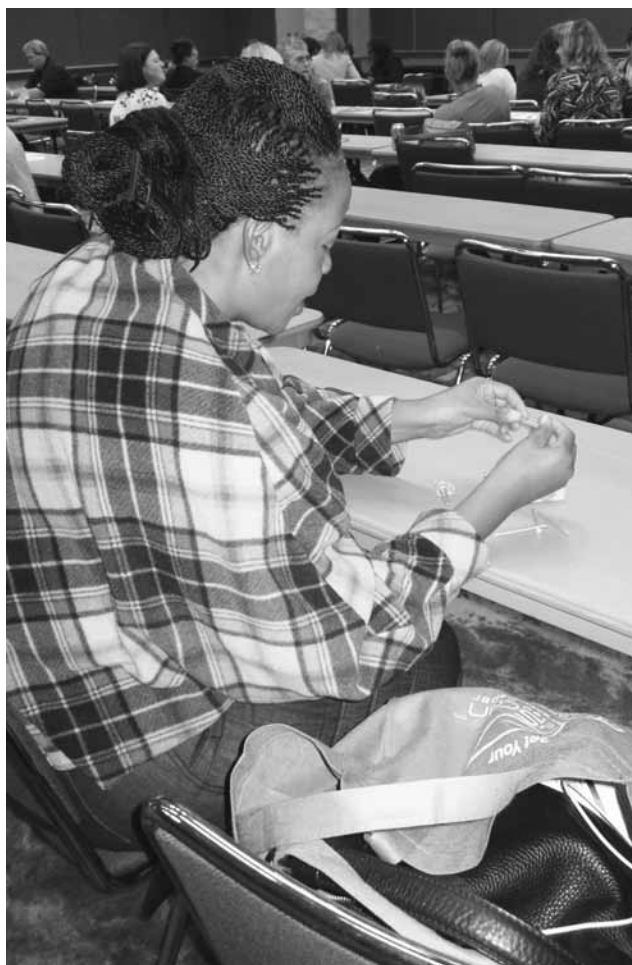
**SESSION 6**

**Critical Skills Supporting Science and Engineering Innovation (Gen)**

(Elementary–Middle Level) 216B, Convention Center

**Nicole Riegel** (*nriegel@growstem.org*) and **Patricia Lucido** (*plucido4405@gmail.com*), SySTEMic Innovations, Excelsior Springs, Mo.

Experience how to incorporate 21st-century skills, Common Core mathematics standards, and language arts standards into science and engineering practices.



**SESSION 7** (three presentations)

(General)

*Bowie C, Grand Hyatt*

President: Julie McIntosh, The University of Findlay, Ohio  
**SCST Session: Promoting Students' Understanding and Awareness of Sustainability Issues and the Nature of Science Through Mandatory Online Discussions**

(Gen)

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

**James Wandersee**, Alumni Professor Emeritus, Louisiana State University, Baton Rouge

Attention will be paid to research involving time optimization for student understanding of climate change issues. We'll discuss our findings from mandatory six-week online discussion units focusing on biodiversity and climate change, in which a majority of students achieved greater awareness of sustainability complexity and the nature of science.

**SCST Session: Beginning a Learning Assistant Program in Science Courses as Experienced by Boston University**

(Phys)

**Kathryn E. Spilios** (*kspilios@bu.edu*), Boston University, Boston, Mass.

**Nicholas Hammond** (*nicholas.hammond@rochester.edu*), University of Rochester, N.Y.

Join us as we report on the Boston University experience of adopting learning assistants for introductory science courses, and the outcomes based on interview and survey data.

**SCST Session: Promoting Environmental Literacy Through the New Core Standards**

(Env)

**Gwynne Rife** (*rife@findlay.edu*) and **Julie McIntosh** (*mcintosh@findlay.edu*), The University of Findlay, Ohio

Join us as we explore environmental literacy standards and see how they align to the new science core standards. These literacy standards (Ocean Literacy, Great Lakes Literacy, and State Environmental Literacy Plans, for example) can be met by introducing preservice teachers to environmental guides and trade books as tools to teach standards through literacy.

## SESSION 8

**Constructing an Electronic Cosmic Ray Detector to Observe, Record, and Analyze Cosmic Rays in Your Classroom (Gen)***(General)**Crockett A, Grand Hyatt***Mark R. Malone** (*mmalone@uccs.edu*), University of Colorado, Colorado Springs

Find out how to use simple department store materials coupled with an inexpensive USB video camera to view and record cosmic rays on a laptop computer. Show students how to observe and analyze video images.

## SESSION 9

**Collaborative Teaching for Collaborative Learning in the Lab (Gen)***(General)**Crockett B, Grand Hyatt***Shawtwain Hall**, Riverdale, Ga.

Think labs are only for the critical thinkers? Learn how to employ collaborative teaching strategies to help learners who struggle to become successful in the science lab. Handouts!

*You're invited...*  
to the NSTA Member  
Orientation

Your Total Membership Experience starts with this conference but continues all year long as you share your thoughts, lend your voice, and become a true partner in science education with your professional membership association! Join us for an introduction to your membership experience. An exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments!

Friday, April 12 • 3:30–5:00 PM  
Grand Hyatt San Antonio • Lone Star Ballroom D  
Compliments of GEICO Insurance.



**SESSION 10** (two presentations)

(Elementary–High School)

*Crockett C, Grand Hyatt*

**Structured Writing in Science Doesn't Have to Be Boring (Gen)**

**Karen Gentsch** (*kgentsch@etbu.edu*), East Texas Baptist University, Marshall

Let's focus on practical strategies for increasing writing in the science classroom. Specific ways to implement a variety of writing strategies to help students better understand content will be demonstrated.

**Read It, Write It, Talk It: Practical Strategies for Addressing Literacy Development in Science Instruction (Gen)**

**Michelle Friend** (*mefh@stanford.edu*), **Brian M. Donovan** (*briand79@stanford.edu*), **Jonathan Osborne**, **Diego X. Roman**, **Mike Metz**, and **Alexis Patterson**, Stanford University, Stanford, Calif.

We will present literacy development strategies that we have been using with science teachers at a large urban district.

**SESSION 11**

**Be a “Flipper” for Ocean Literacy (Env)**

(General)

*Crockett D, Grand Hyatt*

**Amy Larrison Gillan** (*agillan@saintmarys.edu*), Saint Mary's College at Notre Dame, Ind.

**Daniel Smith** (*dsmith28@nd.edu*), University of Notre Dame, Ind.

Optimize for students the relevance of the world of water by “flipping” the classroom, drawing upon existing online ocean and Great Lakes literacy resources.

**SESSION 12**

**Find the Fund\$ for STEM: Grant Writing 101 (Gen)**

(Elementary–High School)

*Lone Star Blrm. E, Grand Hyatt*

**June Teisan** (*jlteisan@gmail.com*), Harper Woods (Mich.) Schools

Don't let \$\$ worries limit your dreams for building innovative STEM programs that infuse cutting-edge technologies! Come see numerous examples of grant-funded science initiatives and learn tips and tricks to win grant dollars. Create AMAZING tech-rich learning opportunities for your students!

**SESSION 13**

**ASTE Session: Engineering a Solar Panel Sun Tracker (Gen)**

(Elementary)

*Mission A, Grand Hyatt*

**Bryan Hubbard** (*bhubbard@purdue.edu*), Purdue University, West Lafayette, Ill.

**Nancy Tyrie** (*ntyrie@lsc.k12.in.us*) and **Erin Doherty** (*edoherty@lsc.k12.in.us*), Sunnyside Middle School, Lafayette, Ind.

Brighten your lesson plans! Learn how to design and build a solar panel device that tracks the Sun to maximize solar efficiency throughout the day and the four seasons.

**SESSION 14**

**Elementary Preservice Teachers—Can I Teach Science? (Gen)**

(General)

*Mission B, Grand Hyatt*

**Pamela G. Christol** and **April D. Adams** (*adams001@nsuok.edu*), Northeastern State University, Broken Arrow, Okla.

In this session, two professors explain how the “Draw A Science Teacher” instrument is used to gain insight into how a content-centered science course affects elementary preservice teachers' perceptions of their ability to teach science.

**SESSION 15**

**The NSTA Learning Center: A Tool to Develop Preservice Teachers (Gen)**

(General)

*Presidio C, Grand Hyatt*

**Al Byers** (*abyers@nsta.org*), Assistant Executive Director, e-Learning and Government Partnerships, NSTA, Arlington, Va.

Come learn about a new online system to assist professors in creating customized e-textbooks using Learning Center interactive and e-print resources for their preservice teachers.

**SESSION 16** (two presentations)*(College)**Sequin A, Grand Hyatt***Involving Students in Test Scoring in the Classroom for Better Understanding and Achievement in Algebra (Chem)****Bernadette Ezeliara and Irene O. Nweke**, Ebonyi State University, Abakaliki, Nigeria

Students are guided by their teacher in the process of test scoring their scripts. It was observed that student involvement in test scoring enhanced their understanding and achievement in chemistry.

**Involving Students in Test Scoring in the Classroom Enhances Understanding and Achievement in Chemistry Among Secondary School Students (Chem)****Bernadette Ezeliara, Irene O. Nweke, Margaret N. Anugwo, and Bernadine O. Ezezue**, Ebonyi State University, Abakaliki, Nigeria

Join us as we review findings from a study to determine the effect of students' involvement in test scoring in senior secondary school on their understanding and achievement in chemistry. Sixty students were involved in test scoring of chemistry scripts of their fellow students, guided by the teacher on the procedure of marking guide.

**SESSION 17****Engineering Tasks for Your K–8 Classroom: A Strategy for Weaving Objectives from Across Your Curriculum into a Design Challenge (Gen)***(General)**Texas Ballroom C, Grand Hyatt***Ann P. McMahon** ([annp McMahon@gmail.com](mailto:annp McMahon@gmail.com)), K–12 Engineering Educator, St. Louis, Mo.

Create your own engineering design tasks that integrate learning objectives from all curricular areas. This session is presented by a K–12 science teacher who is also an engineer.

**SESSION 18****NSTA Press® Session: Rise and Shine: A Practical Guide for the Beginning Science Teacher (Gen)***(Middle Level–High School)**Texas Ballroom D, Grand Hyatt***Linda Froschauer** ([fro2@mac.com](mailto:fro2@mac.com)), 2006–2007 NSTA President, and Field Editor, *Science & Children*, Westport, Conn.**Mary L. Bigelow** ([tramaire@gmail.com](mailto:tramaire@gmail.com)), Retired Educator, Middletown, Pa.

Are you new to science teaching? Do you mentor new teachers? We'll share strategies to help new teachers be successful from the very first day.

**SESSION 19****Bringing an Art Museum's Forensic Science Experience into the Special Education Science Classroom (Gen)***(General)**Texas Ballroom E, Grand Hyatt***Carol L. Jones** ([caroljones8710@yahoo.com](mailto:caroljones8710@yahoo.com)), Lawrence Technological University, Southfield, Mich.**Diane Krzyaniak** ([momkrzy@mi.rr.com](mailto:momkrzy@mi.rr.com)), Marshall Upper Elementary School, Westland, Mich.

Presider: P.J. Niehaus ([niehaus\\_p@msn.com](mailto:niehaus_p@msn.com)), Washtenaw Community College, Ann Arbor, Mich.

Through a grant written by Lawrence Technological University, special education and regular education teachers who had special education students came together to deepen their science content knowledge and improve their pedagogy, resulting in a forensic science experience developed for middle school special education students that addresses many of the national standards. Join us as we share this easily duplicated experience.

**SESSION 20****NMLSTA Session: Science for the At-Risk Student (Gen)***(Middle Level–High School)**Travis A, Grand Hyatt***Scott E. Diamond** ([scott.diamond@fayette.kyschools.us](mailto:scott.diamond@fayette.kyschools.us)), The Learning Center at Linlee, Lexington, Ky.

Giftedness is a risk factor for truancy and dropping out. In this session, I'll show you how to use science and STEM to address the motivational needs of low-income, ethnically diverse populations of at-risk youth. A focus on student ownership of valued roles turns potential dropouts into career and college-ready individuals.

**SESSION 21****The Scientific Method vs. Scientific Practices—Who Will Survive? (Gen)***(Middle Level)**Travis D, Grand Hyatt***Brian P. Short**, Director, Science Education Competitions, NSTA, Arlington, Va.

What is meant by the scientific method and how does this compare to the new "scientific practices" found in the NRC *Framework*? Come to this session and learn how to use the scientific method in the grades 6–9 classroom and find out how students can also use this method outside of the classroom. Information will also be provided on how the new NSTA competition, eCYBERMISSION, uses the scientific method.

SESSION 22

**Tesla Tales (Phys)**

(General) Salon B, Marriott Rivercenter

**Carlos R. Villa** (*villa@magnet.fsu.edu*), National High Magnetic Field Laboratory, Tallahassee, Fla.

Take a journey through the history of electromagnetic discovery. Learn how to recreate the experiments of some of history's greatest scientists in your classroom.

SESSION 23

**Flex-paced Flipped Mastery Physics (Phys)**

(High School) Salon J, Marriott Rivercenter

**Robert A. White** (*rwhite@bbchs.org*) and **Bill L. Sadler** (*bsadler@bbchs.org*), Bradley-Bourbonnais Community High School, Bradley, Ill.

Lecture becomes homework. Valuable class time is spent actively forming an individual, deep understanding of physics topics in a mastery environment.

SESSION 24

**Food Biology: Scientific Inquiry Through Food Production (Bio)**

(Middle Level–High School) Alamo Salon F, Marriott Riverwalk

**Dave M. Oberbillig** (*doberbillig@mcps.k12.mt.us*), Hellgate High School, Missoula, Mont.

Food is a basic human need that we consciously seek each day. Food biology addresses biology concepts and content through Project Based Learning (PBL) while students connect with community by producing fresh organic food. By producing food, students consider good nutrition and environmental health...and they get to spend productive time outdoors.

SESSION 25

**Chemical Web Experiment (Chem)**

(High School) Travis, Marriott Riverwalk

**Hans van Dijk** (*a.j.van.dijk@vu.nl*) and **Lisette van Rens** (*e.m.m.van.rens@vu.nl*), VU University Amsterdam, Netherlands

Hear how preuniversity students performed an online experiment—synthesis of methyl orange—at the Free University Amsterdam (VUA). No applet! Real online chemistry!

2:00–3:00 PM Workshops

**Ice Core Records—From Volcanoes to Supernovas (Earth)**

(General) 001A, Convention Center

**Donna L. Young** (*donna@aavso.org*), NASA/SAO/CXC, Bullhead City, Ariz.

Use absolute and relative dating techniques with high-resolution ice core data and historic volcanic eruptions to correlate and date supernova events with nitrate anomalies.

**Are Earth's Features Unique? (Earth)**

(Middle Level–High School) 001B, Convention Center

**Lynda Sanders** (*lyndas@coos-bay.k12.or.us*), Marshfield High School, Coos Bay, Ore.

**Pat Gram** (*pat.gram38@gmail.com*), Retired Educator, Aurora, Ohio

**Rurik J. Johnson** (*rurik\_johnson@rdale.org*), Plymouth Middle School, Plymouth, Minn.

We often have students make observations without scaffolding this skill. This NASA activity helps students make better observations and develops writing skills.

**Teaching Science Academic Vocabulary for Comprehension and Retention (Earth)**

(Elementary–Middle Level) 002, Convention Center

**Cindy Lasseter** (*lasseter431@gmail.com*), Luling (Tex.) ISD Teaching science academic vocabulary for comprehension and retention is challenging. Let's explore effective research-based strategies using a blended learning model to teach academic vocabulary.

**NASA: Inquiry Activities for Learning About Light and the Electromagnetic Spectrum and Multiwavelength Astronomy (Earth)**

(Middle Level–High School/Informal) 101A, Convention Center

**Edna K. DeVore** (*edevore@seti.org*), SETI Institute, Mountain View, Calif.

Experience inquiry activities for learning about visible and invisible light using simple classroom technologies. Standards-based lessons, colorful posters, and spectrometers will be distributed and multiwavelength astronomical applications presented.



**Adapting Space Adventures: Using Real NASA Data to Engage Students with Special Needs (Earth)***(Elementary–Middle Level)* 201, Convention Center**Kathy Costello** ([kacoste@siue.edu](mailto:kacoste@siue.edu)) and **Ellen J. Reilly** ([ejreilly@charter.net](mailto:ejreilly@charter.net)), Southern Illinois University, Edwardsville

All students can be scientists! Learn strategies to help your gifted and other-abled students use real NASA space probe data to conduct authentic inquiry activities.

**Let It Slide! (Phys)***(Preschool–Elementary)* 202A, Convention Center**Travis Sloane** ([tsloane@schools.nyc.gov](mailto:tsloane@schools.nyc.gov)), East Side Elementary School, New York, N.Y.**James L. Neujahr** ([jneujahr@ccny.cuny.edu](mailto:jneujahr@ccny.cuny.edu)), City College of New York, N.Y.**Tami Elaine Blasdel-Victor**, Garcia-Leza EC/PK Center, Houston, Tex.

Experience how four- and five-year-olds have explored gravity and friction by trying to redesign sleds to go down ramps, using low-cost and recycled materials.

**Go Hands On with the Nation's Report Card: Do HOTs, Observe ICT Simulations, and Learn About Linking NAEP to TIMSS Results (Gen)***(Elementary–High School)* 202B, Convention Center

**Peggy G. Carr** ([peggy.carr@ed.gov](mailto:peggy.carr@ed.gov)), National Center for Education Statistics, U.S. Dept. of Education, Washington, D.C. **Presider: Hector Ibarra** ([hibarraia@gmail.com](mailto:hibarraia@gmail.com)), National Assessment Governing Board Member, Iowa City, Iowa

Receive results of the recently released Nation's Report Card Hands On Tasks and Interactive Computer Tasks. Use HOTs activities (equipment and questions) that can be incorporated in your classroom. Information on the linking studies between NAEP and TIMSS provides an indication of how student achievement in the U.S. compares to other nations. A comprehensive NAEP folder including information on the International Data Explorer is provided.

**Engineering a Pollinator (Bio)***(Elementary–Middle Level)* 208, Convention Center

**Donna Rainboth** ([drainbot@eou.edu](mailto:drainbot@eou.edu)) and **Miriam Munck** ([mmunck@eou.edu](mailto:mmunck@eou.edu)), Eastern Oregon University, Pendleton

Explore pollination while engaging in an elementary engineering challenge. Learn botany and pollination content while engineering a hand pollinator. Lesson focuses on an authentic problem.

**Brushbots in the STEM Elementary Classroom****(Phys)***(Elementary)* 216A, Convention Center**Karen N. Umeda** ([karen\\_umeda@notes.k12.hi.us](mailto:karen_umeda@notes.k12.hi.us)) and **Lynn K. Lum**, Hawaii Dept. of Education, Honolulu**Alan S. Nakagawa** ([alannakagawa@me.com](mailto:alannakagawa@me.com)), Hawaii State Dept. of Education, Kamuela

**Ryan Saito** ([ryan\\_saito@notes.k12.hi.us](mailto:ryan_saito@notes.k12.hi.us)), Honolulu, Hawaii

Empower yourself to effectively teach STEM in the elementary classroom. Apply scientific and engineering practices as you create and redesign a Brushbot. Join us in an engaging activity and take home this mini robot!

**Interactive Student Notebooks (Gen)***(Elementary–Middle Level)* 217A, Convention Center

**Seneca J. Gilbreath** ([senecag@gmail.com](mailto:senecag@gmail.com)), Austin (Tex.) ISD

Identify strategies for using interactive student notebooks to differentiate and scaffold curriculum, promote student self-evaluation and peer evaluation, and encourage student inquiry and student engagement.

**A 5E Learning Cycle Integrating Science, Health, Physical Education, Math, and Language Arts (Gen)***(Elementary)* 217D, Convention Center

**Brenda Turgeon**, Purdue University Calumet, Hammond, Ind.

Engage in an integrated 5E (Engage, Explore, Explain, Elaborate, and Evaluate) learning cycle for the primary grades that uses inexpensive materials to teach students about health and the spread of disease.

**NESTA Session: Climate Change Classroom Toolkit (Earth)***(Middle Level–High School)* Ballroom A, Convention Center

**Roberta M. Johnson** ([rmjohnsn@nestanet.org](mailto:rmjohnsn@nestanet.org)), NESTA and University at Albany, Boulder, Colo.

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

Explore the scientific foundations of what we know about climate change, greenhouse gases, and energy consumption through hands-on and data-rich classroom activities from NESTA.

**DuPont Session: Shuffle It Up! Understanding Photosynthesis and Respiration (Bio)**

(Middle Level–High School) Bonham B, Grand Hyatt

**Donna Parker** (*dcall@zoomnet.net*), Present 712 Educator, Lewis Center, Ohio

**JoAnn Pfeiffer** (*joannpf@frontier.com*), Federal Hocking Secondary Schools, Stewart, Ohio

Students have major misconceptions about photosynthesis and cellular respiration. Explore these topics at the micro (cellular) and macro (ecosystem) levels using a computer simulation and a hands-on activity.

**Life—Here? There? Elsewhere? (Gen)**

(Middle Level) Bonham C, Grand Hyatt

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

Investigate the phenomenon of life through introductory exobiology and planetology activities for grades 7–8. Explore life detection methods in simulated extrasolar conditions that lead to a spacecraft design.

**Energy: Its Forms and Transformations (Phys)**

(Middle Level) Bonham D, Grand Hyatt

**Sharon A.L. Hushek** (*sharon.hushek@franklin.k12.wi.us*), Ben Franklin Elementary School, Franklin, Wis.

**Mary K. Fassbender** (*mary.fassbender@franklin.k12.wi.us*) and **Beth Gorak**, Forest Park Middle School, Franklin, Wis. Learn easy and fun hands-on energy transformation activities. Walk away with activities ready to teach how to identify light, sound, and electrical, chemical, thermal, and solar energy transformations.

**NARST Session: Developing a Critical Eye for Reading Media Reports of Science: Bridging the Science/English Divide to Advance Scientific Literacy (Gen)**

(Middle Level–High School) Bonham E, Grand Hyatt

**Billy McClune** (*w.mcclune@qub.ac.uk*), Queen’s University, Belfast, U.K.

Promote critical reading of science in the news by learning from the outcomes of interdisciplinary curricular developments that brought together teachers of science and English.

**Using Protocols to Examine Student Work (Gen)**

(General) Bowie B, Grand Hyatt

**Dena Lind**, Brooklyn Botanic Garden, Brooklyn, N.Y.

Using protocols, participants work together to examine student work. Find out how middle school science teachers in New York City improved instruction by examining student artifacts together.

**Facing the Future: Global Connections and Sustainability (Env)**

(Middle Level–High School) Republic B, Grand Hyatt

**Pamela Whiffen** (*pwpwr@aol.com*), NASA Educator Ambassador, Phoenix, Ariz.

Explore inquiry-based hands-on materials that explore sustainable resource uses and the implications for future quality of life. Take home a CD-ROM.

**PDI WestEd Pathway Session: Common Core Science Literacy (Gen)**

(General) Conference Room 12, Marriott Rivercenter

**Jody Sherriff** (*jskidmo@wested.org*), WestEd, Santa Ana, Calif.

Build science literacy learning experiences that meet the Next Generation Science Standards, Common Core State Standards, and English language arts. Explore how inquiry coupled with oral language, writing, and reading contribute to student understanding.

**Benthic Macroinvertebrates (Env)**

(Middle Level–College) Conf. Room 16, Marriott Rivercenter

**David W. Allard** (*david.allard@tamut.edu*), Texas A&M University, Texarkana

**Robert Williams**, BLOCKS Project, The University of Texas, Belmont

Plumb the depths of information on common benthic macroinvertebrates as well as find out how to collect and identify them.

**SYM-2 Follow-Up Session: Monarch Life Cycles and Raising Monarchs in Captivity (Env)**

(Elementary–High School) Conf. Room 17/18, Marriott Rivercenter

**Grant Bowers** and **Kelly Nail**, University of Minnesota, St. Paul

Presenter: Jim O’Leary, Maryland Science Center, Baltimore  
Observe live monarchs throughout their life cycle to learn about their biology and how you can raise these fascinating organisms in your classroom!

**Building STEM Education Through Robotics Competitions for All Levels and Budgets (Gen)**

(Elementary–Middle Level/Inf.) Salon A, Marriott Rivercenter

**Caryn Meirs** (*caryn.meirs@gmail.com*), Half Hollow Hills Central School District, Melville, N.Y.

**Susanne L. Hokkanen** (*susanne.hokkanen@gmail.com*), Colin Powell Middle School, Matteson, Ill.

Join us for some hands-on time with the robots and answers to questions about start-ups for all ages and budget levels!

**PDI Outdoor Science Pathway Session: Even More Math and Science Integration (Env)**

(Elementary–Middle Level) Salon F, Marriott Rivercenter  
**Jessica Jetton** ([jjetton@forsyth.k12.ga.us](mailto:jjetton@forsyth.k12.ga.us)), Forsyth County Schools, Cumming, Ga.

**Steve Rich** ([bflywriter@comcast.net](mailto:bflywriter@comcast.net)), NSTA Director, Professional Development, and West GYSTC, Carrollton, Ga.

Practical strategies and resources will shore up your collection of ideas for getting students learning in the school yard with memorable lessons.

**PDI McREL Pathway Session: Designing Effective Science Instruction—Learning Goals That Clearly Align to Instructional Activities (Gen)**

(General) Salon K, Marriott Rivercenter  
**Cyndi Long** ([clong@mcrel.org](mailto:clong@mcrel.org)), McREL, Denver, Colo.

**Anne Tweed** ([atweed@mcrel.org](mailto:atweed@mcrel.org)), 2004–2005 NSTA President, and McREL, Denver, Colo.

Trying to cover too much science content is the largest barrier to developing student conceptual understanding. Find out how to make decisions about essential learning goals, learning progressions that support those goals, and the criteria for student success. Review sample learning progressions before creating one of your own. A sample rubric will then be generated that matches your learning progression. Take home handouts with templates.

**Using the Graphing Calculator to Model Data (Gen)**

(Middle Level–High School) Salon M, Marriott Rivercenter

**Melanie Hester** ([mhester@admin.fsu.edu](mailto:mhester@admin.fsu.edu)), Florida State University School, Tallahassee

Join me for this hands-on workshop that uses graphing technology to model data. Math and science are connected by emphasizing data collection and mathematical trends.

**Butterfly Bonanza (Bio)**

(Elementary–High School) Alamo Salon C, Marriott Riverwalk

**Nancy R. Sale** ([nancysale@dadeschools.net](mailto:nancysale@dadeschools.net)), Lillie C. Evans K–8 Center, Miami, Fla.

Butterfly Bonanza provides a road map to success for implementing a native butterfly habitat. Take home a starter kit that will enable you to immediately set up a habitat at your school. In addition, there will be door prizes and a DVD will be shared.

**The Natural Selection of M&M's® (Bio)**

(High School) Alamo Salon D, Marriott Riverwalk

**Katherine A. Larson** ([kberanek2004@yahoo.com](mailto:kberanek2004@yahoo.com)), Hoover High School, Des Moines, Iowa

**Whitney Leverich** ([leverich@iastate.edu](mailto:leverich@iastate.edu)), Iowa State University, Ames

Sweeten up your science lessons! Learn how to use M&M's and inquiry-based practices to promote the understanding of natural selection.

**2:00–3:00 PM Exhibitor Workshop****Active Physics—Ahead of Its Time in Capturing the Essence of NGSS and STEM (Phys)**

(Grades 6–12) 205, Convention Center

Sponsor: It's About Time

**Arthur Eisenkraft**, 2000–2001 NSTA President, and UMass Boston, Mass.

Learn from author Dr. Arthur Eisenkraft how this proven program implements STEM and the essence of the highly anticipated Next Generation Science Standards. Understand the benefits of the Engineering Design Cycle and learn how physicists, teachers, and science educators designed this project-driven course, recognized for the positive impact it has on students of all levels.

**2:00–3:30 PM Networking Opportunity****NSTA Chapter and District Meet and Greet in Honor of Wendell Mohling**

Exhibit Hall, Convention Center

Enjoy light refreshments while meeting and networking with colleagues and representatives from all of NSTA's 18 Districts. Learn more about events, initiatives, and happenings in your district directly from your representatives in an informal setting.

**2:00–3:30 PM Exhibitor Workshops**

**NGSS, STEM, and Scientific Literacy—What Now? (Gen)**

(General) 006B, Convention Center

Sponsor: Pearson

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

**Michael Padilla**, 2005–2006 NSTA President, and Clemson University, Clemson, S.C.

**Zipporah Miller**, Author, Bowie, Md.

**Kelly McGrath**, Pearson, Boston, Mass.

Join an interactive discussion panel of Pearson science authors who have been part of the writing teams for the Next Generation Science Standards. Participants will get an opportunity to ask questions about the Next Generation Science Standards and how NGSS will affect science teaching and learning.

**Earth Science Investigation: Modeling Ocean Circulation and Layers of the Atmosphere (Earth)**

(Grades 6–8) 006C, Convention Center

Sponsor: PASCO scientific

**Presenter to be announced**

With PASCO’s new Density Circulation Model, modeling large-scale events is easy. Experience how density-driven circulation leads to natural layering, large-scale vertical currents, and atmospheric turbulence. This hands-on workshop utilizes SPARKvue® HD for iPad and select Android tablets to enhance your teaching practice and improve student understanding of core topics.

**AP Physics—Friction (Phys)**

(Grades 9–12) 006D, Convention Center

Sponsor: PASCO scientific

**Presenter to be announced**

In this standards-based probeware lab activity from PASCO’s new *Advanced Physics Teacher Guide*, you’ll explore the physics of friction. In this hands-on workshop, learn how to meet AP lab requirements and build a deeper student understanding of the required content, using PASCO’s new Capstone application and 850 Universal Interface.

**LEGO MINDSTORMS® Education EV<sub>3</sub>: Robotics in the Middle School Classroom—Advancing Your Program (Gen)**

(Grades 6–8) 007A, Convention Center

Sponsor: LEGO Education

**Jessica Pope**, LEGO Education, Pittsburg, Kans.

Are you already using LEGO Education NXT MINDSTORMS in your classroom and looking for ways to expand

its use to further engage students and cover even more curriculum concepts? If so, this hands-on session is designed for you. Participants will experience the new LEGO MINDSTORMS Education EV<sub>3</sub> platform through an interactive sample lesson from the enhanced curriculum. See firsthand the robust capabilities and the cross-curricular applications that the third generation of LEGO MINDSTORMS Education has to offer.

**They Come from Outer Space (Earth)**

(Grades 5–12) 007B, Convention Center

Sponsor: Simulation Curriculum Corp.

**Herb Koller** ([hkoller@simcur.com](mailto:hkoller@simcur.com)), Simulation Curriculum Corp., Minnetonka, Minn.

In ancient times, comets were seen as omens of disaster. Today, possible collisions with rogue asteroids cause concern. Join us on the big screen to learn about near-Earth asteroids and bright comets and the ready-to-use lesson included with the award-winning *Starry Night*.

**Pollution and Acid Rain Activities (Env)**

(Grades 6–12) 007D, Convention Center

Sponsor: Science Take-Out

**Susan Holt** ([contact@sciencetakeout.com](mailto:contact@sciencetakeout.com)), Science Take-Out, Pittsford, N.Y.

Join us for two simple hands-on activities. In *Pollution Investigation*, we’ll address what is causing the pollution in Big Lake. We’ll conduct and analyze simulated water tests for nitrates, PCBs, *E. coli*, and lead. In *Acid Rain and Buffers*, we’ll explore why some lakes are more susceptible to the effects of acid rain.

**HHMI’s *The Making of the Fittest: The Coevolution of Genes and Culture in Your Classroom* (Bio)**

(Grades 9–College) 008A, Convention Center

Sponsor: Howard Hughes Medical Institute

**Keri Shingleton**, Holland Hall, Tulsa, Okla.

**Laura Bonetta**, Howard Hughes Medical Institute, Chevy Chase, Md.

Join us for the NSTA premiere of HHMI’s latest short film, *The Coevolution of Genes and Culture!* Today, only about a third of human adults worldwide can digest lactose, the main sugar in milk. This film tells the fascinating story of how this trait evolved in the last 10,000 years of human history—a story that brings together archaeological and genetic evidence. Learn about and receive free brand-new resources to help you bring this memorable example of recent human evolution into your classroom. Materials are appropriate for all levels of biology, including middle school, high school, and undergraduate.

**AP Biology: Strategies for Teaching Within the New Framework (Free Samples) (Bio)***(Grades 9–College) 008B, Convention Center*

Sponsor: BIOZONE International

**Jason Crean**, Lyons Township High School, Western Springs, Ill.**Tracey Greenwood**, BIOZONE International, Hamilton, New Zealand

BIOZONE presents innovative approaches to teaching AP Biology within the thematic framework of the four big ideas. This workshop will demonstrate the pedagogical basis of BIOZONE's resources. Join us and discover how to use hands-on, concept-based activities that build on prior knowledge and foster inquiry in students of all capabilities. Take home free samples.

**Science the National Geographic Way! (Bio)***(Grades K–5) 101B, Convention Center*

Sponsor: National Geographic

**Tom Hinojosa**, National Geographic Learning, Monterey, Calif.

Join us as we show you how to teach science using free online technology tools and the science notebooking process. We will explore how National Geographic Learning inspires students to care about the planet through inquiry and relevant content.

**Bring the Excitement of Hands-On Learning to Your Middle School Classroom! (Phys)***(Grades 5–9) 102B, Convention Center*

Sponsor: K'NEX Education

**Presenter to be announced**

Build and investigate simple machine models, take measurements, and gather data to determine work input, work output, mechanical advantage, gear ratios, effort forces, resistance forces, and more. The exercises and explorations illustrate engineering and scientifically rich content through the use of models. Applying understandings of these models to real-world examples of machines leads to a better understanding of design and systems of machines in practical use. Standards-aligned STEM concepts will be emphasized. Drawing for a K'NEX® Education Exploring Machines Set!

**New Guided Inquiry Labs for AP Chemistry from Flinn Scientific (Chem)***(Grades 10–12) 103A, Convention Center*

Sponsor: Flinn Scientific, Inc.

**Irene Cesa** (*icesa@flinnsci.com*) and **Scott Stahler** (*sstahler@flinnsci.com*), Flinn Scientific, Inc., Batavia, Ill.

This interactive, hands-on workshop can help you implement the revised laboratory investigations and curriculum framework for AP Chemistry! Join Flinn Scientific as we present two new guided inquiry chemistry experiments that support the integrated learning objectives and applied science practice skills your students need for success. Pre-lab preparation and preliminary activities for each investigation have been optimized so teachers can effectively guide students and provide maximum opportunities for inquiry. Handouts provided for all activities!

**Distillation: Simple and Fascinating Experiments in the Chemistry of Aromas and Smells (Chem)***(Grades 9–12) 203A, Convention Center*

Sponsor: LAB-AIDS, Inc.

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

We distill water to purify it, or so we think. So why does the clear distillate from apple cider smell like apples? Join us for this signature activity from the new high school program, *A Natural Approach to Chemistry*. Using a clever test tube distillation apparatus, distill the essence of vanilla and the scent of mint. Distillation is a crucial process in chemical engineering and technology, yet few students ever get to explore the process.

**Build It! Increase Student Engagement with the Anatomy in Clay® Learning System (Bio)***(Grades 6–College) 204A, Convention Center*

Sponsor: Anatomy in Clay Learning System

**Teri Fleming**, Houston, Tex.

Join us for a hands-on workshop to promote project-based learning and success in your classroom. Join an award-winning educator and pick up tips to help your students truly understand how their bodies work. This curriculum can allow students to explore many different aspects of the human body.

**Extra, Extra! Read All About It! Taking Biology from the News to the Classroom (Bio)**

(Grades 9–12) 204B, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Steve Nowicki**, Duke University, Durham, N.C.

Join *Holt McDougal Biology* author Steve Nowicki in an interactive session as he presents a variety of strategies for bringing the real world into your classroom. Emphasis will be placed on using a full range of media resources to connect current events, recent scientific discoveries, and fun quirks of nature with your biology classroom and the everyday lives of your students.

**Introduction to Protozoa (Bio)**

(Grades 6–12) 206A, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Immerse your students in another world! The low-maintenance microorganisms showcased in this workshop are ideal for classroom inquiry, and the activities are designed for all learning levels. Learn about feeding, digestion, growth, and movement of these single-celled organisms. . . and pick up expert tips on care and maintenance. Free sample cultures and activities.

**Engineering, Technology, and the Application of K–8 Science (Gen)**

(Grades K–8) 206B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Ready to prepare your district's students for STEM careers? Using practical applications of science skills from practices-based inquiry lessons, come learn to integrate engineering processes into best practices.

**Flipping Out Over Chemistry! (Chem)**

(Grades 9–12) 207B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Learn how to flip your chemistry classroom to increase individualized instruction and improve student understanding of key concepts. You'll explore a blend of digital and hands-on activities that allow students to review content as "home-work" and use valuable classroom time for inquiry activities, assignments, and tests. Free materials and giveaways!

**Siemens STEM Academy: Top Free STEM Resources for Your Classroom (Gen)**

(Grades K–12) 209, Convention Center

Sponsor: Discovery Education

**Kyle Schutt**, Discovery Education, Silver Spring, Md.

Do you want to boost STEM learning in your classroom? Are you looking for tools and resources that you can use in your classroom immediately? Explore 10 dynamic websites that can help you make STEM a part of your class every day, including the Siemens STEM Academy (*siemensstemacademy.com*), a site with free resources, webinars, and professional development opportunities. Walk away with a wealth of free tools and resources for your classroom.

**Biology with Vernier (Bio)**

(Grades 9–College) 210A, Convention Center

Sponsor: Vernier Software & Technology

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

**Rick Rutland**, Five Star Education Solutions, LLC, San Antonio, Tex.

Experiments such as transpiration, cell respiration, and EKG from our popular *Biology with Vernier* and *Advanced Biology with Vernier* lab books will be performed in this hands-on workshop. You will be able to try these experiments using LabQuest 2 and LabQuest Mini. Our *Investigating Biology through Inquiry* lab book will also be on display.

**STEM Activities Using Vernier Technology (Phys)**

(Grades 6–12) 210B, Convention Center

Sponsor: Vernier Software & Technology

**Robyn Johnson** (*info@vernier.com*) and **David L. Vernier** (*info@vernier.com*), Vernier Software & Technology, Beaverton, Ore.

Taking STEM education from buzzword to classroom implementation can be challenging. In this workshop, we will introduce you to several STEM activities appropriate for middle school and high school students that make use of Vernier technology. The activities will model an approach you can use to implement STEM education into your curriculum.

**Hands-On Help for the New AP Biology Labs (Bio)***(Grades 9–12)* 211, Convention Center

Sponsor: Ward's Science

**Jana Penders** (*jana.penders@vwr.com*), VWR Education, Rochester, N.Y.

Prepare your students for success and meet new AP Biology standards with Ward's AP Biology Investigations, exclusively designed to match the four big ideas and seven science practices. Get advice and share ideas on how to add student lead inquiry to your labs.

**Creating a Digital Strategy for STEM (Bio)***(Grades 7–College)* 212B, Convention Center

Sponsor: Swift Optical Instruments, Inc.

**David Doty** (*david@swiftoptical.com*), Swift Optical Instruments, Inc., Schertz, Tex.

Discover the strategies needed to create a digital STEM program for your school. Lab development, lesson plans, assessment, and teaching techniques will be demonstrated and modeled using Swift digital microscopes and Motic software. Leave with all you need to create a three- to five-year implementation plan and keys to sustaining your STEM program, including professional development.

**Elementary Teacher Survival Kit (Gen)***(Grades 1–6)* 214A, Convention Center

Sponsor: Educational Innovations, Inc.

**Ken Byrne**, Educational Innovations, Inc., Bethel, Conn.

This hands-on workshop—chock-full of easy-to-do science inquiry lessons—enables new and veteran teachers to expand their bag of tricks. Using discrepant events, these activities give students a sense of mystery and awe. Topics include energy, air pressure, scientific method, data collection, and graphing. Door prizes and giveaways!

**Chemistry and the Atom: Fun with Atom Building Games! (Phys)***(Grades 6–12)* 214D, Convention Center

Sponsor: CPO Science/School Specialty Science

**Scott W. Eddleman** and **Nathan Olsson**, CPO Science/School Specialty Science, Nashua, N.H.

Understanding abstract concepts about atoms can be difficult. Use our model to experience innovative games and activities that present students with opportunities to grasp atomic structure and its connection to the periodic table. Take away STEM activities and an understanding of how to incorporate science and engineering practices in your lessons.

**2:30–3:00 PM Presentation****SESSION 1****Educational Apps for the 21st-Century Classroom and Beyond (Gen)***(General)* Lone Star Ballroom F, Grand Hyatt**Jennifer R. Hargrove**, Cherokee Middle School, Springfield, Mo.

Join us as we showcase apps (smartphone, iPad, iPod) that students and teachers can use as an additional educational tool for the 21st-century learner.

**2:30–3:30 PM Exhibitor Workshop****Renewable Power, Vernier, and KidWind Gear****(Phys)***(Grades 4–12)* 007C, Convention Center

Sponsor: KidWind Project

**Joseph T. Rand** (*joe@kidwind.org*) and **Michael Arquin**, KidWind Project, St. Paul, Minn.

Interested in using Vernier data collection equipment to explore wind power and solar thermal and photovoltaic technology? This hands-on workshop, in partnership with Vernier, will let you explore concepts like voltage, current, power, energy, and device efficiency using Vernier equipment and KidWind renewable energy gear.

### 3:00–4:30 PM Exhibitor Workshops

#### A Sneak Preview of *FOSS Earth History*, 2nd Edition for Middle School (Earth)

(Grades 5–8)

214C, Convention Center

Sponsor: Delta Education/School Specialty Science—FOSS  
**Jessica Penchos, Virginia Reid, and Larry Malone**, The Lawrence Hall of Science, University of California, Berkeley

What evidence from rocks lets us draw conclusions about the history of our planet and consider implications for the future? Explore Earth history concepts from the NRC *Framework* with hands-on activities and multimedia. Preview the revised *FOSS Earth History Course*, including new features, strategies, content, and materials.

#### Engineer the Tools for Inquiry of Candy Food Dyes (Bio)

(Grades 6–9)

217B, Convention Center

Sponsor: Bio-Rad Laboratories

**Leigh Brown**, Bio-Rad Laboratories, Hercules, Calif.

What's in your candy? In this hands-on workshop, extract colorful food dyes from candy...and separate and identify them using a STEM-integrated, do-it-yourself electrophoresis box. This inquiry-based activity is a great way to introduce pipetting, electrophoresis, and solution-making skills in addition to chemistry, physics, and engineering concepts.

### 3:00–5:00 PM Meetings

#### NSTA International Advisory Board Meeting

Goliad, Grand Hyatt

#### AMSE Membership Meeting

Conference Room 10, Marriott Rivercenter

### 3:30–4:00 PM Presentation

#### SESSION 1

#### Learning Science By Creating a Newspaper (Gen)

(Elementary–Middle Level)

216B, Convention Center

**Kristen M. Sumrall** ([kmcurry@olemiss.edu](mailto:kmcurry@olemiss.edu)) and **William J. Sumrall** ([sumrall@olemiss.edu](mailto:sumrall@olemiss.edu)), The University of Mississippi, University, Miss.

Presider: Jerilou Moore, The University of Mississippi, University, Miss.

Come learn how to develop a science-based newspaper in an elementary classroom using the writing process and inverted-pyramid writing design. An eight-day unit plan is described.

### 3:30–4:30 PM Robert H. Carleton Lecture

#### Meeting the Challenge of the Next Generation Science Standards (Gen)

(General)

Grand Ballroom C1, Convention Center



**Michael J. Padilla** ([padilla@clemson.edu](mailto:padilla@clemson.edu)), 2005–2006 NSTA President, and Professor of Science Education, Clemson University, Clemson, S.C.

Presider: Pamela G. Christol, Program Representative, NSTA San Antonio National Conference, and Northeastern State University, Broken Arrow, Okla.

With the advent of the highly anticipated Next Generation Science Standards, teachers and their students will be challenged to take their games to the next level. Will your students be ready to think more deeply about the science to be learned? What specific challenges will you and your students face? How can you prepare for the increased expectations?

*Dr. Michael J. Padilla is a professor of science education and former director of the Eugene T. Moore School of Education at Clemson University. In recent years, he has focused on the issue of English Language Learners through the University of Georgia's Center for Latino Achievement and Success in Education, which he directed.*

*Michael began teaching in an underserved school bordering Detroit's automobile plants, and his experiences working with this population influenced his future endeavors as an educator. After becoming a university professor in Canada, he moved to the University of Georgia, where he spent 29 years serving as an associate dean and director of the School of Teacher Education.*

*Throughout his career, Dr. Padilla has never forgotten his roots as a middle and secondary school science teacher, using those experiences to enhance his work at the university level, to lead professional organizations, and to provide leadership through grants and projects. In addition to serving as NSTA president in 2005, he has worked on numerous NSTA committees and served on the NSTA board of directors.*

*Dr. Padilla is widely published, including coauthor of a textbook series on topics such as Astronomy, Cells and Heredity, and Weather and Climate.*

*His recognitions include the 2012 NSTA Robert H. Carleton Award for National Leadership, the NSTA Distinguished Service to Science Education Award, and the Walter B. Hill Service Award for Distinguished Achievement in Public Service at the University of Georgia.*

*He holds a PhD in science education from Michigan State University.*



**3:30–4:30 PM Presentations****SESSION 1****A Project-based Approach to Weather and Climate (Earth)***(Middle Level–High School) 003A, Convention Center***Elizabeth S. Harrington**, Essex High School, Essex Junction, Vt.**Mark J. Powers** (*mpowers@vuhs.org*), Vergennes High School, Vergennes, Vt.

Learn how to put authentic projects into your weather and climate units. We'll share our experiences and you'll leave with lesson plans, fresh ideas, and lots of resources.

**SESSION 2**

✓ **The Nation's Report Card Will Provide the First National Test of How Well Students Do in Technology and Engineering Literacy (Gen)**

*(Middle Level) 202B, Convention Center***Cornelia Orr** (*cornelia.orr@ed.gov*), National Assessment Governing Board, U.S. Dept. of Education, Washington, D.C.

Prsident: Hector Ibarra (*hibarraia@gmail.com*), National Assessment Governing Board Member, Iowa City, Iowa

More than ever, your students will need to be skilled in technology to compete in an increasingly global economy. In 2014, the National Assessment of Educational Progress will provide the U.S. with its first-ever assessment in Technology and Engineering Literacy (TEL). Find out what NAEP will ask of our students and how it will measure student performance. Video scenarios and examples will be shown.



**NSTA  
STUDENT CHAPTER  
AND  
STUDENT MEMBERS  
RECEPTION**

NSTA joins forces with the University of Missouri to present a student reception that's never been seen before! Mizzou leaders will also provide insight and hands-on demonstrations on activities and programs presented in the local community. This will be an excellent opportunity for preservice and new teachers alike. Also, learn how you can establish (or improve) an NSTA student chapter on your campus and the benefits of doing so. Refreshments included.

**Friday, April 12**  
**5:30–7:00 PM**  
Grand Hyatt San Antonio  
Travis C/D

**NSTA** National  
Science  
Teachers  
Association



**SESSION 3**

**STEM Digital: Digital Cameras as Scientific Instruments (Env)**

*(Informal Education)* 207A, Convention Center

**Morton M. Sternheim** ([mort@umassk12.net](mailto:mort@umassk12.net)) and **Rob Snyder** ([snyder@umassk12.net](mailto:snyder@umassk12.net)), UMass Amherst, Mass.

Digital cameras can produce scientific data. Free Mac/Windows software reveals intensities of colors in images and measures distances, angles, areas, and changes over time.

**SESSION 4**

**CESI Session: Sport and Science Through Practical and Digital Solutions in the Classroom (Gen)**

*(Elementary–Middle Level)* 212A, Convention Center

**Roger J. Carter** ([rocar65@gmail.com](mailto:rocar65@gmail.com)), Gullingskolan, Spånga, Stockholm, Sweden

**Amy Lindau** ([amyli@bredband.net](mailto:amyli@bredband.net)), Norra Ängbyskolor, Bromma, Sweden

**Emma Dobson** ([dobson.emma@gmail.com](mailto:dobson.emma@gmail.com)), Europaskolan, Stockholm, Sweden

**Anne Vestlund** ([annzan@mbox301.tele2.se](mailto:annzan@mbox301.tele2.se)), Carlssons Skola, Stockholm, Sweden

A team of Swedish teachers will discuss their efforts at combining digital and practical activities within the fields of sports and science. Examples will be given on how these fields can be used for younger students to enhance their knowledge of science.

**SESSION 5**

**ASTC Session: The Uniqueness of Community: Exploring Opportunities Through Collaboration in an Elementary Science Program (Gen)**

*(Elementary)* 213A, Convention Center

**Terri Hebert** ([terri.hebert@gmail.com](mailto:terri.hebert@gmail.com)), Indiana University South Bend

By recognizing a community’s uniqueness through collaborative opportunities, a top-notch elementary science program was established. Join me as I share the steps involved.

**SESSION 7**

**Combining Interactive Whiteboards and Clicker Technology to Inform Instruction (Gen)**

*(General)* Crockett A, Grand Hyatt

**Eric D. Lemoine** ([eric\\_lemoine@beaverton.k12.or.us](mailto:eric_lemoine@beaverton.k12.or.us)), Kinaman Elementary School, Aloha, Ore.

See how interactive whiteboards and student-response system “clickers” can be used as formative assessment tools to inform instruction. Leave with digital examples to adapt to your teaching!

**SESSION 8**

**Effective Use of Informal Science Resources in the School Classroom (Gen)**

*(General)* Crockett B, Grand Hyatt

**Lynn M. Arcuri, Darrell Jones** ([djones@naturemuseum.org](mailto:djones@naturemuseum.org)) and **Sophie McNeill**, Peggy Notebaert Nature Museum, Chicago, Ill.

The Chicago Academy of Sciences’ Peggy Notebaert Nature Museum provides an in-depth look at how to best use the resources available at your local informal science institution.

**SESSION 9**

**Science Literacy: New Approaches to Critical Thinking for the 21st Century (Gen)**

*(Middle Level–High School/Informal)* Crockett C, Grand Hyatt

**Laura Pearce** ([laura\\_1249@yahoo.com](mailto:laura_1249@yahoo.com)) and **Wendy Saul** ([ewendysaul@gmail.com](mailto:ewendysaul@gmail.com)), University of Missouri–St. Louis

Through the connections of science and journalism, our NSF-funded project—*SciJourn*—has developed innovative new approaches for enhancing science literacy among teens.

**SESSION 10**

**21st-Century STEM Education Leaders in Action (Gen)**

*(General)* Crockett D, Grand Hyatt

**Anthnette Peña** ([apena@trianglecoalition.org](mailto:apena@trianglecoalition.org)), Triangle Coalition for Science and Technology Education, Arlington, Va.

Meet current Einstein Fellows and hear how their work on Next Generation Science Standards, Common Core State Standards, and other national policy initiatives are changing the conversations in Washington, D.C.

**SESSION 11**

**ASTE Session: Inquiry Centers: Nurturing and Assessing Students’ Science Process Skills (Gen)**

*(Elementary–Middle Level/College)* Mission A, Grand Hyatt

**Aaron D. Isabelle** ([aarondisabelle@gmail.com](mailto:aarondisabelle@gmail.com)) and **Thais B.P. da Cunha** ([dacunhat@newpaltz.edu](mailto:dacunhat@newpaltz.edu)), SUNY New Paltz, N.Y.

Using an inquiry center approach, students construct and interact with their classmates’ centers, while teachers support and assess the development of students’ process skills.

**SESSION 12****Catch That Drop—Because Every Drop Counts!****(Gen)***(General)**Mission B, Grand Hyatt*

**Noah Newman** ([noah.newman@colostate.edu](mailto:noah.newman@colostate.edu)), Colorado State University, Fort Collins

**Margaret A. Holzer** ([mholzer@monmouth.com](mailto:mholzer@monmouth.com)), Chatham High School, Chatham, N.J.

Collect precipitation data in the Community Collaborative Rain, Hail and Snow (CoCoRaHS) Network, a fun science project for students of all ages. Find out how to use this data in your classroom.

**SESSION 13****The NSTA Learning Center: Free Professional Development Resources and Opportunities for Educators****(Gen)***(General)**Presidio B, Grand Hyatt*

**Flavio Mendez** ([fmendez@nsta.org](mailto:fmendez@nsta.org)), Senior Director, NSTA Learning Center, NSTA, Arlington, Va.

**Al Byers** ([abyers@nsta.org](mailto:abyers@nsta.org)), Assistant Executive Director, e-Learning and Government Partnerships, NSTA, Arlington, Va.

Lost when it comes to finding online professional development resources to enhance your content knowledge and skills? With more than 9,100 resources (25% of which are free) and quality PD opportunities to assist educators with core subject content, the NSTA Learning Center has the answers! Walk away with free resources and ICE CREAM!

**SESSION 14****Research Worth Reading: 2012 Research Selected by NSTA Affiliates****(Gen)***(General)**Presidio C, Grand Hyatt*

**Kathryn Scantlebury** ([kscantle@udel.edu](mailto:kscantle@udel.edu)), NSTA Director, Multicultural/Equity in Science Education, and University of Delaware, Newark

Each year, the NSTA Research Committee works with NSTA affiliates to identify research that teachers should read. This session will share the identified research of 2012.

**SESSION 15** (two presentations)*(Elementary/College)**Sequin A, Grand Hyatt***Integrating Climate Change for Elementary Preservice Teachers: Tales from the Field****(Gen)**

**Christopher Dobson** ([dobsonc@gvsu.edu](mailto:dobsonc@gvsu.edu)) and **Heather Miller** ([millehea@gvsu.edu](mailto:millehea@gvsu.edu)), Grand Valley State University, Allendale, Mich.

Join us as we share successes and challenges of integrating life and Earth science concepts by biologists and geologists in a two-instructor course for elementary preservice teachers on climate change.

**A Self-Efficacy Inquiry: Constructing Foundational Practices with Preservice Elementary Teachers****(Gen)**

**Michele L. White** ([mwhite@kutztown.edu](mailto:mwhite@kutztown.edu)) and **Krista Varano** ([varano@kutztown.edu](mailto:varano@kutztown.edu)), Kutztown University of Pennsylvania, Kutztown

Explore the development of preservice teacher self-efficacy through methods courses to prepare teacher candidates for inspiring math and science practices in the classroom.

**SESSION 16****Engineering Collaboration in the K–8 Classroom: Using Engineering Tasks to Facilitate 21st-Century Social Skills****(Gen)***(General)**Texas Ballroom C, Grand Hyatt*

**Ann P. McMahon** ([annpmcmahon@gmail.com](mailto:annpmcmahon@gmail.com)), K–12 Engineering Educator, St. Louis, Mo.

Engineering is a collaborative learning experience. A K–12 science teacher who is also an engineer presents strategies for facilitating the social skills of engineering practice.

**SESSION 17****NSTA Press® Session: Good-Bye MSDS, Hello SDS****(Gen)***(General)**Texas Ballroom D, Grand Hyatt*

**Ken R. Roy** ([safesci@sbcglobal.net](mailto:safesci@sbcglobal.net)), Glastonbury (Conn.) Public Schools

OSHA has adopted the Globally Harmonized System of Classification and Labeling of Chemicals. Learn how it will impact on laboratory safety requirements in your school, including how Material Safety Data Sheets (MSDS) will be called Safety Data Sheets (SDS).

**SESSION 18**

**Helping Gifted Learners (and All Your Other Students) Excel with D.I. (Gen)**

*(General) Texas Ballroom E, Grand Hyatt*  
**Keven Youngblood**, Cherokee Middle School, Springfield, Mo.

We'll focus on differentiating instruction with parallel curriculum (and other strategies) to challenge the whole spectrum of student strengths in your science classroom.

**SESSION 19**



**NSTA Press® Session: Visualizing the World of Atoms and Molecules: Virtual Technologies That Wow Students (Gen)**

*(Middle Level–High School) Travis A, Grand Hyatt*  
**Gail Jones**, North Carolina State University, Raleigh

**Amy R. Taylor**, University of North Carolina, Wilmington  
Explore virtual labs that model inquiry with cold viruses, zooming across the universe, and use touch technology to feel atoms and molecules.

**SESSION 20**

**Teaching Science to ELLs (Phys)**

*(Middle Level–High School) Conf. Room 3/4, Marriott Rivercenter*  
**Alan D. Dorado**, Unidad Educativa Monte Tabor Nazaret, Samborondon, Ecuador

Let me introduce you to a strategy that uses peer instruction and inquiry-based learning to facilitate learning science to English language learners.

**SESSION 21**

**Order of Magnitude Estimates in Urban Transportation (Env)**

*(General) Conference Room 6, Marriott Rivercenter*  
**Sean D. Johnson** ([seanjohnson@uchicago.edu](mailto:seanjohnson@uchicago.edu)) and **Dylan Hatt**, The University of Chicago, Ill.

Come learn about a classroom exploration of urban public transit built upon students' everyday experiences, order-of-magnitude estimates, and Google maps.

**SESSION 22 (two presentations)**

*(General) Salon A, Marriott Rivercenter*  
**Remote Operating Vehicles in Space and the Sea: Exploration Technology in Miniature (Gen)**

**Randi Wold-Brennon**, Hawaii Academy of Arts and Sciences, Pahoia

Learn how to partner with scientists so your students can modify robotics kits to sample ocean water, video moon-like terrains, and monitor critters in forests.

**Serious Games for Learning: WaterLife, Where Rivers Meet the Sea (Gen)**

**Peg Steffen** ([peg.steffen@noaa.gov](mailto:peg.steffen@noaa.gov)), NOAA National Ocean Service, Silver Spring, Md.

Interactive simulations can help teachers engage digital students with science content. See how NOAA and partner Montgomery Community College have translated estuary science into a serious game for middle school students.



## SESSION 23

**PDI Outdoor Science Pathway Session: Growing Curricular Inclusion in an Outdoor Classroom (Env)**

(Elementary–Middle Level) Salon F, Marriott Rivercenter  
**Darleen Horton**, Cane Run Elementary Environmental Magnet School, Louisville, Ky.

Go on a virtual tour of an outdoor classroom where learning comes alive through standards-based inquiry learning using the elements of the natural world.

## SESSION 24

**Exploring the 2012 ACS Guidelines and Recommendations for Teaching High School Chemistry (Chem)**

(Middle Level–High Sch./Supv.) Alamo Salon C, Marriott Riverwalk  
**Terri M. Taylor**, American Chemical Society, Washington, D.C.

**Roxana Allen** (*rallen@sjs.org*), St. John's School, Houston, Tex.

Emphasis will be placed on strategies for teaching high school chemistry. Come see how the 2012 ACS Guidelines and Recommendations for Teaching High School Chemistry are a useful resource for strengthening high school chemistry programs.

## SESSION 25

**Wriggling Diversity into the Classroom: Vermiculture as a Tool for Including Gender and Cultural Sensitivity Discussion (Bio)**

(General) Alamo Salon E, Marriott Riverwalk

**Christina N. Dragon** (*christina.dragon@gmail.com*), Johns Hopkins Bloomberg School of Public Health, Baltimore, Md. Inquiry based, scientific method driven, and guaranteed to keep class discussion lively! Worms work toward connecting students with big concepts like gender, diversity, and multiculturalism.

## SESSION 26

**Using Fiction to Teach Science Facts (Bio)**

(Middle Level–High School) Alamo Salon F, Marriott Riverwalk

**Emily A. Meyer** (*emeyer@regisjesuit.com*), Regis Jesuit High School, Girls Division, Aurora, Colo.

Students love stories—come hear ideas on how we have used movies, books, and magazine articles to engage students in the biology classroom.

## SESSION 28

**Solids: The Neglected “State” of Chemistry (Chem)**

(High School) Travis, Marriott Riverwalk

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

**Andrew G. Nydam** (*andrewnydam@hotmail.com*), Retired Educator, Olympia, Wash.

Use the “stuff” of the everyday world to make science relevant. Hands-on activities using solid materials (ceramics, metals, polymers) make concepts easier to teach/learn. Handouts!

**3:30–4:30 PM Workshops****Pulsating Variable Stars and the H-R Diagram****(Earth)**

(General) 001A, Convention Center

**Donna L. Young** (*donna@aavso.org*), NASA/SAO/CXC, Bullhead City, Ariz.

Plot pulsating variable stars on an Hertzsprung–Russell diagram to determine regions of instability where stars are transitioning from main sequence stars to giants and supergiants.

**NASA Triad: Bringing NASA Resources to the Secondary Science Classroom****(Earth)**

(Middle Level)

001B, Convention Center

**Ann E. Benbow** (*aeb@agiweb.org*) and **Colin Mably** (*cmably@aol.com*), American Geosciences Institute, Alexandria, Va.

Join us and hear about NASA Triad, a partnership among the American Geosciences Institute, NASA, and Arizona State University to bring NASA resources to U.S. secondary science teachers.

**The Little Spacecraft That Could—DID! MESSENGER Mission Accomplished (Earth)**

(Elementary—Middle Level) 002, Convention Center  
**Nancy Tashima** (*tashima@aloha.net*), Onizuka Space Center, Kailua-Kona, Hawaii  
MESSENGER ends its orbit of Mercury. The story it tells about this planet has been both surprising and inspiring. Find out what we learned!

**NASA's MMS Mission: Using iPads to Create Space Weather Forecasts (Earth)**

(Middle Level—High School/Informal) 101A, Convention Center  
**Carol Coryea** (*ccoryea@access.k12.wv.us*), Paw Paw (W.Va.) Schools

**Todd Ensign** (*todd.ensign@ivv.nasa.gov*), NASA IV&V Facility, Fairmont, W.Va.

Use iPads to download NASA heliophysics data allowing students to create space weather forecasts. Receive a STEM educational guide and learn how to build the MMS (Magnetospheric Multiscale) spacecraft with LEGOs®.

**The Foundation of Living Things: The Cell for Elementary Students (Bio)**

(Elementary—Middle Level) 208, Convention Center  
**Kerrie McDaniel**, Western Kentucky University, Bowling Green

Elementary teachers, increase your understanding of basic cell parts and gain strategies for helping your students understand the parts of the cell using hands-on activities.

**Super Science Stations (Gen)**

(Elementary) 213B, Convention Center

**Leta L. Vaughan** (*llvaughn@garlandisd.net*) and **Mary Beth Eager** (*meeager@garlandisd.net*), Garland (Tex.) ISD

**Karri L. Dawes** (*kldawes@garlandisd.net*), Nita Pearson Elementary School, Rowlett, Tex.

Get ideas for organizing stations and for using them in the classroom to engage students and maximize science learning.

**Reading and Writing Science Using Exciting Polymer Activities and Children's Literature (Gen)**

(Preschool—Middle Level) 215, Convention Center

**Cora S. Salumbides**, Jefferson Union High School District, Daly City, Calif.

Engage in hands-on activities using polymers. Effective reading and writing techniques will be introduced while providing samples of actual student work done in the classroom. You'll be encouraged to share your favorite reading and writing techniques applicable to the polymer activities introduced in this workshop.

**Show Your True Colors! (Phys)**

(Elementary) 216A, Convention Center

**Gary F. Benenson** (*benenson@ccny.cuny.edu*), City College of New York, N.Y.

**Donna Johnson** (*djohnson11@schools.nyc.gov*), P.S. 021 Crispus Attucks School, Brooklyn, N.Y.

**Cherubim Cannon** (*cherubimcannon@aol.com*) and **Shawndel Stewart** (*msstewart3@gmail.com*), P.S. 005 Dr. Ronald McNair, Brooklyn, N.Y.

Use LEDs to add and subtract colors! Learn about circuits, optics, and elastic energy as you explore these simple, inexpensive methods of color mixing.

**Reaching Underserved Student Populations Through an Inquiry-based Discrepant Event Approach (Gen)**

(Elementary—Middle Level) 217A, Convention Center

**John J. Zenchak** (*jjzenchak@noctrl.edu*) and **Mary Jean Lynch** (*mlynch@noctrl.edu*), North Central College, Naperville, Ill.

Underserved student populations can benefit from a unique discrepant event approach, followed by a structured exploration activity. Experience the entire process that can engage students.

**Finding Time to Teach the Science Through Integration and PBL (Gen)**

(Elementary) 217D, Convention Center

**Sharon Schleigh** (*sharon.schleigh@purduecal.edu*), Purdue University Calumet, Hammond, Ind.

Review the teaching of science as an integrated learning event using a Project Based Learning (PBL) approach. Critique classroom examples and engage in a lesson that promotes science through integration in the elementary classroom.

**NESTA Session: Let's Get Well Grounded! (Earth)**

(Elementary—High School) Ballroom A, Convention Center

**Roberta M. Johnson** (*rmjohnsn@nestanet.org*), NESTA and University at Albany, Boulder, Colo.

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

This NESTA workshop presents multiple exemplary activities for the geology classroom that bring fundamental concepts in Earth science to life for your students. Handouts!

**DuPont Session: Linking Home and School with P.A.S.S. (Portable Affordable Simple Science)****(Gen)***(Preschool–Elementary)**Bonham B, Grand Hyatt***Renee G. O’Leary**, Holy Angels School, Newark, Del.**Peggy Vavalla** (*vavallme@comcast.net*), DuPont, Wilmington, Del.

Discover simple multisensory hands-on early childhood/elementary explorations (preK–2) in zippered plastic bags. Walk away with sample lesson plans, bags, and follow-up.

**All Systems Checked!****(Gen)***(Middle Level)**Bonham C, Grand Hyatt***Regina B. Snyder**, Driscoll Middle School, Corpus Christi, Tex.**Jane Lee-Rhodes** (*jane.lee-rhodes@ccisd.us*), Kaffie Middle School, Corpus Christi, Tex.

Learn how to integrate graphic organizers and hands-on activities, focusing on basic ideas about systems, order, and organization. Free session booklet and door prizes.

**NMLSTA Session: Classroom Activities to Highlight the Eight Essential Practices of Science and Engineering****(Gen)***(Middle Level)**Bonham E, Grand Hyatt***Mary Lou Lipscomb** (*lipscomb@imsa.edu*) and **Liz Martinez** (*emartinez@imsa.edu*), Illinois Mathematics and Science Academy, Aurora

The NRC *Framework* considers eight practices as essential. Engage in activities and relate them to the practices and 21st-century skills.

**The Science–Social Studies Connection: Warm-Ups for Exploring Global Issues****(Gen)***(General)**Bowie B, Grand Hyatt***Linda C. Jones** (*lcjones@coe.ufl.edu*), University of Florida, Gainesville

Learn how to use inexpensive, time-efficient, and engaging whole-class and small group lesson warm-up activities to infuse a global perspective into your science classes.

**My-Pad, Your-Pad. Why-Pad? iPad!****(Chem)***(General)**Lone Star Ballroom F, Grand Hyatt***Joshua J. Marsh**, **Martha M. Day** (*martha.day@wku.edu*), and **Taylor Clements** (*taylor.clements@jefferson.kyschools.us*), Western Kentucky University, Bowling Green

Presider: Martha M. Day

Experience the benefits and application of using new and advanced technology in a mock paper-free classroom.

**Bird’s Eye View: Exploring Human Impacts on the Environment Across the Globe Using Google Earth****(Env)***(Middle Level–High School)**Republic B, Grand Hyatt***James G. MaKinster** (*makinster@hws.edu*), Hobart and William Smith Colleges, Geneva, N.Y.**Nancy Trautmann** (*nmt2@cornell.edu*), Cornell Lab of Ornithology, Ithaca, N.Y.**Carol Burch** (*cburch129@gmail.com*), Hannibal High School, Hannibal, N.Y.

Bring your laptop to explore paired current and historical satellite imagery in Google Earth, see landscape change over time, and predict impacts on biological communities.

**Iron Teacher****(Gen)***(General)**Conference Room 16, Marriott Rivercenter***Sean Herberts and Jessica Krim** (*jesscakrim@gmail.com*), Southern Illinois University, Edwardsville

Are you game for a competition designed to test your creativity in designing an inquiry lesson around three mystery objects within a limited amount of time?

**SYM-2 Follow-Up Session: Classroom Lessons with Monarchs****(Env)***(Elementary–High School)**Conf. Room 17/18, Marriott Rivercenter*  
**Grant Bowers and Kelly Nail**, University of Minnesota, St. Paul

Presider: Jim O’Leary, Maryland Science Center, Baltimore  
After a brief overview of the monarch’s life cycle, we will demonstrate different activities and lessons involving monarchs. Take-home instructions will be available!

**PDI WISP Pathway Session: Science-related Research in the Middle School****(Gen)***(Elementary–Middle Level)**Salon L, Marriott Rivercenter***Rebecca Cook** (*rcook@hazelwoodschoools.org*), Hazelwood West Middle School, Hazelwood, Mo.

Attention will be paid to effective instructional practices that help students develop research skills such as searching, assessing, and using relevant and reliable science information.

**Stretch Your Digital Dollar: Affordable Strategies for Integrating Cell Phones into the Classroom (Gen)**

(Middle Level–High School) *Salon M, Marriott Rivercenter*  
**Katy Scott** (*kscott@mbayaq.org*), Monterey Bay Aquarium, Monterey, Calif.

Donated and student cell phones are a powerful no-cost solution to technology integration. Combined with free web-based applications, they provide a more interactive learning experience.

**Simulating Chemical Reactions with Stop-Motion Animation (Chem)**

(Middle Level–High School) *Alamo Salon A, Marriott Riverwalk*  
**Dan Ratliff**, Breck School, Minneapolis, Minn.

Using stop-motion animation and video editing, learn to engage your students in a dynamic hands-on model of a chemical reaction.

**Evidence of Evolution: Using Real Fossil Data from the Deep Sea (Bio)**

(High School) *Alamo Salon D, Marriott Riverwalk*

**Sharon Katz Cooper** (*scooper@oceanleadership.org*), Deep Earth Academy, Consortium for Ocean Leadership, Washington, D.C.

**Heath J. Mills** (*hmills@ocean.tamu.edu*), Texas A&M University, College Station

Investigate super high-resolution fossil evidence, spanning tens of millions of years, with engaging data that are hard to dismiss and super fun to work with!

**3:30–4:30 PM Exhibitor Workshop**

**Active Chemistry: Ahead of Its Time in Capturing the Essence of NGSS and STEM (Chem)**

(Grades 6–12) *205, Convention Center*

Sponsor: It's About Time

**Arthur Eisenkraft**, 2000–2001 NSTA President, and UMass Boston, Mass.

Before NGSS or STEM, Dr. Arthur Eisenkraft recognized the need and developed this proven program that can help you implement STEM and the essence of the Next Generation Science Standards. See the Engineering Design Cycle and learn how chemists, teachers, and science educators designed a true project-driven course for the next generation of students of all levels.

**3:30–5:00 PM Meeting**

**SCST Business Meeting**

*Bowie C, Grand Hyatt*

**3:30–5:00 PM Reception**

**GEICO/NSTA Member Orientation Reception**

*Lone Star Ballroom D, Grand Hyatt*

Your “Total Membership Experience” starts with this conference but continues all year long as you share your thoughts, lend your voice, and become a true partner in science education with your professional membership association! Join us for an introduction to your membership experience! This is an exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments!

**3:30–5:30 PM Presentation**

**SESSION 1**



**NSTA/NSELA Issues Forum**

**(Gen)**

(General)

*Lone Star Ballroom A, Grand Hyatt*

**Elizabeth Allan** (*eallan@uco.edu*), NSELA President, and University of Central Oklahoma, Edmond

**Heidi Schweingruber**, National Academy of Sciences, Washington, D.C.

**Stephen Pruitt**, Achieve, Inc., Washington, D.C.

**Vicki Massey** (*gvmassey@cox.net*), NSTA Director, District XIV, and Mesa (Ariz.) Public Schools

**Patricia Simmons**, NSTA Retiring President, and North Carolina State University, Raleigh

**John Kriekard** (*jkriekard@msn.com*), Science Foundation Arizona, Phoenix

**Jacqueline R. Smalls** (*jacquelinesmall@hotmail.com*), Langley STEM Education Campus, Washington, D.C.

The forum will begin with a panel of experts sharing their perspectives on transitioning to NGSS and identifying ways to support and enhance change. Participants will be asked to provide input. Panelists include representatives from school administration and higher education, curriculum specialists, and educators. Steven Pruitt and Heidi Schweingruber will provide a national policy perspective.

**4:00–4:30 PM Presentation**

**SESSION 1**



**Apreniendo Ciencias: Acquiring and Expanding Scientific Language and Literacy (Phys)**

(Elementary)

*201, Convention Center*

**Maria-Antonieta Avila** and **Cynthia E. Lima** (*cynesperanza@yahoo.com.mx*) and The University of Texas at Austin

The purpose of this study is to highlight how scientific literacy is fostered in elementary bilingual classrooms.



**4:00–5:30 PM Exhibitor Workshops****Take the Plunge with the New Project WET 2.0****(Env)***(Preschool)*

006A, Convention Center

Sponsor: Project WET Foundation

**Laurina Lyle** ([laurina.lyle@projectwet.org](mailto:laurina.lyle@projectwet.org)), Project WET Foundation, Bozeman, Mont.

Have you experienced Project WET 2.0? Project WET Foundation released the *Curriculum and Activity Guide 2.0* in 2011 with new activities and free resources through our *Portal* and *Discover Water* websites. Now offering online courses, Project WET will debut water-related webinars this summer. Come explore our new materials firsthand with refreshments.

**Make Learning Part of the Grade** **(Gen)***(Grades 9–12)*

006B, Convention Center

Sponsor: Pearson

**Jocelyn McRae**, Pearson, Boston, Mass.

Mastering is the most effective and widely used online assessment and tutorial system for AP, honors, and elective science subjects. Mastering coaches students through personalized learning experiences while collecting diagnostic information to support data-driven, just-in-time teaching. Find out how Mastering—Pearson's powerful online homework and tutorial system—can help boost student performance in honors and AP courses.

**Equip Your iPad or Android Tablet for Science with SPARKvue® HD, a Full-featured Science Application** **(Gen)***(Grades 6–8)*

006C, Convention Center

Sponsor: PASCO scientific

**Presenter to be announced**

Explore PASCO's science application for the iPad and Android tablet. SPARKvue HD offers a suite of display and analytical tools, all within an integrated learning environment—including reflection prompts, journaling, and more. The app also supports the growing collection of SPARKlabs, integrating rich content with live data collection and analysis.

**STEM: Air Bags—Project-based Chemistry Activities** **(Chem)***(Grades 9–12)*

006D, Convention Center

Sponsor: PASCO scientific

**Presenter to be announced**

Participate in an engineering design challenge that integrates PASCO probeware technology in this hands-on workshop. These project-based activities incorporate the engineering

process to creatively engage students while addressing chemistry content. The chemistry concepts uncovered during the activities will aid in the design, testing, and evaluation of student-built air bags.

**Machines and Mechanisms in the Classroom and Beyond** **(Phys)***(Grades 3–5)*

007A, Convention Center

Sponsor: LEGO Education

**Jessica Pope**, LEGO Education, Pittsburg, Kans.

Learn how the LEGO Education Simple and Motorized Mechanisms set engages students to build and explore machines and mechanisms, investigate motorized machines, calibrate and capture wind, and study gearing mechanisms. In this workshop, participants will build a hammer model using LEGO® bricks, complete a Bricks in Space activity, and discuss curriculum connections for the classroom.

**Physical Science with iPads, Smartphones, and Technology That Your Students Use Every Day** **(Phys)***(Grades 8–College)*

007B, Convention Center

Sponsor: Arbor Scientific

**Ben Pearson**, Arbor Scientific, Ann Arbor, Mich.

Use NeuLog™ sensors to perform experiments to cover the fundamental physical science concepts, such as forces, motion, light, chemical reactions, and more. Each experiment will collect and stream digital data to be viewed and analyzed on smartphones, tablets, and computers. The experiments and demonstrations will touch on STEM and physical science core ideas being incorporated into the Next Generation Science Standards. Drawing for a set of NeuLog sensors.

**Exploring Circuits by Hacking Toys** **(Phys)***(Grades 4–12)*

007C, Convention Center

Sponsor: KidWind Project

**Joseph T. Rand** ([asia@kidwind.org](mailto:asia@kidwind.org)) and **Michael Arquin** ([asia@kidwind.org](mailto:asia@kidwind.org)), KidWind Project, St. Paul, Minn.

Figure out how circuits, sensors, and gears work by looking at the guts of sound and battery-operated toys. Hack into the toys and make them produce sounds and motions the manufacturer never intended. This is a great workshop for teachers looking for way to introduce basic circuitry, motion, and gears into the classroom in a way the students are sure to enjoy!

**Homeostasis and Diabetes (Bio)**

(Grades 6–12) 007D, Convention Center

Sponsor: Science Take-Out

**Susan Holt** (contact@sciencetakeout.com), Science Take-Out, Pittsford, N.Y.

Experience two simple hands-on activities. In *Homeostasis*, we'll use lab simulations, graphic organizers, and analogies to understand how negative feedback mechanisms are used to maintain homeostasis. In *Diabetes*, we'll analyze simulated blood plasma samples collected during a glucose tolerance test to determine if your patient has Type 1 or Type 2 diabetes.

**Paleoclimate and How It Helps Us Understand Current Climate Change—Featuring HHMI's New DVD *Changing Planet: Past, Present, Future* (Env)**

(Grades 9–College) 008A, Convention Center

Sponsor: Howard Hughes Medical Institute

**Chris Hedeem**, Oregon City High School, Oregon City, Ore.

**Mark Nielsen**, Howard Hughes Medical Institute, Chevy Chase, Md.

The story of Earth's past climate is written in the rocks. Take a trip with us into the past to understand how—and why—climate has changed throughout Earth history. We will present classroom-ready resources from HHMI's latest holiday lectures that illustrate Earth's natural mechanism for modulating climate and the chemical signals that tell us about past climate. Understanding what has happened in the past gives us an important perspective for understanding current climate change and what the future may hold. Participants will be among the first to receive HHMI's latest *Holiday Lectures on Science* DVD.

**Supporting Independent Student Research and Successfully Navigating SSP Competitions (Gen)**

(Grades 6–12) 008B, Convention Center

Sponsor: Society for Science & the Public

**Michele Glidden** (sciedu@societyforscience.org), **Janet Raloff** (sciedu@societyforscience.org), **Sharon Snyder** (sciedu@societyforscience.org), and **Caitlin Sullivan** (sciedu@societyforscience.org), Society for Science & the Public, Washington, D.C.

Join us for an overview of the ins and outs of Society for Science & the Public competitions, including the Intel International Science and Engineering Fair, Intel Science Talent Search, and Broadcom MASTERS. We'll have time for Q&A and a discussion on how SSP can better support teachers. We'll also showcase *Science News for Kids* articles matched with curriculum units.

**Experience the Future of Digital Science from National Geographic and Achieve3000® (Gen)**

(Grades 6–8) 101B, Convention Center

Sponsor: Achieve3000

**Kathy Warnert** (kathy.warnert@achieve3000.com), Achieve3000, Lakewood, N.J.

Experience how a digital middle school science program can extend the day, improve reading and science scores, and engage all students through interactive National Geographic content. This dynamic program is delivered at four Lexile® reading levels and poised to meet the highly anticipated Next Generation Science Standards.

**It's Off to the Races with K'NEX® Education's Forces, Energy, and Motion Set! (Phys)**

(Grades 5–9) 102B, Convention Center

Sponsor: K'NEX Education

**Presenter to be announced**

Investigate potential and kinetic energy as well as force and motion with K'NEX cars. Gravity, rubber bands, springs, wind, battery motors, and flywheels will power models as we explore complex STEM concepts. How will your car perform? How would you redesign your model to make it a first-place car? Strategies that empower students to design and complete their own experiments from the teacher's guide will be emphasized, and standards-aligned STEM concepts will be stressed. Drawing for a K'NEX Education Forces, Energy, and Motion set!

**How to Design a Safe and Efficient Science Laboratory from Flinn (Gen)**

(Grades 6–College) 103A, Convention Center

Sponsor: Flinn Scientific, Inc.

**Greg Chyson** (gchyson@flinnsci.com), Flinn Scientific, Inc., Batavia, Ill.

Get answers to all your laboratory design questions! We will share design priority tips and safety information gathered from years of experience helping science teachers plan their laboratory construction remodeling projects! You'll learn what features to include in your laboratories and what common mistakes to avoid.

**Fast and Furious—Measuring Speed (Phys)***(Grades 6–8)* 203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

In this activity from the SEPUP middle level series, *Issues and Physical Science*, which explores Newton's laws in a context of motor vehicle safety, participants are challenged to design an investigation to measure the speed of a moving cart as a function of its release point from a curved ramp. Participants will carry out the experiment, discuss the role of speed in automobile collisions, and conclude by examining distance versus motion graphs.

**Forces and Motion (Phys)***(Grades K–9)* 204A, Convention Center

Sponsor: Artec Educational

**Paul Pooler**, Artec Educational, Torrance, Calif.

Get blown away with Artec Educational as you explore the properties of air, air pressure, forces, and motion. Engage your students with vacuums, air-powered cars, and affordable and easy-to-use materials sure to peak their curiosity. Activities link to the highly anticipated Next Generation Science Standards. Handouts and take-home activities provided.

**More STEM Challenges for the Classroom, Part 2 (Phys)***(Grades 4–8)* 204B, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Michael DiSpezio**, Science Writer and Educational Consultant, North Falmouth, Mass.

Join Michael DiSpezio for an additional assortment of inexpensive and easily repeatable classroom STEM challenges. Engage in construction of a navigational quadrant, straw-n-clip truss, and working model of a flushing toilet. You will even construct your own musical instrument from a set of modified drinking straws. Come join in and expand your engineering repertoire with these additional STEM challenges for the classroom.

**Picking Apart the Owl Pellets' Potential (Bio)***(Grades K–8)* 206A, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Owl pellets are a simple product used to teach topics such as food chains, mammalian anatomy, ecology, and more! Join us for this engaging hands-on workshop as we dissect owl pellets, explore Carolina's Owl Pellet app, and share ways to incorporate this extremely popular product into your lessons.

**The Common Core + Mathematics + Next Generation Science (Gen)***(Grades K–5)* 206B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Learn how to foster elementary students' literacy growth and strengthen their mathematical knowledge. This workshop will focus on Common Core State Standards for math and how to integrate them into inquiry-based science instruction.

**Decoding Human Genetics with Inquiries in Science® (Bio)***(Grades 9–12)* 207B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Help your students solve the mystery of genetics using hands-on guided inquiry learning. Improve students' understanding of abstract concepts such as genetic inheritance, nucleic acids, genetic disorders, and biotechnology. The Inquiries in Science Biology Series makes teaching challenging topics effortless. Free teacher materials and door prizes!

**Discovery Education Science Techbook—Myths Busted (Gen)***(Grades K–12)* 209, Convention Center

Sponsor: Discovery Education

**Duane Waber**, Discovery Education, Silver Spring, Md.

"My classroom isn't ready for digital resources." Busted! Teachers have CONFIRMED that Discovery Education's Techbook is right for most classrooms. Learn how Techbook engages EVERY student and has been implemented in both classrooms with only one computer to those with a computer for each student.

**Chemistry In-the-Bag (Chem)***(Grades 5–12)* 211, Convention Center

Sponsor: Ward's Science

**Paul Schneeberger**, VWR Education, Rochester, N.Y.

Learn how to easily incorporate fun and exciting inquiry activities into your classrooms using our In-the-Bag Inquiry Activity series. These easy-to-perform demonstrations are designed to engage students with guided inquiry exercises to help further explore and understand the concept. You'll perform three different demonstrations and two learning activities.



**Create a Digital WiFi Classroom.... Using the New Moticam X and Moticonnect App!** (Gen)

(Grades 7–College) 212B, Convention Center

Sponsor: Swift Optical Instruments, Inc.

**David Doty** ([david@swiftoptical.com](mailto:david@swiftoptical.com)), Swift Optical Instruments, Inc., Schertz, Tex.

Go digital...using STEM and WiFi technology. Transform your labs, lesson plans, and activities into digital formats. Engage your students by incorporating Motic software, the new WiFi Moticam X, and Swift microscopes into your lessons. Learn how to integrate digital WiFi technology, student assessment, and motivation into your current curriculum. BYOD!

**3-2-1 Blast Off!** (Gen)

(Grades 3–9) 214A, Convention Center

Sponsor: Educational Innovations, Inc.

**Tami O'Connor**, Educational Innovations, Inc., Bethel, Conn.

Get a burst of energy! Join us for things that go bump in the day! Perfect for teaching energy or Newton's laws to elementary and middle school students. Door prizes and freebies!

**Light and Optics: A Series of EnLIGHTening Experiments!** (Phys)

(Grades 6–12) 214D, Convention Center

Sponsor: CPO Science/School Specialty Science

**Erik Benton**, CPO Science/School Specialty Science, Nashua, N.H.

Experience CPO's Optics with Light and Color kit with LED flashlights, a laser, lenses, a mirror, and more. Try color mixing, relate it to human vision, and examine different spectra. We make studying light exciting! Take away STEM activities and an understanding of how to apply the Engineering Cycle in science classes.

**5:00–5:30 PM Presentations**

**SESSION 1**



**Designing and Developing STEM Collaborative Field Studies** (Gen)

(General) 207A, Convention Center

**Thomas R. Baker** ([trbaker@gmail.com](mailto:trbaker@gmail.com)), Esri, Leawood, Kans.

Come discover how to use free online resources originally conceived for the Pathfinder Science collaborative network, now built and modernized to support STEM collaborative inquiry with student mobile devices.

**SESSION 2**

**NASA's Know Your Earth Project** (Earth)

(General) 212A, Convention Center

**Brian A. Campbell** ([brian.a.campbell@nasa.gov](mailto:brian.a.campbell@nasa.gov)), Sigma Space Corp., Wallops Island, Va.

NASA's Know Your Earth Project is vital to informing the public about how Earth works and how NASA research increases our understanding of our home planet.

**5:00–5:45 PM Reception**

**Shell Reception**

(By Invitation Only)

Salon J/K, Marriott Rivercenter

**5:00–6:00 PM Presentations****SESSION 1****A Different Approach to Earth Science Education (Earth)***(Middle Level–High School)* 003A, Convention Center**Kimberly Warschaw** (*kimberly.warschaw@apsva.us*) and **Michelle Harris** (*michelle.harris@apsva.us*), Wakefield High School, Arlington, Va.

Come learn how to teach Earth science using a spiraling curriculum that has been shown to help multiple learning styles. Handouts!

**SESSION 2****CTAG: What Is It? (Gen)***(General)* 101A, Convention Center

**Rajeev Kumar Swami** (*chem276@yahoo.com*), NMLSTA President, and Central State University, Wilberforce, Ohio The State of Ohio implemented Closing the Achievement Gap (CTAG) to help African-American men achieve proficiency in science and other core subjects. This session focuses on the results from the two-year program and describes the collaboration of state representatives, on-site coordinators, and core content teachers at schools and universities involved in this effective initiative.

**SESSION 3****Photosynthesis: The Musical! (Bio)***(Middle Level–High School)* 201, Convention Center**Christine Hart** (*chart@k12mcsd.net*), Monticello High School, Monticello, N.Y.**Katherine Hart Dunn**, Highlands Middle School, White Plains, N.Y.**Katherine A. Morrow**, Sullivan County B.O.C.E.S, Liberty, N.Y.

In this *noteworthy* session, you'll walk away with an entertaining and engaging technique to teach photosynthesis (photolysis and the carbon cycle) to diverse learners through a fun, interactive musical.

**SESSION 4****Growing a Garden of Learners (Bio)***(Preschool–Elementary)* 202A, Convention Center**Julie V. McGough** (*mrmaoogoolie2@att.net*), Valley Oak Elementary School, Fresno, Calif.

Prepare the environment, sow some seeds of thought, and dig deeper to understand how plants work while integrating the Common Core State Standards!

**SESSION 5** (two presentations)*(Elementary–Middle Level)* 216B, Convention Center**Integrating Science and Poetry with English Language Learners (Gen)****Jesse Gainer** (*jj51@txstate.edu*), Texas State University, San Marcos**Nancy Valdez-Gainer** (*nancy.valdez-gainer@austinisd.org*), Blazier Elementary School, Austin, Tex.

Join us as we highlight the learning potential for English language learners when science content is integrated with poetry and expository writing instruction.

**The Nature Classroom: Your Door to Integrating Science and More (Gen)****Ingrid Stressenger** (*ingridstressenger@gmail.com*), Pond Cove Elementary School, Cape Elizabeth, Maine

Nature provides the perfect venue for integration. Science, art, and poetry unite in a rich and engaging single or yearlong unit in any setting.

**SESSION 6** (two presentations)*(Middle Level)* Bonham C, Grand Hyatt**Interdisciplinary Unit Focusing on Water Rights and Access for Middle-Schoolers (Gen)****Amanda Cortese** (*acortese@newworldprep.org*) and **Tara Brennan** (*tararosebrennan@gmail.com*), New World Preparatory Charter School, Staten Island, N.Y.**Tracy Hogan**, Adelphi University, Garden City, N.Y.**John A. Craven** (*jraven@fordham.edu*), Fordham University, New York, N.Y.

Address individual needs of middle school students through an interdisciplinary unit focusing on water rights and access. Join us as we share our interdisciplinary curriculum in which students explore access to safe clean drinking water while developing their skills in argumentation and reasoning.

**A Little GPS Goes a Longitudinal Way: Using Field-based Apps to Study Earth's Magnetic Field (Gen)****Kathryn Buckley** (*keb42@georgetown.edu*), Robert H. Adams Middle School, Holliston, Mass.

Use GPS apps, Google Earth, and a compass to investigate properties of Earth's magnetic field and apply this data to ecological and geographical studies.

**SESSION 7**

**Teaching Through the Windshield: Using Embedded Formative Assessments in the Classroom (Gen)**

(Elementary–High School) *Bowie B, Grand Hyatt*

**Peggy K. Perdue** (*peggy\_perdue@fcasd.edu*), Dorseyville Middle School, Pittsburgh, Pa.

Keep your students moving forward using these easy, quick, low-cost assessment techniques. Walk away with more than 20 fun ways to check student understanding!

**SESSION 8**

**AP Chemistry Activities for Conceptual Understanding (Chem)**

(High School–College) *Crockett A, Grand Hyatt*

**Deanna M. Cullen** (*deannacullen@whitehallschools.net*), Whitehall High School, Whitehall, Mich.

Introduce AP Chemistry topics like electrochemistry, kinetics, and equilibrium using common experiences with formative assessments that identify misconceptions and provide a common reference for discussion.

**SESSION 9** (two presentations)

(General) *Crockett B, Grand Hyatt*

**Science Notebooks—Moving from Mechanical to Insightful Use (Gen)**

**Lori Fulton** (*fultonl@hawaii.edu*), University of Hawaii at Manoa, Honolulu

When used insightfully, science notebooks help students develop scientific understandings. Let's examine strategies that help teachers move from mechanical to insightful use.

**Argument Writing in the Science Classroom (Gen)**

**Crystal L. Marsh** and **Marsha S. Wallace** (*marswall@hotmail.com*), Salk School of Science, New York, N.Y.

Find out how to guide your students through writing successful persuasive papers and how to organize collegial conversations in your classroom.

**SESSION 10**

**Enhancing Teacher Leaders in Elementary Science (Gen)**

(Elementary) *Crockett C, Grand Hyatt*

**Chris T. Campbell** (*ccampbell@lincolnschools.org*), NSTA Director, District VII, and Einstein Fellow, National Science Foundation, Arlington, Va.

Teacher leaders can have a significant impact on student learning and school improvement. Learn reasons for building a leadership cadre at the elementary level and practical advice for training and valuing teacher leaders.

**SESSION 11**

**An Arctic Connection: A Teacher Exchange Program Among U.S. and Swedish Educators (Env)**

(General) *Crockett D, Grand Hyatt*

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

A chance meeting at an NSTA conference developed into a successful exchange program among Swedish and U.S. teachers. Come hear about its focus—sustainable development and environmental education.

**SESSION 12**

**Start Your Own STEM Center in Your Elementary Classroom! (Gen)**

(Elementary) *Lone Star Ballroom E, Grand Hyatt*

**Karl Topper** (*karltopper@gmail.com*), Dillon Valley Elementary School, Dillon, Colo.

Learn how you can transform your classroom into a STEM learning center in which students become excited to learn. You will gain insights on how this model is used to support a literacy-based STEAM (Science, Technology, Engineering, Arts, and Mathematics) program—LSTEAM.

**SESSION 13**

**The Crazy Fun of Giving 1,200 Teenagers iPads (Gen)**

(General) *Lone Star Ballroom F, Grand Hyatt*

**Lara L. Sharp** (*lara.sharp@lwcharterschools.com*), Lake Wales High School, Lake Wales, Fla.

Learn how my school gave every student an iPad and how we used them in class.

**SESSION 14**

**Standards-based Grading That Works (Gen)**

(Supervision/Administration) *Presidio C, Grand Hyatt*

**Dan Carroll** (*thedancarroll@hotmail.com*), Yorktown High School, Arlington, Va.

Find out how to revolutionize your grading system to keep students motivated and empower them to take control of their learning while you keep administrators and parents happy.



## SESSION 15

**NSTA Press® Session: Five E(z) Guidelines for Designing Research-informed Science Lesson Sequences (Earth)**

(Elementary)

Texas Ballroom D, Grand Hyatt

**Thomas P. O'Brien** ([tobrien@binghamton.edu](mailto:tobrien@binghamton.edu)), Binghamton University, Binghamton, N.Y.

**William Banko** ([wbanko@knowingscience.com](mailto:wbanko@knowingscience.com)), Knowing Science LLC, Armonk, N.Y.

Experience an engaging 5E (Engage, Explore, Explain, Elaborate, and Evaluate) cycle—Metric Measurement, Models, and Moon Matters—that also explores the analogy between the work of scientists and K–5 teachers.

## SESSION 16

**Investigating Climate Change Issues with Google Earth and Web-based Activities (Env)**

(General)

Texas Ballroom E, Grand Hyatt

**Alec M. Bodzin** ([amb4@lehigh.edu](mailto:amb4@lehigh.edu)), **David Anastasio**, **Dork O. Sahagian**, **Chris Dempsey**, and **Denise Bressler**, Lehigh University, Bethlehem, Pa.

**Lori Cirucci** ([lcirucci@beth.k12.pa.us](mailto:lcirucci@beth.k12.pa.us)), Broughal Middle School, Bethlehem, Pa.

Learn about inquiry-based activities that incorporate Google Earth and web-based tools to investigate local and global environmental issues related to climate change.

## SESSION 17 (two presentations)

(General)

Salon B, Marriott Rivercenter

**Mobile Phone and iPad Apps: Engaging Students in Science and Engineering Through Gaming (Phys)**
**Mariana Rutigliano**, Iridescent, Los Angeles, Calif.

Gaming grabs students' interest in STEM. Hear how Iridescent is using phone and iPad apps to teach complex STEM topics to students worldwide.

**Collaborative Connections Among Physical Science, Math, and Engineering (Phys)**
**Katheryn Kennedy** ([katheryn.kennedy@stevens.edu](mailto:katheryn.kennedy@stevens.edu)), Stevens Institute of Technology, Hoboken, N.J.

Explore a physical science lesson with related engineering challenges that engages elementary and high school teams in content, inquiry, collaboration, and other 21st-century skills.



## SESSION 18

**Incorporate the History of Chemistry into Your Teaching with the New PBS Television Program *Mystery of Matter: Search for the Elements!* (Chem)**

(Middle Level—College)

Alamo Salon B, Marriott Riverwalk

**Christine Brown** ([cvbrown@edc.org](mailto:cvbrown@edc.org)), Education Development Center, Inc., Waltham, Mass.

Preview a new PBS program about the history of chemistry and explore how to use it to engage students and deepen their scientific understanding.

## SESSION 19

**Frog's Blood vs. Human Blood: Comparing RBC as a Means to Understand Cellular Respiration and SA/V (Bio)**

(High School)

Alamo Salon F, Marriott Riverwalk

**Michael J. Lazaroff** ([mjvlazaroff@gmail.com](mailto:mjvlazaroff@gmail.com)), Staples High School, Westport, Conn.

Students compare RBC under the microscope and discover connections to SA/V, cellular respiration, endothermic and ectothermic metabolisms, and the evolution of body systems.

## SESSION 20

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

(High School)

Travis, Marriott Riverwalk

**Debbie Goodwin** ([nywin@hotmail.com](mailto:nywin@hotmail.com)), Chillicothe High School, Chillicothe, Mo.

**Andrew G. Nydam** ([andrewnydam@hotmail.com](mailto:andrewnydam@hotmail.com)), Retired Educator, Olympia, Wash.

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

## 5:00–6:00 PM Workshops

### Teaching Climate Science Through Data and Visualizations (Earth)

(Informal Education) 001A, Convention Center

**Frank Niepold** ([frank.niepold@noaa.gov](mailto:frank.niepold@noaa.gov)), NOAA, Washington, D.C.

**Gary Randolph** ([randolph@globe.gov](mailto:randolph@globe.gov)), **Julie S. Malmberg** ([malmberg@globe.gov](mailto:malmberg@globe.gov)), and **Jessica N. Mackaro** ([jmackaro@globe.gov](mailto:jmackaro@globe.gov)), The GLOBE Program, Boulder, Colo.

Engage students in research and exploration of Earth system science, specifically focused on climate, using data and visualizations available through NASA, NOAA, CLEANet, and GLOBE websites.

### Discovering Air Quality in Your Area Using NASA Data Visualization Tools (Earth)

(Middle Level–High School) 001B, Convention Center

**Preston M. Lewis, Jr.** ([preston.lewis@nasa.gov](mailto:preston.lewis@nasa.gov)), NASA Langley Research Center, Hampton, Va.

What's in the air we breathe? This workshop focuses on integrating advanced technologies to provide students with experience working with authentic air quality data.

### Dust Hunt! Modeling How Stars and Planets Form (Earth)

(Elementary–Middle Level) 002, Convention Center

**Keely D. Finkelstein** ([keelyf@astro.as.utexas.edu](mailto:keelyf@astro.as.utexas.edu)), The University of Texas at Austin

Perform hands-on activities involving models of how planets and stars form, and engage in an investigation of dust and how it is a vital ingredient of the universe and to life itself. Receive a printed copy of the NASA-supported StarDate “The Solar System.”

### ✓ Photographs for Assessment—“Take a Picture When...”: Digital Photography Makes It Easy to Engage Elementary Students in Assessment (Gen)

(Preschool–Middle Level) 202B, Convention Center

**Phyllis Katz** ([pkatz15@gmail.com](mailto:pkatz15@gmail.com)), Retired Educator, Silver Spring, Md.

This workshop will give participants experience in creating prompts and using a sample assessment procedure for both student- and teacher-generated digital photographs.

### Making Science Meaningful with Mealworms (Bio)

(Elementary) 208, Convention Center

**Tracey K. Graham** ([indiansprings18@yahoo.com](mailto:indiansprings18@yahoo.com)), Westgate Elementary School, Columbus, Ohio

Use mealworms in the classroom to engage students and learn a lot of science in the process!

### The Science Solution in the Literacy Block (Gen)

(Elementary) 213B, Convention Center

**Pamela S. Bauser** ([pam.bauser@ketteringschools.org](mailto:pam.bauser@ketteringschools.org)), **Holly Clark** ([holly.clark@ketteringschools.org](mailto:holly.clark@ketteringschools.org)), **Debbie Morton**, and **Rachel Williams** ([rachel.williams@ketteringschools.org](mailto:rachel.williams@ketteringschools.org)), Southdale Elementary School, Kettering, Ohio

Be part of an interactive inquiry lesson. Learn how to infuse science into the balanced literacy block using mentor texts to impact student writing.

### Connecting Science, Technology, and Engineering (Gen)

(Elementary–Middle Level) 215, Convention Center

**Karen E. Johnson** ([karen.johnson@adams12.org](mailto:karen.johnson@adams12.org)) and **Jessica A. Noffsinger** ([jessica.noffsinger@adams12.org](mailto:jessica.noffsinger@adams12.org)), STEM Magnet Lab School, Northglenn, Colo.

Find out how to integrate engineering and technology into your science curriculum. Leave with resources of sample activities, curricula, rubrics, and resources that foster the integration of STEM at upper elementary and middle grades.

### Physical Science, Technology, and Action Research in K–8 Classrooms (Chem)

(Elementary–Middle Level) 216A, Convention Center

**Lisa R. Wear** ([wearlr@rss.k12.nc.us](mailto:wearlr@rss.k12.nc.us)), Horizon Unlimited, Science and Technology Center, Salisbury, N.C.

President: **Fred Williams** ([williamsjf@rss.k12.nc.us](mailto:williamsjf@rss.k12.nc.us)), Horizon Unlimited, Science and Technology Center, Salisbury, N.C. Discover how teacher teams use Vernier sensor technology to increase academic achievement in physical science. Engage in hands-on experiments designed to maximize participation and learning.



**MoonKAM: Exploring Lunar Images (Gen)***(Elementary–Middle Level) 217A, Convention Center***Leesa Hubbard** (*leesa@sallyridesience.com*), Teacher in Residence, Sally Ride Science, San Diego, Calif.

Learn about the exciting GRAIL mission. GRAIL stands for the Gravity Recovery And Interior Laboratory. Find out what your students can do with images from cameras by MoonKAM (Knowledge Acquired by Middle school students) and walk away with hands-on activities using lunar images.

**STEM After the Bell Rings: Engineering for All Students (Gen)***(Elementary) 217D, Convention Center***Melissa Higgins** (*mhiggins@mos.org*), Museum of Science, Boston, Mass.

Learn how the hands-on nature of engineering activities provides unique opportunities to meet the needs of diverse populations in extended day and other out-of-school-time settings.

**DuPont Session: Bringing Literacy and Science Together: B.L.A.S.T. for Success at School and Home (Gen)***(Elementary) Bonham B, Grand Hyatt***Renee G. O’Leary**, Holy Angels School, Newark, Del.**Peggy Vavalla** (*vavallme@comcast.net*), DuPont, Wilmington, Del.

Discover simple multisensory hands-on elementary (grades 2–5) explorations using fairy tales as catalysts with take-home and language arts follow-up. Receive sample plans and materials.

**Super Models, Super Thinkers, Super Scientists****(Gen)***(General) Bonham E, Grand Hyatt***Katie McDilda** (*kmcdilda@wvstateu.edu*), West Virginia State University, Institute**Tina J. Cartwright** (*tina.cartwright@marshall.edu*), Marshall University, Huntington, W.Va.

Create a climate of investigation by making and analyzing “super models.” Maximize student learning through creating, questioning, thinking, and talking.

**But I’m Not a Reading Teacher...Using Complex Texts to Enrich the Science Classroom (Env)***(Middle Level–High School) Republic B, Grand Hyatt***Dawn Staples-Knox** (*dstaplesknox@gmail.com*), Searsport District High School, Searsport, Maine

Apply literacy strategies to use in your classroom. Showcasing Silent Spring in an environmental unit, this approach enriches the content and pushes students to think.

**Terrific Science Games for High Schools (Gen)***(High School/Supv.) Conf. Room 3/4, Marriott Rivercenter***Rodelio A. Abuan** (*odie@scienceterrificgames.com*), Sam Houston High School, Houston, Tex.**Ma Corazon Abuan** (*ma.corazonabuan@yahoo.com*), Spring, Tex.

Learn to make your own science games and puzzles that are fun and engaging, enhance science lessons, promote deeper understanding of concepts, increase learning retention, and improve skills in classifying, comparing, and problem solving. The games and puzzles can be used for individual or group tutorials and use cheap, durable, and very affordable materials.

**Feel the Pressure—Modeling Heart Health (Bio)***(General) Conference Room 16, Marriott Rivercenter***Carson E. Krook** (*cekrook@bisd.us*), Dr. Juliet V. Garcia Middle School, Brownsville, Tex.

Presider: Victor Gonzalez, Faulk Middle School, Brownsville, Tex.

Pump up your science classroom with this low-cost hands-on lab that models the working human heart.

**The Marshmallow Challenge: Using an Engineering Design Exercise to Get Kids Thinking Critically****(Gen)***(General) Salon F, Marriott Rivercenter***Mary Lou Blanchette Smith** (*msmith@eastconn.org*), EASTCONN, Hampton, Conn.

Using spaghetti, string, tape, and a marshmallow, build the tallest freestanding structure. It’s not just what you do, but what you don’t do, that assures success!

**A Very “Cool” Way to Establish Scientific Norms—  
Liquid Nitrogen! (Gen)**

(Middle Level–High School) *Salon M, Marriott Rivercenter*  
**Andrew B. West** (*andrew.west@wku.edu*) and **Jaclyn Morguelan**, Western Kentucky University, Bowling Green  
Walk away with strategies for using liquid nitrogen to help students interact like scientists. Experience the strategies and get hands-on experience with multiple liquid nitrogen demonstrations.

**Student-friendly Microscale Chemistry Using Polymers (Chem)**

(Middle Level–High School) *Alamo Salon A, Marriott Riverwalk*  
**Cora S. Salumbides**, Jefferson Union High School District, Daly City, Calif.

**Erlinda I. Bernardo** (*lynnebernardo@yahoo.com*), Centro Escolar University, Manila, Philippines

Experience this fun and friendly way to teach basic chemistry concepts such as neutralization using slime, properties of matter, and molecular structure using polymers.

**What Makes Kids Want to Learn? Food! (Bio)**

(Middle Level–High School) *Alamo Salon D, Marriott Riverwalk*  
**Laurie A. Hayes** (*lhayes@cart.org*), Center for Advanced Research and Technology, Clovis, Calif.

**Susan E. Hartley** (*semumford-hartley@aps.k12.co.us*), Hinkley High School, Aurora, Colo.

Serve up science with this hands-on workshop that explores integrating food science and nutrition into your curriculum. Free materials and door prizes!

**5:00–7:00 PM Exhibitor Workshop**

**Just Physics (Phys)**

(Grades K–12) *Grand Ballroom C3, Convention Center*

Sponsor: PASCO scientific

**Presenter to be announced**

PASCO presents the 11th annual evening of “Just Physics,” featuring food, fun, live physics demonstrations, and a free T-shirt.

**5:30–7:00 PM Reception**

**NSTA Student Chapter and Student Members Reception**

*Travis C/D, Grand Hyatt*

No ticket required; open to all preservice teachers and those who work with them.

If your institution has an NSTA Student Chapter, bring examples of the work of your chapter, best practices, and stories to share with students at institutions that don’t yet have an NSTA Student Chapter! If your school does not yet have an NSTA Student Chapter, come hear your future colleagues’ best practices and learn about starting and running a successful chapter at your school! Refreshments and hors d’oeuvres will be served as you network with your peers.

**5:30–7:30 PM Reception**

**NSELA/NGSS Reception for High School Teachers**

*Texas Ballroom F, Grand Hyatt*

Calling all high school teachers! Please join BFW Publishers for a reception immediately following the NSELA Next Generation Science Standards sessions. Visit [highschool.bfwpub.com](http://highschool.bfwpub.com) for more information.

**6:00–8:45 PM NSTA Teacher Awards Gala**

(Tickets Required: \$70) **M-5** *Salon H/I, Marriott Rivercenter*

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**

*Lone Star Ballroom D, Grand Hyatt*

Join us for a nice Earth and space science networking opportunity. Visit with old friends and make new ones! Awards, appetizers, and liquid refreshments, too! Visit [www.nestanet.org](http://www.nestanet.org) for more information.

**7:00–9:00 PM Social**

**SCST Dessert Social and Poster Session**

*Texas Ballroom C, Grand Hyatt*



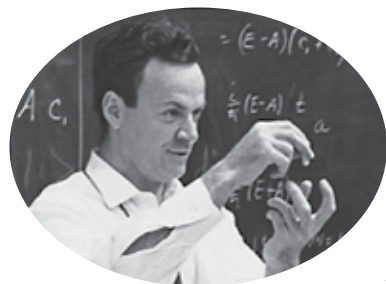
## A Festival of Award-winning Film Classics and Inspiring Legends, Part II

6:00 PM–12 Midnight • Salon A, Marriott Rivercenter

Mitchell E. Batoff ([mbatoff@aol.com](mailto:mbatoff@aol.com)), Professor Emeritus, New Jersey City University, Jersey City

Gordon D. Clark, Retired Educator, Manalapan, N.J.

Linda M. Frederick ([adnil@ptd.net](mailto:adnil@ptd.net)), East Hills Middle School, Bethlehem, Pa.



This is a continuation of the Thursday evening session featuring cinematic jewels and the creative use of video technology to inform, inspire, motivate, entertain, and provoke thought. The screenings will be interspersed with commentary, discussion, and some live demonstrations. There will be



humor, wonder, and perplexity mixed with a lot of information

on a wide range of topics. Pick up ideas and content that will broaden your knowledge and that you can use in your teaching. The audience will help select from this extensive and enticing menu of course excerpts:



*The Feynman Lectures on Nanotechnology* • Soap Bubbles and the Forces That Mold Them with **Tik Liem** • *NOVA: The Odyssey of Life—The Photographer's Secrets* with **Lennart Nilsson** • *The Plankton Chronicles* with **Christian Sardet** • *An Introduction to the Periodic Table* •



The Elements Video Project • *The World of Chemistry* demonstrations by



**Don Showalter** • *Lucky Accidents, Great Discoveries, and the Prepared Mind* with **Hubert N. Alyea** • *Once Upon a Christmas Cheery in the Lab of Shakhshiri*



Dozens of door prizes directly related to this session will be raffled off throughout the entire evening right up to 12 Midnight. Come and go, stay as long as you wish. Bring your dinner.



- *For the Love of Physics* with MIT's **Walter Lewin**
- *Chaos and the Double Pendulum* with **Steven Strogatz** • *Universe* (Academy Award Nominee, 1960) • *The Aqua Vase* with **Harry Wong**
- *Modeling from The Search for Solutions* • *Perpetual Ocean* • *Mousetrap Fission* • *The Little Match Boy* • *Choreography of the Dance of the Pendulums*



- *"Knowledge or Certainty"* with **Jacob Bronowski** • *Mr. Wizard's World* with **Don Herbert** • *Beavers* (IMAX) • *The Making of Proteus* with **David Lebrun**
- *Broomstick Pulleys and Some Surprises* with **Verne Rockcastle** • *Osprey: Incredible Predator* • *Minds of Our Own*



- *Pale Blue Dot* with **Carl Sagan** • *A Celebration of Birds* with **Roger Tory Peterson** • *The Rise and Fall of the Great Lakes*
- *Marine Flowers* by **Kazuo Okada**
- *Heartbeat of a Volcano* by **Bert van Bork** • a dozen choice internet sites for great science videos



# National Earth Science Teachers Association Events at 2013 San Antonio NSTA Conference



All NESTA sessions are in the Henry B. Gonzalez Convention Center, Ballroom A unless otherwise indicated

## Friday, April 12

- 9:30 – 10:30 am      NESTA Geology Share-a-Thon
- 11:00 am – noon      NESTA Oceans and Atmospheres Share-a-Thon
- 12:30 – 1:30 pm      NESTA Earth System Science Share-a-Thon
- 2:00 – 3:00 pm      American Geophysical Union Lecture, *"The climate science debate: What does the science tell us and why people on both sides are so angry about it"*, Prof. Andrew Dessler, Texas A&M University (Grand Ballroom C1)
- 2:00 – 3:00 pm      Climate Change Classroom Toolkit
- 3:30 – 4:30 pm      Let's Get Well Grounded!
- 6:30 – 8:00 pm      Friends of Earth Science Reception (Grand Hyatt Hotel, Lone Star D)

## Saturday, April 13

- 8:00 – 9:00 am      Activities Across the Earth System
- 9:30 – 10:30 am      Exploring Planetary Science and Astronomy – What Would Galileo Do?
- 11:00 – noon      NESTA Space Science Share-a-Thon
- 12:30 – 1:30 pm      NOAA-Sponsored NESTA Advances in Earth and Space Science Lunchtime Lecture, Mark Neilsen, Howard Hughes Medical Institute – *"If these rocks could talk: Earth's climate in the deep past"*
- 2:00 – 3:00 pm      Our Changing Planet
- 3:30 – 4:30 pm      NESTA Rock and Mineral Raffle
- 5:00 – 6:00 pm      NESTA Annual Membership Meeting

NESTA gratefully acknowledges co-sponsorship of our events by the following organizations:



HOWARD HUGHES MEDICAL INSTITUTE



Ball Aerospace & Technologies Corp.



**NORTHROP GRUMMAN**



## Meetings and Social Functions

### Friday, April 12

AMSE Alice J. Moses Breakfast

By Invitation Only

Salon A, Marriott Rivercenter ..... 6:30–8:30 AM

High School Breakfast (M-2)

(Tickets Required: \$45)

Alamo Salon A, Marriott Riverwalk..... 7:30–9:00 AM

Next Steps Networking Forum

Tickets are required; \$20 at the door

Salon C, Marriott Rivercenter .....7:30–10:00 AM

NSTA Aerospace Programs Advisory Board Meeting

Conf. Suite 514, Marriott Rivercenter .....8:30–10:30 AM

NSTA International Lounge

Republic C, Grand Hyatt .....9:00 AM–5:00 PM

Next Steps Advisory Board Meeting

By Invitation Only

Conf. Room 10, Marriott Rivercenter ..... 10:30 AM–1:30 PM

NSTA Student Chapter Showcase and Lounge

Executive Assembly, Conv. Center .....11:00 AM–3:00 PM

Discovery Education Focus Group on the New Health/Wellness Program *fit 4 the classroom*

(Registration Required)

Valero, Marriott Riverwalk ..... 11:00 AM–12 Noon

Fueling Instructional Transformation with Digital Textbooks: A Luncheon Panel Discussion Hosted by Discovery Education

By Invitation Only

Salon D, Marriott Rivercenter ..... 12 Noon–1:30 PM

SEPA Luncheon

By Invitation Only

Lone Star Ballroom D, Grand Hyatt..... 12 Noon–2:00 PM

NSELA/ASTE Luncheon (M-3)

(Tickets Required: \$60)

Presidio B, Grand Hyatt..... 12 Noon–2:00 PM

NSTA/NMLSTA Middle Level Luncheon (M-4)

(Tickets Required: \$60)

Alamo Salon A, Marriott Riverwalk..... 12 Noon–2:00 PM

Lifelines for Climate Change Education Meeting

By Invitation Only

Conference Room 7, Marriott Rivercenter.. 1:00–2:00 PM

Gay, Lesbian, Bisexual, and Transgender Science Teachers Association Annual Meeting

Bonham, Marriott Riverwalk ..... 2:00–3:00 PM

NSTA Chapter and District Meet and Greet in Honor of Wendell Mohling

Exhibit Hall, Convention Center ..... 2:00–3:30 PM

NSTA International Advisory Board Meeting

Goliad, Grand Hyatt ..... 3:00–5:00 PM

AMSE Membership Meeting

Conf. Room 10, Marriott Rivercenter ..... 3:00–5:00 PM

GEICO/NSTA Member Orientation Reception

Lone Star Ballroom D, Grand Hyatt..... 3:30–5:00 PM

SCST Business Meeting

Bowie C, Grand Hyatt..... 3:30–5:00 PM

Shell Reception

By Invitation Only

Salon J/K, Marriott Rivercenter ..... 5:00–5:45 PM

NSTA Student Chapter and Student Members Reception

No Ticket Required; Open to All Preservice Teachers and Those Who Work with Them

Travis C/D, Grand Hyatt ..... 5:30–7:00 PM

NSELA/NGSS Reception for High School Teachers

Texas Ballroom F, Grand Hyatt..... 5:30–7:30 PM

NSTA Teacher Awards Gala (M-5)

(Tickets Required: \$70)

Salon H/I, Marriott Rivercenter ..... 6:00–8:45 PM

NESTA Friends of Earth Science Reception

Lone Star Ballroom D, Grand Hyatt..... 6:30–8:00 PM

SCST Dessert Social and Poster Session

Texas Ballroom C, Grand Hyatt ..... 7:00–9:00 PM

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## Anatomy in Clay® Learning System (Booth #829)

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Friday, April 12 2:00–3:30 PM 204A, Conv. Center Build It! Increase Student Engagement with the Anatomy in Clay® Learning System (p. 97)

## Arbor Scientific (Booth #831)

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Friday, April 12 4:00–5:30 PM 007B, Conv. Center Physical Science with iPads, Smartphones, and Technology That Your Students Use Every Day (p. 109)

## Artec Educational (Booth #1726)

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Friday, April 12 4:00–5:30 PM 204A, Conv. Center Forces and Motion (p. 111)

## Bio-Rad Laboratories (Booth #825)

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Friday, April 12 9:00–11:30 AM 217B, Conv. Center DNA Detectives—Who Killed Jose? (p. 37)  
Friday, April 12 10:00 AM–12 Noon 217C, Conv. Center Worm and Squirm Your Way into Behavior Labs (p. 54)  
Friday, April 12 1:00–2:30 PM 217B, Conv. Center What Color Is Your World? Quick, Easy, and Cheap Biotech Activities for Biology and Chemistry (p. 84)  
Friday, April 12 1:00–3:00 PM 217C, Conv. Center Ecology to Enzymes to Industry (AP Big Idea 4) (p. 85)  
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## BIOZONE International (Booth #1634)

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## Carolina Biological Supply (Booth #404)

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Friday, April 12 4:00–5:30 PM 207B, Conv. Center Decoding Human Genetics with Inquiries in Science® (p. 111)  
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Friday, April 12	10:00–11:30 AM	214D, Conv. Center	Car and Ramp: Using a Graph to Predict Speed with the CPO Science Data Collector (p. 54)
Friday, April 12	12 Noon–1:30 PM	214D, Conv. Center	A STEM Approach to Teaching Electricity and Magnetism (p. 72)
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## Delta Education/School Specialty Science (Booth #213)

Friday, April 12	8:00–9:15 AM	214B, Conv. Center	Science, the Literacy Connection, and the Common Core (p. 29)
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Friday, April 12	10:00–11:30 AM	209, Conv. Center	High School Biology in a Digital World: Critical Thinking Trumps Information Overload (p. 53)
Friday, April 12	12 Noon–1:30 PM	209, Conv. Center	STEM Is Virtually Everywhere at Discovery (p. 70)
Friday, April 12	2:00–3:30 PM	209, Conv. Center	Siemens STEM Academy: Top Free STEM Resources for Your Classroom (p. 98)
Friday, April 12	4:00–5:30 PM	209, Conv. Center	Discovery Education Science Techbook—Myths Busted (p. 111)

## The Dow Chemical Co. (Booth #699)

Friday, April 12	8:00–9:30 AM	Salon E, Marriott Rivercenter	You Be The Chemist Challenge (p. 35)
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## eCYBERMISSION (Booth #1128)

Friday, April 12	8:00–9:30 AM	007B, Conv. Center	Hard Doesn't Mean Bad—Helping Students Understand That Facing Challenges Is a Good Thing (p. 30)
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## Educational Innovations, Inc. (Booth #926)

Friday, April 12	8:00–9:30 AM	214A, Conv. Center	The Private Eye® Way to Magnify Minds: How to Fire Up STEM and Common Core State Standards' Literacy Goals (p. 34)
Friday, April 12	10:00–11:30 AM	214A, Conv. Center	What the Heck Happened?! (p. 54)
Friday, April 12	12 Noon–1:30 PM	214A, Conv. Center	Fantastical Chemistry Demos for All Classrooms (p. 72)
Friday, April 12	2:00–3:30 PM	214A, Conv. Center	Elementary Teacher Survival Kit (p. 99)
Friday, April 12	4:00–5:30 PM	214A, Conv. Center	3-2-1 Blast Off! (p. 112)

## Edusmart Science (Booth #1037)

Friday, April 12	12 Noon–1:30 PM	007B, Conv. Center	Integrating Multimedia and SIOP Strategies in Science to Meet the Needs of ELL Students (p. 68)
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## ExploreLearning (Booth #1426)

Friday, April 12	8:00–9:30 AM	101B, Conv. Center	Pairing Gizmos with Common Core ELA—A Perfect Duo! (p. 32)
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## Fisher Science Education (Booth #916)

Friday, April 12	8:00–9:30 AM	102A, Conv. Center	Exploring Alternative Energy and Careers in STEM (p. 32)
Friday, April 12	10:30 AM–12 Noon	102A, Conv. Center	Exploring STEM with K’NEX® (p. 56)
Friday, April 12	1:30–3:00 PM	102A, Conv. Center	Exploring STEM Careers: Water and Our Environment (p. 86)

## Flinn Scientific, Inc. (Booth #726)

Friday, April 12	8:00–9:30 AM	103A, Conv. Center	Fantastic Physical Science Demonstrations from Flinn (p. 32)
Friday, April 12	10:00–11:30 AM	103A, Conv. Center	New Advanced Inquiry Labs for AP Biology from Flinn Scientific (p. 53)
Friday, April 12	10:00–11:30 AM	Grand Blrm. C1, Conv. Center	Flinn Scientific Morning of Chemistry: The Chemistry of Teaching (p. 54)
Friday, April 12	12 Noon–1:30 PM	103A, Conv. Center	Favorite Biology Lab Activities and Games from Flinn (p. 68)
Friday, April 12	2:00–3:30 PM	103A, Conv. Center	New Guided Inquiry Labs for Advanced Placement® Chemistry from Flinn Scientific (p. 97)
Friday, April 12	4:00–5:30 PM	103A, Conv. Center	How to Design a Safe and Efficient Science Laboratory from Flinn (p. 110)

## Houghton Mifflin Harcourt (Booth #1526)

Friday, April 12	12 Noon–1:30 PM	204B, Conv. Center	Ecology Adventures: Motivating Students Through Project Based Learning (p. 70)
Friday, April 12	2:00–3:30 PM	204B, Conv. Center	Extra, Extra! Read All About It! Taking Biology from the News to the Classroom (p. 98)
Friday, April 12	4:00–5:30 PM	204B, Conv. Center	More STEM Challenges for the Classroom, Part 2 (p. 111)

## Howard Hughes Medical Institute (Booth #347)

Friday, April 12	8:00–9:30 AM	008A, Conv. Center	The Science Behind West Nile Virus Infections (p. 32)
Friday, April 12	10:00–11:30 AM	008A, Conv. Center	HHMI’s <i>The Day the Mesozoic Died</i> Classroom Resources (p. 52)
Friday, April 12	12 Noon–1:30 PM	008A, Conv. Center	EarthViewer—4.6 Billion Years of Earth History at Your Fingertips (p. 68)
Friday, April 12	2:00–3:30 PM	008A, Conv. Center	HHMI’s <i>The Making of the Fittest: The Coevolution of Genes and Culture</i> in Your Classroom (p. 96)
Friday, April 12	4:00–5:30 PM	008A, Conv. Center	Paleoclimate and How It Helps Us Understand Current Climate Change. Featuring HHMI’s New DVD <i>Changing Planet: Past, Present, Future</i> (p. 110)

## It’s About Time (Booth #715)

Friday, April 12	8:00–9:00 AM	205, Conv. Center	Turn Your Science Classroom into a STEM Classroom with a WebCam Laboratory (p. 28)
Friday, April 12	9:30–10:30 AM	205, Conv. Center	Earth and Space Science—More Pertinent Today, More Important in the Next Generation Science Standards (p. 50)
Friday, April 12	11:00 AM–12 Noon	205, Conv. Center	Project-Based Inquiry Science: PBIS™—Exemplifying Blending Practices, Core Ideas, and Crosscutting Concepts (p. 64)
Friday, April 12	12:30–1:30 PM	205, Conv. Center	Engineering the Future: A Practical Approach to STEM for High School (p. 83)
Friday, April 12	2:00–3:00 PM	205, Conv. Center	Active Physics—Ahead of Its Time in Capturing the Essence of the NGSS and STEM (p. 95)
Friday, April 12	3:30–4:30 PM	205, Conv. Center	Active Chemistry: Ahead of Its Time in Capturing the Essence of the NGSS and STEM (p. 108)

## K’NEX Education (Booth #1102)

Friday, April 12	8:00–9:30 AM	102B, Conv. Center	Bring Simple Machine Concepts to Life with Real-World Models! (p. 32)
Friday, April 12	10:00–11:30 AM	102B, Conv. Center	Go Green and Bring STEM Concepts to Life with the K’NEX® Education Renewable Energy Set! (p. 52)

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## K'NEX Education, cont.

Friday, April 12	12 Noon–1:30 PM	102B, Conv. Center	DNA Replication and Transcription—No More Gumdrops and Toothpicks! (p. 68)
Friday, April 12	2:00–3:30 PM	102B, Conv. Center	Bring the Excitement of Hands-On Learning to Your Middle School Classroom! (p. 97)
Friday, April 12	4:00–5:30 PM	102B, Conv. Center	It's Off to the Races with K'NEX® Education's Forces, Energy, and Motion Set! (p. 110)

## KidWind Project (Booth #1826)

Friday, April 12	8:00–9:00 AM	007C, Conv. Center	Hands-On Hydropower (p. 28)
Friday, April 12	9:30–11:30 AM	007C, Conv. Center	Wind-energized Classroom (p. 50)
Friday, April 12	12:30–2:00 PM	007C, Conv. Center	WindWise Science Curriculum (p. 83)
Friday, April 12	2:30–3:30 PM	007C, Conv. Center	Renewable Power, Vernier, and KidWind Gear (p. 99)
Friday, April 12	4:00–5:30 PM	007C, Conv. Center	Exploring Circuits by Hacking Toys (p. 109)

## LAB-AIDS, Inc. (Booth #1216)

Friday, April 12	8:00–9:30 AM	203A, Conv. Center	Color, Spectrophotometry, and Teaching the Structure of the Atom (p. 32)
Friday, April 12	10:00–11:30 AM	203A, Conv. Center	Biomes and Invasive Species (p. 53)
Friday, April 12	12 Noon–1:30 PM	203A, Conv. Center	Mastering the Chemical Formula: An Effective Way to Teach Subscripts and Coefficients (p. 69)
Friday, April 12	2:00–3:30 PM	203A, Conv. Center	Distillation: Simple and Fascinating Experiments in the Chemistry of Aromas and Smells (p. 97)
Friday, April 12	4:00–5:30 PM	203A, Conv. Center	Fast and Furious—Measuring Speed (p. 111)

## LaMotte Co. (Booth #526)

Friday, April 12	10:00–11:30 AM	006A, Conv. Center	Take a Swipe at Microbes! (p. 51)
Friday, April 12	12 Noon–1:30 PM	006A, Conv. Center	A Tour for Your Inclusion Classes—How to Make It Work! (p. 66)

## LEGO Education (Booth #805)

Friday, April 12	8:00–9:30 AM	007A, Conv. Center	Introducing Simple Machines into the Elementary Classroom with LEGO® Bricks (p. 30)
Friday, April 12	10:00–11:30 AM	007A, Conv. Center	Enhancing the Elementary Classroom Through Robotics (p. 52)
Friday, April 12	12 Noon–1:30 PM	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Getting Started (p. 67)
Friday, April 12	2:00–3:30 PM	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Advancing Your Program (p. 96)
Friday, April 12	4:00–5:30 PM	007A, Conv. Center	Machines and Mechanisms in the Classroom and Beyond (p. 109)

## McGraw-Hill Education (Booth #705)

Friday, April 12	12 Noon–1:30 PM	204A, Conv. Center	Fun, Fabulous Foldables® (p. 69)
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## NASA Science Mission Directorate E/PO (Booth #1716)

Friday, April 12	8:00–9:00 AM	103B, Conv. Center	NASA's Next Generation Science Classroom (p. 28)
Friday, April 12	9:30–10:30 AM	103B, Conv. Center	NASA's Next Generation Science Classroom (p. 49)
Friday, April 12	11:00 AM–12 Noon	103B, Conv. Center	NASA's Next Generation Science Classroom (p. 64)

## National Geographic Learning (Booth #229)

Friday, April 12	2:00–3:30 PM	101B, Conv. Center	Science the National Geographic Way! (p. 97)
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## Nutrients for Life Foundation (Booth #1413)

Friday, April 12	8:00–9:30 AM	204A, Conv. Center	What's Soil Got to Do with It? (p. 33)
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## PASCO scientific (Booths #129 and #132)

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Friday, April 12	8:00–9:30 AM	006C, Conv. Center	Achievable Inquiry in AP* Biology (p. 30)
Friday, April 12	8:00–9:30 AM	006D, Conv. Center	Renewable Energy Exploration with SPARKscience and iPad (p. 30)
Friday, April 12	10:00–11:30 AM	006D, Conv. Center	Exploring Basic Optics (p. 51)
Friday, April 12	10:00–11:30 AM	006C, Conv. Center	Equip Your iPad or Android Tablet for Science with SPARKvue® HD, a Full-featured Science Application (p. 51)
Friday, April 12	12 Noon–1:30 PM	006C, Conv. Center	Human Physiology with PASCO (p. 67)
Friday, April 12	12 Noon–1:30 PM	006D, Conv. Center	STEM: Meeting the Standards in Your Classroom (p. 67)
Friday, April 12	2:00–3:30 PM	006C, Conv. Center	Earth Science Investigation: Modeling Ocean Circulation and Layers of the Atmosphere (p. 96)
Friday, April 12	2:00–3:30 PM	006D, Conv. Center	AP Physics—Friction (p. 96)
Friday, April 12	4:00–5:30 PM	006C, Conv. Center	Equip Your iPad or Android Tablet for Science with SPARKvue® HD, a Full-featured Science Application (p. 109)
Friday, April 12	4:00–5:30 PM	006D, Conv. Center	STEM: Air Bags—Project-based Chemistry Activities (p. 109)
Friday, April 12	5:00–7:00 PM	Grand Ballrm. C3, Conv. Center	Just Physics (p. 118)

## Pearson (Booth #200)

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Friday, April 12	8:00–9:30 AM	006B, Conv. Center	The Next Generation of Science Virtual Labs for the Entire Science Curriculum—No Cleanup Required! (p. 30)
Friday, April 12	10:00–11:30 AM	006B, Conv. Center	The Next Generation Science Standards: What They Mean for Earth and Space Science (p. 51)
Friday, April 12	12 Noon–1:30 PM	006B, Conv. Center	Planet Diary: Using Current Events to Engage Your Students in Science (p. 66)
Friday, April 12	2:00–3:30 PM	006B, Conv. Center	NGSS, STEM, and Scientific Literacy—What Now? (p. 96)
Friday, April 12	4:00–5:30 PM	006B, Conv. Center	Make Learning Part of the Grade (p. 109)

## Perimeter Institute for Theoretical Physics (Booth #1002)

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Friday, April 12	8:00–9:30 AM	212B, Conv. Center	Perimeter Institute: Classroom Activities for Dark Matter (p. 34)
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## Project WET Foundation (Booth #1336)

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Friday, April 12	4:00–5:30 PM	006A, Conv. Center	Take the Plunge with the New Project WET 2.0 (p. 109)
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## REAL School Gardens (Booth #1535)

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Friday, April 12	8:00–9:30 AM	204B, Conv. Center	REAL School Gardens: Life Science Comes Alive (p. 33)
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## Sangari Active Science (Booth #534)

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Friday, April 12	10:00–11:30 AM	204B, Conv. Center	NGSS and Scientific Practices—More Than Photoshopping Models' Flaws (p. 53)
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## Science First®/STARLAB® (Booth #1500)

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Friday, April 12	12:30–1:00 PM	Booth #1500, Exhibit Hall	Welcome to the Neighborhood: An Overview of the Solar System (p. 74)
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## Science Take-Out (Booth #1531)

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Friday, April 12	2:00–3:30 PM	007D, Conv. Center	Pollution and Acid Rain Activities (p. 96)
Friday, April 12	4:00–5:30 PM	007D, Conv. Center	Homeostasis and Diabetes (p. 110)

## Scientific Minds, LLC (Booth #1142)

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Friday, April 12	12 Noon–1:30 PM	008B, Conv. Center	Launching Literacy with Science Starters (p. 68)
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## Simulation Curriculum (Booth #814)

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Friday, April 12	10:00–11:30 AM	007B, Conv. Center	Volcanoes and the Ring of Fire (p. 52)
Friday, April 12	2:00–3:30 PM	007B, Conv. Center	They Come from Outer Space (p. 96)

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## Society for Neuroscience (Booth #1400)

Friday, April 12	12 Noon–1:30 PM	101B, Conv. Center	Shaken Up: Teaching About Childhood Sports Injuries and the Brain (p. 68)
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## Society for Science & the Public (Booth #1101)

Friday, April 12	4:00–5:30 PM	008B, Conv. Center	Supporting Independent Student Research and Successfully Navigating SSP Competitions (p. 110)
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## Space Camp® (Booth #1916)

Friday, April 12	8:00–9:30 AM	008B, Conv. Center	Space Camp and 21st-Century Learning: The Crossroads of Formal and Informal Education (p. 32)
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## SparkFun Electronics (Booth #1735)

Friday, April 12	10:00–11:30 AM	212B, Conv. Center	Unleashing Your Students' Inner Inventor—Robots, Video Games, and DIY! (p. 54)
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## Swift Optical Instruments, Inc. (Booth #335)

Friday, April 12	12 Noon–1:30 PM	212B, Conv. Center	Got MoticNet?...Then Connect! (p. 72)
Friday, April 12	2:00–3:30 PM	212B, Conv. Center	Creating a Digital Strategy for STEM (p. 99)
Friday, April 12	4:00–5:30 PM	212B, Conv. Center	Create a Digital WiFi Classroom.... Using the New Moticam X and Moticonnect App! (p. 112)

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## Tropical Ecology Assessment and Monitoring Network (Booth #1541)

Friday, April 12	10:00–11:30 AM	101B, Conv. Center	Experiences from a Professional Development Opportunity in Costa Rica (p. 52)
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## TruGreen's MyBotanicPlanet.com (Booth #1433)

Friday, April 12	10:00–11:30 AM	204A, Conv. Center	Making Science Fun: <i>MyBotanicPlanet.com</i> (p. 53)
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## Vernier Software & Technology (Booth #100)

Friday, April 12	8:00–9:30 AM	210B, Conv. Center	Engineering with Vernier (p. 34)
Friday, April 12	8:00–9:30 AM	210A, Conv. Center	K–8 Science with Vernier (p. 33)
Friday, April 12	10:00–11:30 AM	210A, Conv. Center	<i>Physics with Vernier</i> (p. 54)
Friday, April 12	10:00–11:30 AM	210B, Conv. Center	Inquiry-based Biology with Vernier (p. 54)
Friday, April 12	12 Noon–1:30 PM	210B, Conv. Center	Connected Science System®: Leveraging Vernier Technology with Mobile Devices in the Classroom (p. 70)
Friday, April 12	12 Noon–1:30 PM	210A, Conv. Center	Chemistry with Vernier (p. 70)
Friday, April 12	2:00–3:30 PM	210A, Conv. Center	Biology with Vernier (p. 98)
Friday, April 12	2:00–3:30 PM	210B, Conv. Center	STEM Activities Using Vernier Technology (p. 98)

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## W.H. Freeman of Bedford, Freeman & Worth (BFW) Publishers (Booth #934)

Friday, April 12	8:00–9:30 AM	007D, Conv. Center	<i>Living By Chemistry</i> : Create a Table (p. 30)
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## Ward's Science (Booth #1316)

Friday, April 12	8:00–9:30 AM	211, Conv. Center	Physics from the NRC <i>Framework</i> : Exploring NGSS and Newton's Laws (p. 34)
Friday, April 12	10:00–11:30 AM	211, Conv. Center	Put the "E" in STEM: Science and Engineering Practices in Action (p. 54)
Friday, April 12	12 Noon–1:30 PM	211, Conv. Center	Wind Power and Alternative Energy: Exploring Energy Core Concepts (p. 72)
Friday, April 12	2:00–3:30 PM	211, Conv. Center	Hands-On Help for the New AP Biology Labs (p. 99)
Friday, April 12	4:00–5:30 PM	211, Conv. Center	Chemistry In-the-Bag (p. 111)

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### Wavefunction, Inc. (Booth #1725)

Friday, April 12 10:00–11:30 AM 007D, Conv. Center

Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 52)

Friday, April 12 12 Noon–1:30 PM 007D, Conv. Center

Exploring the Molecular World: Scientifically Accurate Visualization and Simulation Tools (p. 68)



## 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

8:00–9:00 AM	H	Alamo Salon E, Marr. Riverwalk	Santhi Stripped of Her Silver: Using an Olympic Case Study as the Basis for a Biotechnology Lab Sequence (p. 22)
8:00–9:00 AM	H	Alamo Salon F, Marr. Riverwalk	Race, Socioeconomic Status, and the Medical Ethics of Cancer Research (p. 22)
8:00–9:00 AM	H	Alamo Salon F, Marr. Riverwalk	Progress Monitoring and Standards-based Instruction (p. 22)
8:00–9:00 AM	P–E	202A, Conv. Center	Fee Fi Fo Fum! Getting Elementary Students Excited About Plants! (p. 23)
8:00–9:00 AM	C	Bowie C, Grand Hyatt	SCST Session: Using Bean Beetles to Encourage Inquiry in a Nonmajors Early College High School Course (p. 18)
8:00–9:00 AM	C	Bowie C, Grand Hyatt	SCST Session: Critical Thinking and Case Studies: What’s the Connection? (p. 18)
8:00–9:00 AM	C	Bowie C, Grand Hyatt	SCST Session: Thriving or Just Surviving: Helping Freshmen Science Majors Find Their Game (p. 18)
8:00–9:00 AM	H	Alamo Salon D, Marr. Riverwalk	Modeling Biology: Energy in an Ecosystem (p. 26)
8:00–9:00 AM	H–C/I	Lone Star Blrm. C, Grand Hyatt	Reinforce Scientific and Engineering Practices Through Clinical Research with Virtual Clinical Trials (p. 18)
8:00–9:00 AM	M–C	Alamo Salon C, Marr. Riverwalk	The Do’s and Don’t’s of the Flipped Classroom: Best Practices (p. 22)
8:00–9:00 AM	6–C	217C, Conv. Center	Science, Fashion, and Fun! Genes in a Bottle™ Kit (p. 29)
8:00–9:30 AM	9–12	206A, Conv. Center	Exploring Feline Anatomy with Carolina’s Perfect Solution® Cats (p. 33)
8:00–9:30 AM	6–12	214D, Conv. Center	Genetics: Crazy Traits and Adaptation Survivor (p. 34)
8:00–9:30 AM	K–6	204A, Conv. Center	What’s Soil Got to Do with It? (p. 33)
8:00–9:30 AM	9–C	008A, Conv. Center	The Science Behind West Nile Virus Infections (p. 32)
8:00–9:30 AM	9–12	006C, Conv. Center	Achievable Inquiry in AP* Biology (p. 30)
8:00 AM–12 Noon	E–H	Conf. Rm. 1/2, Marr. Rivercenter	BSCS-I Pathway Session: Using Models to Enhance How Students Learn Science (p. 36)
9:00–11:30 AM	9–C	217B, Conv. Center	DNA Detectives—Who Killed Jose? (p. 37)
9:30–10:30 AM	M–H	Texas Ballroom F, Grand Hyatt	Next Generation Science Standards: Teacher Insights from the Writing Team—Life Sciences (Middle/High School) (NGSS @ NSTA) (p. 43)
9:30–10:30 AM	H–C	Bowie C, Grand Hyatt	SCST Session: Tuning Biology in Texas: Aligning Competencies and Expectations for the Biology Degree (p. 41)
9:30–10:30 AM	C	Bowie C, Grand Hyatt	SCST Session: Increasing the Diversity and Quality of Biology Graduates (p. 41)
9:30–10:30 AM	M–H	Bonham B, Grand Hyatt	DuPont Session: DuPont Presents “The Science of Food Safety” (p. 46)
9:30–10:30 AM	G	Alamo Salon C, Marr. Riverwalk	Stretch Your Legs for Science (p. 48)
9:30–10:30 AM	H	Alamo Salon F, Marr. Riverwalk	Standards- and Research-based Lessons for the High School Biology Classroom (p. 44)
9:30–10:30 AM	H	Alamo Salon F, Marr. Riverwalk	Teaching and Learning About the Human Nature of Science Within the Learning Cycle (p. 44)
9:30–10:30 AM	P–M	Alamo Salon E, Marr. Riverwalk	Invertebrates as the “Backbone” of an Elementary Science Curriculum (p. 44)
9:30–10:30 AM	H–C/I	Lone Star Blrm. A, Grand Hyatt	Neuroscience for Your Biology Classroom (p. 47)
9:30–10:30 AM	H	Alamo Salon D, Marr. Riverwalk	Tangible Models and Augmented Reality: New Technology for High School Biology Classrooms (p. 48)
9:30–10:30 AM	E	208, Conv. Center	Literacy (Prose and Poetry) as a Component of Science Teaching (p. 45)
10:00–11:30 AM	7–12	006A, Conv. Center	Take a Swipe at Microbes! (p. 51)
10:00–11:30 AM	9–12	206A, Conv. Center	Carolina Investigations™ for AP Biology Labs (p. 53)
10:00–11:30 AM	K–5	204A, Conv. Center	Making Science Fun: <i>MyBotanicPlanet.com</i> (p. 53)
10:00–11:30 AM	10–12	103A, Conv. Center	New Advanced Inquiry Labs for AP Biology from Flinn Scientific (p. 53)
10:00–11:30 AM	9–C	210B, Conv. Center	Inquiry-based Biology with Vernier (p. 54)
10:00–11:30 AM	9–12	209, Conv. Center	High School Biology in a Digital World: Critical Thinking Trumps Information Overload (p. 53)

## Schedule at a Glance Biology/Life Science

10:00–11:30 AM	5	101B, Conv. Center	Experiences from a Professional Development Opportunity in Costa Rica (p. 52)
10:00–11:30 AM	9–12	203A, Conv. Center	Biomes and Invasive Species (p. 53)
10:00 AM–12 Noon	9–C	217C, Conv. Center	Worm and Squirm Your Way into Behavior Labs (p. 54)
10:30 AM–12 Noon	H–C	Grand Blrm. C2, Conv. Center	The Bat Flower Plant: New Hope for Treating Cancer (p. 55)
11:00–11:30 AM	H–C	Bowie C, Grand Hyatt	Teaching College-Level Anatomy and Physiology Within High Schools Through a Concurrent Enrollment Program (p. 56)
11:00 AM–12 Noon	G	Alamo Salon E, Marr. Riverwalk	A Multiplayer Online Game That Fosters Engagement and Learning in STEM (p. 60)
11:00 AM–12 Noon	G	Lone Star Blrm. F, Grand Hyatt	CSI Web Adventures: Engage Your Students in Scientific Methods and Techniques Applied to Solve Crimes (p. 58)
11:00 AM–12 Noon	M–H	Alamo Salon F, Marr. Riverwalk	Forensic Anthropology: Teaching the Skeletal System (p. 60)
11:00 AM–12 Noon	I	Alamo Salon C, Marr. Riverwalk	Engage Your Students with NOAA's Coral Reef Resources (p. 64)
11:00 AM–12 Noon	P–E	212A, Conv. Center	CESI Session: Strong STEMs Need Strong Sprouts! (p. 57)
11:00 AM–12 Noon	H	Alamo Salon D, Marr. Riverwalk	Enzymes—Group 1: The Builders (p. 64)
12 Noon–1:30 PM	K–12	207B, Conv. Center	Hands-On Science with Classroom Critters (p. 70)
12 Noon–1:30 PM	9–C	103A, Conv. Center	Favorite Biology Lab Activities and Games from Flinn (p. 68)
12 Noon–1:30 PM	6–C	101B, Conv. Center	Shaken Up: Teaching About Childhood Sports Injuries and the Brain (p. 68)
12 Noon–1:30 PM	6–12	206A, Conv. Center	Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (p. 70)
12 Noon–1:30 PM	5	102B, Conv. Center	DNA Replication and Transcription—No More Gumdrops and Toothpicks! (p. 68)
12 Noon–1:30 PM	9–C	006C, Conv. Center	Human Physiology with PASCO (p. 67)
12 Noon–1:30 PM	4–8	204B, Conv. Center	Ecology Adventures: Motivating Students Through Project Based Learning (p. 70)
12:15–1:45 PM	G	Grand Blrm. C2, Conv. Center	Nature's Medicinal Remedies in the Treatment of Diabetes and Cancer (p. 73)
12:30–1:30 PM	M–H	Alamo Salon D, Marr. Riverwalk	Bird Islands: Exploring Biodiversity Using Interactive Geospatial PDFs to Address the New Frameworks (p. 83)
12:30–1:30 PM	I	Bowie C, Grand Hyatt	SCST Marjorie Gardner Lecture: Beyond Assessing Knowledge: Card Sorting Superheroes, and Moving Toward Measuring Biological Expertise (p. 74)
12:30–1:30 PM	M–H	Alamo Salon F, Marr. Riverwalk	Integrating Bioethical Case Studies into the Science Curriculum (p. 80)
12:30–1:30 PM	M–C	Alamo Salon C, Marr. Riverwalk	Fun Science to Stimulate Inquiry (p. 83)
12:30–1:30 PM	G	Alamo Salon E, Marr. Riverwalk	Forensic Analysis of Pollen (p. 80)
1:00–1:30 PM	E	208, Conv. Center	My Big Backyard (p. 84)
1:00–3:00 PM	9–C	217C, Conv. Center	Ecology to Enzymes to Industry (AP Big Idea 4) (p. 85)
2:00–3:00 PM	E–M	208, Conv. Center	Engineering a Pollinator (p. 93)
2:00–3:00 PM	M–H	Bonham B, Grand Hyatt	DuPont Session: Shuffle It Up! Understanding Photosynthesis and Respiration (p. 94)
2:00–3:00 PM	E–H	Alamo Salon C, Marr. Riverwalk	Butterfly Bonanza (p. 95)
2:00–3:00 PM	M–H	Alamo Salon F, Marr. Riverwalk	Food Biology: Scientific Inquiry Through Food Production (p. 92)
2:00–3:00 PM	H	Alamo Salon D, Marr. Riverwalk	The Natural Selection of M&M's® (p. 95)
2:00–3:30 PM	K–5	101B, Conv. Center	Science the National Geographic Way! (p. 97)
2:00–3:30 PM	6–12	206A, Conv. Center	Introduction to Protozoa (p. 98)
2:00–3:30 PM	9–C	210A, Conv. Center	Biology with Vernier (p. 98)
2:00–3:30 PM	6–C	204A, Conv. Center	Build It! Increase Student Engagement with the Anatomy in Clay® Learning System (p. 97)
2:00–3:30 PM	9–12	211, Conv. Center	Hands-On Help for the New AP Biology Labs (p. 99)
2:00–3:30 PM	9–C	008B, Conv. Center	AP Biology: Strategies for Teaching Within the New Framework (Free Samples) (p. 97)
2:00–3:30 PM	9–C	008A, Conv. Center	HHMI's <i>The Making of the Fittest: The Coevolution of Genes and Culture</i> in Your Classroom (p. 96)
2:00–3:30 PM	9–12	204B, Conv. Center	Extra, Extra! Read All About It! Taking Biology from the News to the Classroom (p. 98)
2:00–3:30 PM	7–C	212B, Conv. Center	Creating a Digital Strategy for STEM (p. 99)
3:00–4:30 PM	6–9	217B, Conv. Center	Engineer the Tools for Inquiry of Candy Food Dyes (p. 100)
3:30–4:30 PM	H	Alamo Salon D, Marr. Riverwalk	Evidence of Evolution: Using Real Fossil Data from the Deep Sea (p. 108)



## Schedule at a Glance Biology/Life Science, cont.

3:30–4:30 PM	M–H	Alamo Salon F, Marr. Riverwalk	Using Fiction to Teach Science Facts (p. 105)
3:30–4:30 PM	G	Alamo Salon E, Marr. Riverwalk	Wriggling Diversity into the Classroom: Vermiculture as a Tool for Including Gender and Cultural Sensitivity Discussion (p. 105)
3:30–4:30 PM	E–M	208, Conv. Center	The Foundation of Living Things: The Cell for Elementary Students (p. 106)
4:00–5:30 PM	6–12	007D, Conv. Center	Homeostasis and Diabetes (p. 110)
4:00–5:30 PM	9–12	207B, Conv. Center	Decoding Human Genetics with Inquiries in Science® (p. 111)
4:00–5:30 PM	K–8	206A, Conv. Center	Picking Apart the Owl Pellets’ Potential (p. 111)
5:00–6:00 PM	P–E	202A, Conv. Center	Growing a Garden of Learners (p. 113)
5:00–6:00 PM	M–H	201, Conv. Center	Photosynthesis: The Musical! (p. 113)
5:00–6:00 PM	H	Alamo Salon F, Marr. Riverwalk	Frog’s Blood vs. Human Blood: Comparing RBC as a Means to Understand Cellular Respiration and SA/V (p. 115)
5:00–6:00 PM	G	Conf. Room 16, Marr. Rivercenter	Feel the Pressure—Modeling Heart Health (p. 117)
5:00–6:00 PM	E	208, Conv. Center	Making Science Meaningful with Mealworms (p. 116)
5:00–6:00 PM	M–H	Alamo Salon D, Marr. Riverwalk	What Makes Kids Want to Learn? Food! (p. 118)

### Chemistry/Physical Science

8:00–9:00 AM	H	202B, Conv. Center	Activities That Lead to Conceptual Understanding of Chemistry Content (p. 16)
8:00–9:00 AM	G	Alamo Salon B, Marr. Riverwalk	Transforming Chemistry Instruction Through Modeling Experiences (p. 22)
8:00–9:00 AM	H	Travis, Marr. Riverwalk	Addressing Misconceptions During the First Two Weeks of Chemistry (p. 22)
8:00–9:30 AM	9–12	203A, Conv. Center	Color, Spectrophotometry, and Teaching the Structure of the Atom (p. 32)
8:00–9:30 AM	9–12	006B, Conv. Center	The Next Generation of Science Virtual Labs for the Entire Science Curriculum—No Cleanup Required! (p. 30)
8:00–9:30 AM	9–12	007D, Conv. Center	<i>Living By Chemistry</i> : Create a Table (p. 30)
8:00–9:30 AM	5–8	Salon E, Marr. Rivercenter	You Be The Chemist Challenge (p. 35)
8:00–9:30 AM	9–12	207B, Conv. Center	Carolina Chemistry Investigations for Advanced Chemistry (p. 33)
9:30–10:00 AM	G	Alamo Salon B, Marr. Riverwalk	Measuring Minority Students’ Learning in Science and Technology (p. 39)
9:30–10:30 AM	H	Travis, Marr. Riverwalk	Write Your Way to Success: Grant Writing Strategies for You and Your Chemistry Students (p. 44)
10:00–11:30 AM	6–12	Grand Ballroom C1, Conv. Center	Flinn Scientific Morning of Chemistry: The Chemistry of Teaching (p. 54)
10:00–11:30 AM	6–C	007D, Conv. Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 52)
11:00 AM–12 Noon	M–H	Texas Ballroom F, Grand Hyatt	Next Generation Science Standards: Teacher Insights from the Writing Team—Physical Sciences (Middle/High School) (NGSS @ NSTA) (p. 59)
11:00 AM–12 Noon	I	Alamo Salon B, Marr. Riverwalk	Send the Right Message: Excite and Engage Kids in STEM with Your Words, Images, and Real-World Connections (p. 60)
11:00 AM–12 Noon	H–C	Lone Star Blrm. A, Grand Hyatt	Tips and Resources for First-Year Chemistry Teachers (p. 58)
11:00 AM–12 Noon	M–H	Mission A, Grand Hyatt	The Shell Science Lab Challenge: Equipment for Your Lab! (p. 58)
11:00 AM–12 Noon	H/S	Presidio C, Grand Hyatt	NARST Session: Finding Science in the Everyday: Balancing Demonstration and Contextualization in the Chemistry Classroom (p. 58)
12 Noon–1:30 PM	4–C	214A, Conv. Center	Fantastical Chemistry Demos for All Classrooms (p. 72)
12 Noon–1:30 PM	9–C	210A, Conv. Center	Chemistry with Vernier (p. 70)
12 Noon–1:30 PM	6–C	007D, Conv. Center	Exploring the Molecular World: Scientifically Accurate Visualization and Simulation Tools (p. 68)
12 Noon–1:30 PM	9–12	203A, Conv. Center	Mastering the Chemical Formula: An Effective Way to Teach Subscripts and Coefficients (p. 69)
12:30–1:30 PM	G	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Uncovering K–12 Students’ (and Teachers’) Ideas About Matter and Energy (p. 78)
12:30–1:30 PM	M	Bonham D, Grand Hyatt	Middle School Chemistry: Big Ideas About the Very Small (p. 82)
12:30–1:30 PM	M–H	Travis, Marr. Riverwalk	Tasty Chemistry: The Chemistry of Food (p. 80)
12:30–1:30 PM	M–H	Alamo Salon B, Marr. Riverwalk	Get Moving! The Chemistry Edition (p. 80)
2:00–3:00 PM	H	Travis, Marr. Riverwalk	Chemical Web Experiment (p. 92)

## Schedule at a Glance Chemistry/Physical Science, cont.

2:00–3:00 PM	C	Seguin A, Grand Hyatt	Involving Students in Test Scoring in the Classroom Enhances Understanding and Achievement in Chemistry Among Secondary School Students (p. 91)
2:00–3:00 PM	C	Seguin A, Grand Hyatt	Involving Students in Test Scoring in the Classroom for Better Understanding and Achievement in Algebra (p. 91)
2:00–3:30 PM	9–12	203A, Conv. Center	Distillation: Simple and Fascinating Experiments in the Chemistry of Aromas and Smells (p. 97)
2:00–3:30 PM	10–12	103A, Conv. Center	New Guided Inquiry Labs for Advanced Placement® Chemistry from Flinn Scientific (p. 97)
2:00–3:30 PM	9–12	207B, Conv. Center	Flipping Out Over Chemistry! (p. 98)
3:30–4:30 PM	6–12	205, Conv. Center	Active Chemistry: Ahead of Its Time in Capturing the Essence of the NGSS and STEM (p. 108)
3:30–4:30 PM	M–H	Alamo Salon A, Marr. Riverwalk	Simulating Chemical Reactions with Stop-Motion Animation (p. 108)
3:30–4:30 PM	M–H/S	Alamo Salon C, Marr. Riverwalk	Exploring the 2012 ACS Guidelines and Recommendations for Teaching High School Chemistry (p. 105)
3:30–4:30 PM	G	Lone Star Blrm. F, Grand Hyatt	My-Pad, Your-Pad. Why-Pad? iPad! (p. 107)
3:30–4:30 PM	H	Travis, Marr. Riverwalk	Solids: The Neglected “State” of Chemistry (p. 105)
4:00–5:30 PM	9–12	006D, Conv. Center	STEM: Air Bags—Project-based Chemistry Activities (p. 109)
4:00–5:30 PM	5	211, Conv. Center	Chemistry In-the-Bag (p. 111)
5:00–6:00 PM	H	Travis, Marr. Riverwalk	Basic Polymer Chemistry for the High School Classroom (p. 115)
5:00–6:00 PM	H–C	Crockett A, Grand Hyatt	AP Chemistry Activities for Conceptual Understanding (p. 114)
5:00–6:00 PM	M–H	Alamo Salon A, Marr. Riverwalk	Student-friendly Microscale Chemistry Using Polymers (p. 118)
5:00–6:00 PM	M–C	Alamo Salon B, Marr. Riverwalk	Incorporate the History of Chemistry into Your Teaching with the New PBS Television Program <i>Mystery of Matter: Search for the Elements!</i> (p. 115)
5:00–6:00 PM	E–M	216A, Conv. Center	Physical Science, Technology, and Action Research in K–8 Classrooms (p. 116)

## Earth/Space Science

8:00–9:00 AM	E–H	001A, Conv. Center	Understanding and Studying Clouds in the Elementary Classroom (p. 23)
8:00–9:00 AM	G	101A, Conv. Center	Interdisciplinary Space Exploration with NASA and WWT (p. 16)
8:00–9:00 AM	I	213A, Conv. Center	ASTC Session: Online Astronomy Teacher Professional Development—Project Share and <i>The New York Times</i> Knowledge Network (p. 17)
8:00–9:00 AM	M–H	003A, Conv. Center	Developing the Mind’s Eye: Assessing Spatial Thinking (p. 16)
8:00–9:00 AM	M–H	001B, Conv. Center	The IRIS In-Class Project: Free Seismology Learning Sequences Accompanied by Online Professional Development (p. 23)
8:00–9:00 AM	K–5	103B, Conv. Center	NASA’s Next Generation Science Classroom (p. 28)
9:30–10:30 AM	6–8	103B, Conv. Center	NASA’s Next Generation Science Classroom (p. 49)
9:30–10:30 AM	6–12	205, Conv. Center	Earth and Space Science—More Pertinent Today, More Important in the Next Generation Science Standards (p. 50)
9:30–10:30 AM	G	001A, Conv. Center	What’s Up? Classroom Activities from the Association of Astronomy Educators, Session I: Sun, Earth, and Planets (p. 44)
9:30–10:30 AM	G	101A, Conv. Center	A Robotic WISSARD Integrates STEM into Your Classroom! (p. 40)
9:30–10:30 AM	E	202A, Conv. Center	Investigating Soil in the Elementary Classroom (p. 45)
9:30–10:30 AM	M–H	001B, Conv. Center	Weather Headlines: A Tool for Science Learning (p. 44)
9:30–10:30 AM	I	003A, Conv. Center	National Marine Sanctuaries—Bringing Ocean Technology into Your Classroom (p. 40)
9:30–10:30 AM	E–H	Ballroom A, Conv. Center	NESTA Session: National Earth Science Teachers Association Geology Share-a-Thon (p. 46)
9:30–10:30 AM	E–M	002, Conv. Center	NASA CERES S’COOL Project: Become a S’COOL Cloud Observer! (p. 44)
10:00–11:30 AM	7–C	008A, Conv. Center	HHMI’s <i>The Day the Mesozoic Died</i> Classroom Resources (p. 52)
10:00–11:30 AM	5	007B, Conv. Center	Volcanoes and the Ring of Fire (p. 52)
10:00–11:30 AM	G	006B, Conv. Center	The Next Generation Science Standards: What They Mean for Earth and Space Science (p. 51)
11:00 AM–12 Noon	10–12	103B, Conv. Center	NASA’s Next Generation Science Classroom (p. 64)
11:00 AM–12 Noon	E–H	Ballroom A, Conv. Center	NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon (p. 62)

## Schedule at a Glance Earth/Space Science, cont.

11:00 AM–12 Noon	M–C	101A, Conv. Center	Exploring the Hubble Universe (p. 61)
11:00 AM–12 Noon	E–M	002, Conv. Center	Modeling the Night Sky (p. 61)
11:00 AM–12 Noon	M–H	003A, Conv. Center	NASA INSPIRE: A Five-Year Retrospective on Online Learning (p. 56)
11:00 AM–12 Noon	M–H	001B, Conv. Center	Exploring Seafloor Spreading with Data from the Integrated Ocean Drilling Program (IODP) (p. 61)
11:00 AM–12 Noon	I	001A, Conv. Center	Incorporating ASL in Astronomy Education—for Deaf and Hearing Students (p. 61)
12 Noon–1:30 PM	6–C	008A, Conv. Center	EarthViewer—4.6 Billion Years of Earth History at Your Fingertips (p. 68)
12:30–1:00 PM	5–8	Booth #1500, Exh. Hall	Welcome to the Neighborhood: An Overview of the Solar System (p. 74)
12:30–1:30 PM	M–H	Texas Ballroom F, Grand Hyatt	Next Generation Science Standards: Teacher Insights from the Writing Team—Earth and Space Sciences (Middle/High School) (NGSS @ NSTA) (p. 78)
12:30–1:30 PM	M–H	001A, Conv. Center	Silent Earthquakes Beneath Your Feet? How a Magnitude 7 Earthquake Can Occur Without Being Felt by Anyone! (p. 80)
12:30–1:30 PM	G	Conf. Room 3/4, Marr. Rivercenter	SYM-1 Follow-Up Session: A Changing Climate Here and Now (p. 79)
12:30–1:30 PM	E	001B, Conv. Center	Weather or Not: K–4 Connections for Weather Units (p. 80)
12:30–1:30 PM	G	101A, Conv. Center	Hands-On/Minds-On Science: Meeting the Needs of Diverse Learners in a Collaborative Setting (p. 81)
12:30–1:30 PM	E–M	002, Conv. Center	Understanding the Solar System with Active Modeling (p. 80)
12:30–1:30 PM	E–H	Ballroom A, Conv. Center	NESTA Session: National Earth Science Teachers Association Earth System Science Share-a-Thon (p. 81)
1:30–3:00 PM	G	Grand Blrm. C3, Conv. Center	When the World Was Warm—Looking Back to the Future (p. 85)
2:00–3:00 PM	E–M	002, Conv. Center	Teaching Science Academic Vocabulary for Comprehension and Retention (p. 92)
2:00–3:00 PM	E–M	201, Conv. Center	Adapting Space Adventures: Using Real NASA Data to Engage Students with Special Needs (p. 93)
2:00–3:00 PM	M–H	001B, Conv. Center	Are Earth's Features Unique? (p. 92)
2:00–3:00 PM	M–H/I	101A, Conv. Center	NASA: Inquiry Activities for Learning About Light and the Electromagnetic Spectrum and Multiwavelength Astronomy (p. 92)
2:00–3:00 PM	G	001A, Conv. Center	Ice Core Records—From Volcanoes to Supernovas (p. 92)
2:00–3:00 PM	I	003A, Conv. Center	Jurassic Expedition: Paleontology Field School (p. 87)
2:00–3:00 PM	M–H	Ballroom A, Conv. Center	NESTA Session: Climate Change Classroom Toolkit (p. 93)
2:00–3:30 PM	5	007B, Conv. Center	They Come from Outer Space (p. 96)
2:00–3:30 PM	6–8	006C, Conv. Center	Earth Science Investigation: Modeling Ocean Circulation and Layers of the Atmosphere (p. 96)
3:00–4:30 PM	5–8	214C, Conv. Center	A Sneak Preview of <i>FOSS Earth History</i> , 2nd Edition for Middle School (p. 100)
3:30–4:30 PM	E–H	Ballroom A, Conv. Center	NESTA Session: Let's Get Well Grounded! (p. 106)
3:30–4:30 PM	G	001A, Conv. Center	Pulsating Variable Stars and the H-R Diagram (p. 105)
3:30–4:30 PM	M	001B, Conv. Center	NASA Triad: Bringing NASA Resources to the Secondary Science Classroom (p. 105)
3:30–4:30 PM	M–H	003A, Conv. Center	A Project-based Approach to Weather and Climate (p. 101)
3:30–4:30 PM	M–H/I	101A, Conv. Center	NASA's MMS Mission: Using iPads to Create Space Weather Forecasts (p. 106)
3:30–4:30 PM	E–M	002, Conv. Center	The Little Spacecraft That Could—DID! MESSENGER Mission Accomplished (p. 106)
5:00–5:30 PM	G	212A, Conv. Center	NASA's Know Your Earth Project (p. 112)
5:00–6:00 PM	M–H	003A, Conv. Center	A Different Approach to Earth Science Education (p. 113)
5:00–6:00 PM	M–H	001B, Conv. Center	Discovering Air Quality in Your Area Using NASA Data Visualization Tools (p. 116)
5:00–6:00 PM	E–M	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Five E(z) Guidelines for Designing Research-informed Science Lesson Sequences (p. 115)
5:00–6:00 PM	I	001A, Conv. Center	Teaching Climate Science Through Data and Visualizations (p. 116)
5:00–6:00 PM	E–M	002, Conv. Center	Dust Hunt! Modeling How Stars and Planets Form (p. 116)

# Schedule at a Glance Environmental Science

## Environmental Science

8:00–9:00 AM	H	Texas Ballroom E, Grand Hyatt	Playing Games to Learn Complex Environmental Science Concepts (p. 26)
8:00–9:00 AM	E	208, Conv. Center	Your Students Stuck Inside? No Problem; Bring the Outside In! (p. 17)
8:00–9:00 AM	I	Republic B, Grand Hyatt	Global Connections: Forests of the World (p. 25)
8:00–9:00 AM	M–C	Conf. Room 3/4, Marr. Rivercenter	SYM-1 Follow-Up Session: Get Real! Use Real-Time NOAA Data to Understand Our Changing World (p. 20)
8:00–9:30 AM	6–8	006D, Conv. Center	Renewable Energy Exploration with SPARKscience and iPad (p. 30)
8:00–9:30 AM	9–12	102A, Conv. Center	Exploring Alternative Energy and Careers in STEM (p. 32)
9:30–10:30 AM	H–C	Seguin A, Grand Hyatt	Using Formative Assessment Data to Improve Student Achievement (p. 42)
9:30–10:30 AM	G	Republic B, Grand Hyatt	Wetlands and Watersheds—An Inquiry Approach! (p. 47)
9:30–10:30 AM	G	Texas Ballroom E, Grand Hyatt	Mobile Science: Unlock the Potential of iPads in the Field (p. 47)
10:00–10:30 AM	I	Crockett D, Grand Hyatt	Teaching Climate and Energy: The CLEAN Collection of Peer-reviewed Climate and Energy Learning Resources (p. 50)
11:00 AM–12 Noon	G	Texas Ballroom E, Grand Hyatt	The Science of Service Learning: One School’s Journey to Promote Science Knowledge Through Service (p. 59)
11:00 AM–12 Noon	E–M	208, Conv. Center	Understanding Our Finite World (p. 61)
11:00 AM–12 Noon	I	Republic B, Grand Hyatt	Lake St. Clair—Use or Abuse? (p. 63)
11:00 AM–12 Noon	G	Crockett D, Grand Hyatt	Focusing On Wildlife Conservation: Developing Public Service Announcements for Critically Endangered Species (p. 57)
12 Noon–1:30 PM	5–8	006A, Conv. Center	A Tour for Your Inclusion Classes—How to Make It Work! (p. 66)
12:30–1:30 PM	M	Republic B, Grand Hyatt	Ocean Plastic Pollution: Examining Issues and Solutions in a Middle School Classroom (p. 82)
12:30–1:30 PM	G	Crockett D, Grand Hyatt	Wind Energy—How Much and at What Price? (p. 76)
12:30–1:30 PM	M–C	Crockett D, Grand Hyatt	Using Technology to Connect Field Studies to the Classroom (p. 76)
12:30–1:30 PM	C	Bonham E, Grand Hyatt	Practical Technology for Environmental Field Studies (p. 82)
12:30–1:30 PM	E–M	Salon F, Marr. Rivercenter	Outdoor Science Pathway Session: Teaching Outdoor Science Through Trade Books (p. 82)
1:30–3:00 PM	6–12	102A, Conv. Center	Exploring STEM Careers: Water and Our Environment (p. 86)
2:00–3:00 PM	G	Grand Blrm. C1, Conv. Center	The Climate Science Debate: What Does the Science Tell Us and Why People on Both Sides Are So Angry About It (p. 87)
2:00–3:00 PM	E–H	Conf. Rm 17/18, Marr. Rivercenter	SYM-2 Follow-Up Session: Monarch Life Cycles and Raising Monarchs in Captivity (p. 94)
2:00–3:00 PM	E–M	Salon F, Marr. Rivercenter	Outdoor Science Pathway Session: Even More Math and Science Integration (p. 95)
2:00–3:00 PM	M–H	Republic B, Grand Hyatt	Facing the Future: Global Connections and Sustainability (p. 94)
2:00–3:00 PM	M–C	Conf. Room 16, Marr. Rivercenter	Benthic Macroinvertebrates (p. 94)
2:00–3:00 PM	G	Crockett D, Grand Hyatt	Be a “Flipper” for Ocean Literacy (p. 90)
2:00–3:00 PM	G	213A, Conv. Center	ASTC Session: Art and Science: Building Community Partnerships for Interdisciplinary Programs (p. 87)
2:00–3:00 PM	P–M	Bowie C, Grand Hyatt	SCST Session: Promoting Environmental Literacy Through the New Core Standards (p. 88)
2:00–3:30 PM	6–12	007D, Conv. Center	Pollution and Acid Rain Activities (p. 96)
3:30–4:30 PM	E–H	Conf. Rm 17/18, Marr. Rivercenter	SYM-2 Follow-Up Session: Classroom Lessons with Monarchs (p. 107)
3:30–4:30 PM	E–M	Salon F, Marr. Rivercenter	Outdoor Science Pathway Session: Growing Curricular Inclusion in an Outdoor Classroom (p. 105)
3:30–4:30 PM	M–H	Republic B, Grand Hyatt	Bird’s Eye View: Exploring Human Impacts on the Environment Across the Globe Using Google Earth (p. 107)
3:30–4:30 PM	I	207A, Conv. Center	STEM Digital: Digital Cameras as Scientific Instruments (p. 102)
3:30–4:30 PM	G	Conf. Room 6, Marr. Rivercenter	Order of Magnitude Estimates in Urban Transportation (p. 104)
4:00–5:30 PM	9–C	008A, Conv. Center	Paleoclimate and How It Helps Us Understand Current Climate Change. Featuring HHMI’s New DVD <i>Changing Planet: Past, Present, Future</i> (p. 110)
4:00–5:30 PM	G	006A, Conv. Center	Take the Plunge with the New Project WET 2.0 (p. 109)
5:00–6:00 PM	M–H	Republic B, Grand Hyatt	But I’m Not a Reading Teacher...Using Complex Texts to Enrich the Science Classroom (p. 117)

## Schedule at a Glance Environmental Science, cont.

5:00–6:00 PM	G	Texas Ballroom E, Grand Hyatt	Investigating Climate Change Issues with Google Earth and Web-based Activities (p. 115)
5:00–6:00 PM	G	Crockett D, Grand Hyatt	An Arctic Connection: A Teacher Exchange Program Among U.S. and Swedish Educators (p. 114)

### Integrated/General

8:00–8:30 AM	E–H	201, Conv. Center	A Little PDA Goes a Long Way: Content Literacy Strategies (p. 16)
8:00–9:00 AM	M/S	Lone Star Blrm. A, Grand Hyatt	Terrific Science Games for Middle Schools (p. 24)
8:00–9:00 AM	I	Lone Star Blrm. B, Grand Hyatt	Drawings Add to Data...and Students Like to Do Them! (p. 24)
8:00–9:00 AM	M–H	Conf. Room 15, Marr. Rivercenter	Integrating Probes in the Interactive Notebook (p. 20)
8:00–9:00 AM	M–H	Conf. Room 15, Marr. Rivercenter	Using Role-Play to Increase Student Understanding of Abstract Biological Concepts (p. 20)
8:00–9:00 AM	G	Travis A, Grand Hyatt	NSELA Session: Scaffolding Toward Argumentation: <i>A Framework for K–12 Science Education</i> and Its Implications for Inquiry (p. 20)
8:00–9:00 AM	H–C/I	Bonham D, Grand Hyatt	Cell Phones in Science Class!?! (p. 24)
8:00–9:00 AM	G	Bowie B, Grand Hyatt	Show Me the Data! (p. 24)
8:00–9:00 AM	C/S	Lone Star Blrm. E, Grand Hyatt	Migrant Students Experience Success Through a University Partnership (p. 18)
8:00–9:00 AM	E–M	212A, Conv. Center	Interactive Science Notebooks: Putting the Next Generation Practices into Action (p. 17)
8:00–9:00 AM	M–H	Salon M, Marr. Rivercenter	Equal Access to Science: Universal Design and Students with Disabilities (p. 26)
8:00–9:00 AM	M	Bonham C, Grand Hyatt	The Problem with Plastics (p. 24)
8:00–9:00 AM	M–H	Alamo Salon E, Marr. Riverwalk	Driven to Learn: How Questions Can Drive Instruction (p. 22)
8:00–9:00 AM	E	213B, Conv. Center	Telling the Science Story: Finding a Common Ground Between the Common Core and NRC <i>Framework/NGSS</i> (p. 24)
8:00–9:00 AM	G	Presidio A/B, Grand Hyatt	Planning and Designing Safe, Sustainable, and Flexible Facilities for Inquiry/Project-based Science (Science Facilities 101) (p. 25)
8:00–9:00 AM	E–M	217A, Conv. Center	Science Fair with Flair: Using Desk Drawer Materials (p. 24)
8:00–9:00 AM	E–H	Crockett C, Grand Hyatt	Writing to Learn Through Science Notebooks/Journals in Elementary and Secondary Classrooms (p. 18)
8:00–9:00 AM	G	Texas Ballroom C, Grand Hyatt	Enhancing Self-efficacy in Elementary Science Teaching: Effects of a Multi-Year, Whole-School Professional Learning Program (p. 19)
8:00–9:00 AM	G	Seguin A, Grand Hyatt	Creating a STEM School District (p. 19)
8:00–9:00 AM	M–H/I	Salon L, Marr. Rivercenter	WISP Pathway Session: Reading and Writing the News (p. 20)
8:00–9:00 AM	G	Presidio C, Grand Hyatt	NARST Session: The Interaction of Knowledge About and Teaching of Nature of Science (p. 18)
8:00–9:00 AM	6–12	205, Conv. Center	Turn Your Science Classroom into a STEM Classroom with a WebCam Laboratory (p. 28)
8:00–9:00 AM	4	007C, Conv. Center	Hands-On Hydropower (p. 28)
8:00–9:00 AM	G	207A, Conv. Center	Digitize the Learning Experience and Take IT Mobile (p. 16)
8:00–9:00 AM	E	Texas Ballroom F, Grand Hyatt	Next Generation Science Standards: Teacher Insights from the Writing Team—Elementary Level (NGSS @ NSTA) (p. 20)
8:00–9:15 AM	K–6	214B, Conv. Center	Science, the Literacy Connection, and the Common Core (p. 29)
8:00–9:30 AM	G	214A, Conv. Center	The Private Eye® Way to Magnify Minds: How to Fire Up STEM and Common Core State Standards' Literacy Goals (p. 34)
8:00–9:30 AM	K–5	204B, Conv. Center	REAL School Gardens: Life Science Comes Alive (p. 33)
8:00–9:30 AM	K–12	008B, Conv. Center	Space Camp and 21st-Century Learning: The Crossroads of Formal and Informal Education (p. 32)
8:00–9:30 AM	6–9	007B, Conv. Center	Hard Doesn't Mean Bad—Helping Students Understand That Facing Challenges Is a Good Thing (p. 30)
8:00–9:30 AM	K–8	210A, Conv. Center	K–8 Science with Vernier (p. 33)
8:00–9:30 AM	K–12	209, Conv. Center	Chase Your Curiosity and Develop Critical Skills with Discovery Education Science Techbook (p. 33)
8:00–10:00 AM	P–M	Ballroom B, Conv. Center	Elementary Extravaganza (p. 35)

## Schedule at a Glance Integrated/General, cont.

8:00–10:00 AM	K–6	214C, Conv. Center	Using Science Notebooks to Impact Student Learning with FOSS (p. 35)
8:30–9:30 AM	E–H	Crockett A, Grand Hyatt	Integrating Science and the Common Core Standards (p. 36)
8:30–9:30 AM	G	Grand Blrm. C3, Conv. Center	My Wild Life (p. 37)
8:30–9:30 AM	G	Grand Blrm. C2, Conv. Center	What a Difference a Measurement Makes (p. 36)
9:00 AM–12 Noon	G	215, Conv. Center	ESP: Unique Features of Programs That Meet “More Emphasis” Features in the NSES (p. 38)
9:30–10:30 AM	G	207A, Conv. Center	Going Beyond Data Collection: Sharing in a Science Classroom (p. 40)
9:30–10:30 AM	G	Lone Star Blrm. B, Grand Hyatt	No Child Left Behind: An Update on the Federal Education Law (p. 42)
9:30–10:30 AM	S	Bonham E, Grand Hyatt	CSSS Session: Science Ideas and Practices: Assessing Both Simultaneously (p. 46)
9:30–10:30 AM	M–H	Conf. Room 6, Marr. Rivercenter	AMSE Session: The Literacy STEM Connection (p. 43)
9:30–10:30 AM	G	Salon K, Marr. Rivercenter	McREL Pathway Session: Designing Effective Science Lessons—Revealing and Addressing Preconceptions (p. 48)
9:30–10:30 AM	G	Conf. Rm 3/4, Marr. Rivercenter	SYM-1 Follow-Up Session: Get Muddy! How to Adopt One of Our Nation’s Estuaries and Get Your Students Excited About Data (p. 47)
9:30–10:30 AM	E–H	Crockett B, Grand Hyatt	Supporting All Learners (p. 41)
9:30–10:30 AM	S	Bonham D, Grand Hyatt	Connecting the Circuit: Inquiry, Literacy, and the Brain (p. 46)
9:30–10:30 AM	G	Presidio C, Grand Hyatt	NARST Session: Reaching More Students by Providing Visual Contextualization During Assessments (p. 42)
9:30–10:30 AM	G	Travis A, Grand Hyatt	NSELA Session: Tools for Leaders (p. 43)
9:30–10:30 AM	M–H	Mission A, Grand Hyatt	NSTA Press® Session: Brain-powered Science Teaching and Learning with Discrepant Events (p. 42)
9:30–10:30 AM	G	Salon F, Marr. Rivercenter	Science, Reading, and Math, Oh My! Courage to Integrate (p. 43)
9:30–10:30 AM	P–E	213B, Conv. Center	Kindergarten Engagement Lessons (p. 40)
9:30–10:30 AM	H	Conf. Room 16, Marr. Rivercenter	Meltdown: Using a Nuclear Disaster to Teach Science (p. 47)
9:30–10:30 AM	G	Texas Ballroom C, Grand Hyatt	Trends in Credit Attainment of High School Students in Science and Math Courses in Texas (p. 42)
9:30–10:30 AM	M–H	Salon M, Marr. Rivercenter	Interactive Word Walls Come to Life (p. 48)
9:30–10:30 AM	H–C/S	Crockett A, Grand Hyatt	Promising Practices Bridge the Gap: A STEM High School Needs Assessment (p. 41)
9:30–10:30 AM	G	Bowie B, Grand Hyatt	Using a “Strengths-based” Approach to Teaching Science to Students with Disabilities (p. 46)
9:30–10:30 AM	S	Mission B, Grand Hyatt	Effective Professional Development with NSTA Resources (p. 42)
9:30–10:30 AM	G	Presidio B, Grand Hyatt	The Architects Have Started Without Me: What Do I Do Now? (Science Facilities 102) (p. 47)
9:30–10:30 AM	M	Bonham C, Grand Hyatt	Water Water Everywhere...But Would You Swim in the Passaic River? (p. 46)
9:30–10:30 AM	E–M	216B, Conv. Center	Science Reviews: Point by Point (p. 40)
9:30–10:30 AM	G	201, Conv. Center	Diverse Science Tools for Diverse Science Learners (p. 44)
9:30–10:30 AM	I	Lone Star Blrm. C, Grand Hyatt	Science Teacher Preparation Revisited (p. 42)
9:30–10:30 AM	E	217D, Conv. Center	An Amazing Beginning: Starting Interactive Science Notebooks with Your Students! (p. 45)
9:30–10:30 AM	G	Crockett C, Grand Hyatt	Exploring the Wonder of Science and Children’s Literature for the Next Generation (p. 42)
9:30–10:30 AM	G	Crockett A, Grand Hyatt	Students as Scientists (p. 41)
9:30–10:30 AM	G	212A, Conv. Center	Teach STEM? NASA Explorer Schools Can Help! (p. 40)
9:30–10:30 AM	G	Lone Star Blrm. E, Grand Hyatt	Engaging the Elementary School Community in Innovative and Meaningful STEM Activities (p. 42)
9:30–10:30 AM	H/S	Conf. Room 15, Marr. Rivercenter	Deploying iPads One to One in a High School (p. 43)
9:30–11:30 AM	4	007C, Conv. Center	Wind-energized Classroom (p. 50)
9:30 AM–12:30 PM	G	Salon L, Marr. Rivercenter	WISP Pathway Session: Integrating Science and Literacy—A Journey, Not a Destination (p. 50)
10:00–11:15 AM	K–8	214B, Conv. Center	Identifying, Clarifying, and Designing Experiments (p. 51)
10:00–11:30 AM	K–5	206B, Conv. Center	Integrating Common Core Writing, Speaking, and Listening Strategies into Science Instruction (p. 53)
10:00–11:30 AM	3–10	214A, Conv. Center	What the Heck Happened?! (p. 54)

## Schedule at a Glance Integrated/General Science, cont.

10:00–11:30 AM	K–12	006C, Conv. Center	Equip Your iPad or Android Tablet for Science with SPARKvue® HD, a Full-featured Science Application (p. 51)
10:00–11:30 AM	7–C	212B, Conv. Center	Unleashing Your Students' Inner Inventor—Robots, Video Games, and DIY! (p. 54)
10:00–11:30 AM	2–5	007A, Conv. Center	Enhancing the Elementary Classroom Through Robotics (p. 52)
10:00–11:30 AM	9–12	008B, Conv. Center	The Basics of Flipped Learning, Getting Started: A Panel Discussion of Experts (p. 52)
10:30 AM–12 Noon	G	Grand Blrm. C3, Conv. Center	Icons and Innovation in Paleontology (p. 55)
10:30 AM–12 Noon	3–6	102A, Conv. Center	Exploring STEM with K'NEX® (p. 56)
10:30 AM–12:30 PM	K–6	214C, Conv. Center	FOSS Formative Assessment: Making Student Thinking Visible (p. 56)
11:00 AM–12 Noon	6–8	205, Conv. Center	Project-Based Inquiry Science: PBIS™—Exemplifying Blending Practices, Core Ideas, and Crosscutting Concepts (p. 64)
11:00 AM–12 Noon	G	Salon K, Marr. Rivercenter	McREL Pathway Session: Designing Effective Science Instruction—the Role of Science Discourse (p. 63)
11:00 AM–12 Noon	E–M	Salon F, Marr. Rivercenter	Outdoor Science Pathway Session: Integrating Mathematics and Science (p. 60)
11:00 AM–12 Noon	G	Conf. Rm 3/4, Marr. Rivercenter	SYM-1 Follow-Up Session: Teaching About Climate Change—Here and Now (p. 59)
11:00 AM–12 Noon	G	Conf. Room 12, Marr. Rivercenter	WestEd Pathway Session: Assessment-centered Teaching (p. 63)
11:00 AM–12 Noon	G	Travis A, Grand Hyatt	Write for an NSTA Journal (p. 59)
11:00 AM–12 Noon	I	213A, Conv. Center	ASTC Session: Creating Virtual Fieldwork Experiences (VFEs): Place-based, Technology-rich Professional Development for Formal and Informal Educators (p. 57)
11:00 AM–12 Noon	E	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Picture-Perfect Science Lessons: Using Picture Books to Guide Inquiry (p. 63)
11:00 AM–12 Noon	H	Conf. Room 6, Marr. Rivercenter	AMSE Session: Enhancing a STEM Culture Through Multidisciplinary Education and Research Teams (p. 59)
11:00 AM–12 Noon	M–H	Bonham B, Grand Hyatt	DuPont Session: DuPont Presents “The Science of Packaging” (p. 62)
11:00 AM–12 Noon	E–M	216B, Conv. Center	Hot Warm-ups (p. 57)
11:00 AM–12 Noon	P–E	213B, Conv. Center	Managing Science in the Early Childhood Setting (p. 57)
11:00 AM–12 Noon	E–M	201, Conv. Center	Deduce to Reduce English Language Learners' Frustration with Science Text (p. 61)
11:00 AM–12 Noon	E–M	216B, Conv. Center	Capturing Students' Attention in the Classroom and Beyond! (p. 57)
11:00 AM–12 Noon	G	Salon A, Marr. Rivercenter	Connecting Science to Poetry, Music, and Art: A Student-centered Lesson in Making Mathematical Models from Nature (p. 63)
11:00 AM–12 Noon	G	Lone Star Blrm. B, Grand Hyatt	NSTA Press® Session: Ways to Approach Doing POE Exercises in Your Classroom (p. 63)
11:00 AM–12 Noon	G	Lone Star Blrm. E, Grand Hyatt	The Rube Goldberg Machine Contest: Invention in the Classroom (p. 58)
11:00 AM–12 Noon	G	Crockett C, Grand Hyatt	Embedding Explicit Literacy Strategies into Science Instruction to Support Struggling Learners (p. 57)
11:00 AM–12 Noon	G	Texas Ballroom C, Grand Hyatt	Integrating Engineering and Science Learning (p. 59)
11:00 AM–12 Noon	M–H	Conf. Room 15, Marr. Rivercenter	Urban Students Creating Media (p. 60)
11:00 AM–12 Noon	E–M	217A, Conv. Center	Science + Writing = Learning (p. 61)
11:00 AM–12 Noon	E	Crockett A, Grand Hyatt	Using Video to Enhance Confidence in Teaching Engineering (p. 57)
11:00 AM–12 Noon	G	Lone Star Blrm. C, Grand Hyatt	Gray Matter: Learning and Teaching Science with the Brain in Mind (p. 63)
11:00 AM–12 Noon	E–M/I	202A, Conv. Center	Magical Illusions and Scintillating Simulations for Science—It's Showtime! (p. 56)
11:00 AM–12 Noon	M	Bonham C, Grand Hyatt	Then and Now: Documenting Student Understanding (p. 62)
11:00 AM–12 Noon	H	Conf. Rm 15, Marr. Rivercenter	21st-Century Science Classroom (p. 60)
11:00 AM–12 Noon	I	Mission B, Grand Hyatt	What Teachers Told Us (p. 58)
11:00 AM–12 Noon	S	Bonham E, Grand Hyatt	NSELA Session: Take the Lead: Ensure Your Students Can Master the Science Practices (p. 62)
11:00 AM–12 Noon	E–H	Bowie B, Grand Hyatt	T.I.P.S. for Success in Using Formative Assessments (p. 62)
11:00 AM–12 Noon	M–H	Salon M, Marr. Rivercenter	Inquiry in the Garden: Integrating Open-ended, Living Projects in Science Teaching and Learning (p. 63)
11:00 AM–12 Noon	E/I	Travis D, Grand Hyatt	Inquiry Writing for Diverse Learners via Common Core (p. 59)
11:00 AM–12 Noon	M	202B, Conv. Center	Formative Assessment in Middle Grades Science (p. 57)

## Schedule at a Glance Integrated/General Science, cont.

11:00 AM–12 Noon	M–H	Conf. Room 16, Marr. Rivercenter	Switch It Up! How to Use Reflective Teaching to Keep Your Students Engaged and Learning (p. 63)
11:00 AM–12:30 PM	G	207A, Conv. Center	Google Me This: How to Make Collaboration Work in a Wiki World (p. 66)
12 Noon–1:30 PM	8–C	212B, Conv. Center	Got MotiNet?...Then Connect! (p. 72)
12 Noon–1:30 PM	6–8	007A, Conv. Center	LEGO MINDSTORMS® Education EV <sub>3</sub> : Robotics in the Middle School Classroom—Getting Started (p. 67)
12 Noon–1:30 PM	3–C	210B, Conv. Center	Connected Science System®: Leveraging Vernier Technology with Mobile Devices in the Classroom (p. 70)
12 Noon–1:30 PM	K–8	204A, Conv. Center	Fun, Fabulous Foldables® (p. 69)
12 Noon–1:30 PM	K–8	206B, Conv. Center	The Integration of Common Core Reading Informational Text and Writing in Science to Raise Achievement Scores K–8 (p. 70)
12 Noon–1:30 PM	3–12	006B, Conv. Center	Planet Diary: Using Current Events to Engage Your Students in Science (p. 66)
12 Noon–1:30 PM	K–12	209, Conv. Center	STEM Is Virtually Everywhere at Discovery (p. 70)
12 Noon–1:30 PM	K–8	008B, Conv. Center	Launching Literacy with Science Starters (p. 68)
12 Noon–1:30 PM	6–12	006D, Conv. Center	STEM: Meeting the Standards in Your Classroom (p. 67)
12 Noon–1:30 PM	K–12	007B, Conv. Center	Integrating Multimedia and SIOP Strategies in Science to Meet the Needs of ELL Students (p. 68)
12:30–1:30 PM	I	213A, Conv. Center	ASTC Session: Climate Change Action Planning, Green Teams, and Project Based Learning (PBL): Best Practices from Schools (p. 75)
12:30–1:30 PM	G	Salon K, Marr. Rivercenter	McREL Pathway Session: Engaging Students in Inquiry for Developing Scientific Thinking (p. 83)
12:30–1:30 PM	E–H	Texas Ballroom A/B, Grand Hyatt	STEM Share-a-Thon (p. 77)
12:30–1:30 PM	G	Presidio C, Grand Hyatt	NARST Session: Students Reflecting on Science Learning—Assignments, Assessments, and Rubrics (p. 77)
12:30–1:30 PM	E–M	Conf. Room 6, Marr. Rivercenter	AMSE Session: Engineering—It Is Elementary (p. 79)
12:30–1:30 PM	G	212A, Conv. Center	CESI Session: Meaningful and Creative Inquiry (p. 75)
12:30–1:30 PM	E–H	Lone Star Blrm. F, Grand Hyatt	Got the iPads, Now Let's Get "Appy"! (p. 82)
12:30–1:30 PM	E/S	213B, Conv. Center	Getting Started with the T and E in STEM (p. 81)
12:30–1:30 PM	E–M	216B, Conv. Center	How Can We Engage Students in the Scientific and Engineering Practices? Teachers Making the Transition to Framework Practices Through Graduated Investigations (p. 76)
12:30–1:30 PM	G	Travis A, Grand Hyatt	What Every Science Educator Needs to Know About Students with Special Needs (p. 78)
12:30–1:30 PM	E–H	Mission B, Grand Hyatt	Developing Creativity Skills in the Science Classroom (p. 77)
12:30–1:30 PM	G	Salon A, Marr. Rivercenter	Designing Engineers—From Kids to Careers (p. 82)
12:30–1:30 PM	G	Mission B, Grand Hyatt	Action Research: A Teachers' Professional Development Strategy to Meet the Needs of Diverse Learners (p. 77)
12:30–1:30 PM	G	Texas Ballroom C, Grand Hyatt	Integrating Science and Mathematics Using the "Hook" of CSI (p. 78)
12:30–1:30 PM	I	Lone Star Blrm. C, Grand Hyatt	Forensic Science in Your Classroom! (p. 77)
12:30–1:30 PM	M	Bonham C, Grand Hyatt	Deep Science Learning with Sims: Incorporating Interactive Simulations Effectively with Hands-On Investigations and Argumentation (p. 82)
12:30–1:30 PM	M–H	Salon M, Marr. Rivercenter	CRASH Science! Investigating the Dangers of Distracted Driving (p. 83)
12:30–1:30 PM	G	Crockett B, Grand Hyatt	Does Evidence-based Inquiry Improve Logical Reasoning? (p. 76)
12:30–1:30 PM	G	Bowie B, Grand Hyatt	How Dirty Is Your Windshield? Formative Assessment via 3-D Graphic Organizers (p. 82)
12:30–1:30 PM	H	Conf. Room 15, Marr. Rivercenter	"Nuclear"ification: A Smorgasbord of Classroom Applications and Resources (p. 79)
12:30–1:30 PM	E	217D, Conv. Center	POWER ON! Argumentation Strategies for the Elementary Science Classroom (p. 81)
12:30–1:30 PM	I	Travis D, Grand Hyatt	Becoming an Effective Teacher (p. 78)
12:30–1:30 PM	P	201, Conv. Center	STEM Comes to Preschool (p. 74)
12:30–1:30 PM	E–M	216B, Conv. Center	It All Starts with a Question! (p. 76)
12:30–1:30 PM	G	Travis C, Grand Hyatt	Socratic Science Circles (p. 78)
12:30–1:30 PM	I	Lone Star Blrm. E, Grand Hyatt	Computer Games, Simulations, and Virtual Labs for STEM Education (p. 77)
12:30–1:30 PM	E–H	Texas Ballroom E, Grand Hyatt	Building a Strong Foundation for Energy Literacy Through Integration of Instruction Across Content Areas and Grade Levels with "Energy Day"! (p. 78)



## Schedule at a Glance Integrated/General Science, cont.

12:30–1:30 PM	G	Mission A, Grand Hyatt	Toshiba/NSTA ExploraVision (p. 77)
12:30–1:30 PM	G	Crockett C, Grand Hyatt	Get That Textbook Out of My Classroom! (p. 76)
12:30–1:30 PM	M	201, Conv. Center	Team Teaching in the Science Classroom (p. 74)
12:30–1:30 PM	E	202B, Conv. Center	Using the Nation's Report Card (NAEP) to Improve Science Education (p. 74)
12:30–1:30 PM	8–12	205, Conv. Center	Engineering the Future: A Practical Approach to STEM for High School (p. 83)
12:30–2:00 PM	4	007C, Conv. Center	WindWise Science Curriculum (p. 83)
12:30–4:30 PM	E–H	Conf. Rm 1/2, Marr. Rivercenter	BSCS-I Pathway Session: Analyzing and Interpreting Data in Your Classroom (p. 84)
1:00–1:30 PM	E–H	Crockett A, Grand Hyatt	I Draw to Assess; Do You? Creative Formative Assessment Strategies (p. 84)
1:00–2:30 PM	9–C	217B, Conv. Center	What Color Is Your World? Quick, Easy, and Cheap Biotech Activities for Biology and Chemistry (p. 84)
1:00–2:30 PM	K–6	214C, Conv. Center	Taking Science Outdoors with FOSS K–6 (p. 84)
1:00–2:30 PM	K–8	214B, Conv. Center	If You Want TEKS in Their Minds, Put FOSS in Their Hands (Texas Edition) (p. 84)
1:00–3:00 PM	P–E	Salon L, Marr. Rivercenter	WISP Pathway Session: Taking Little Ones from Questions to Claims: K–3 Inquiry Using the SWH (p. 85)
2:00–3:00 PM	G	Grand Blrm. C2, Conv. Center	Next Generation Science Standards Town Hall Meeting (p. 86)
2:00–3:00 PM	G	Salon K, Marr. Rivercenter	McREL Pathway Session: Designing Effective Science Instruction—Learning Goals That Clearly Align to Instructional Activities (p. 95)
2:00–3:00 PM	G	Conf. Room 12, Marr. Rivercenter	WestEd Pathway Session: Common Core Science Literacy (p. 94)
2:00–3:00 PM	M–H	Travis A, Grand Hyatt	NMLSTA Session: Science for the At-Risk Student (p. 91)
2:00–3:00 PM	G	Presidio C, Grand Hyatt	The NSTA Learning Center: A Tool to Develop Preservice Teachers (p. 90)
2:00–3:00 PM	M–H	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Rise and Shine: A Practical Guide for the Beginning Science Teacher (p. 91)
2:00–3:00 PM	E	212A, Conv. Center	CESI Session: Integrating Quality Children's Literature to Promote Science and Digital Literacies (p. 87)
2:00–3:00 PM	H–C	Bowie C, Grand Hyatt	SCST Session: Promoting Students' Understanding and Awareness of Sustainability Issues and the Nature of Science Through Mandatory Online Discussions (p. 88)
2:00–3:00 PM	M–H	Bonham E, Grand Hyatt	NARST Session: Developing a Critical Eye for Reading Media Reports of Science: Bridging the Science/English Divide to Advance Scientific Literacy (p. 94)
2:00–3:00 PM	G	Mission B, Grand Hyatt	Elementary Preservice Teachers—Can I Teach Science? (p. 90)
2:00–3:00 PM	G	Texas Ballroom E, Grand Hyatt	Bringing an Art Museum's Forensic Science Experience into the Special Education Science Classroom (p. 91)
2:00–3:00 PM	P–M	215, Conv. Center	Not Your Grandfather's Writing Tablet! (p. 88)
2:00–3:00 PM	E–H	202B, Conv. Center	Go Hands On with the Nation's Report Card: Do HOTs, Observe ICT Simulations, and Learn About Linking NAEP to TIMSS Results (p. 93)
2:00–3:00 PM	M–H	Salon M, Marr. Rivercenter	Using the Graphing Calculator to Model Data (p. 95)
2:00–3:00 PM	E–H	Crockett C, Grand Hyatt	Read It, Write It, Talk It: Practical Strategies for Addressing Literacy Development in Science Instruction (p. 90)
2:00–3:00 PM	E	217D, Conv. Center	A 5E Learning Cycle Integrating Science, Health, Physical Education, Math, and Language Arts (p. 93)
2:00–3:00 PM	E–M	217A, Conv. Center	Interactive Student Notebooks (p. 93)
2:00–3:00 PM	M	Bonham C, Grand Hyatt	Life—Here? There? Elsewhere? (p. 94)
2:00–3:00 PM	E–H	Crockett C, Grand Hyatt	Structured Writing in Science Doesn't Have to Be Boring (p. 90)
2:00–3:00 PM	E–H	Lone Star Blrm. E, Grand Hyatt	Find the Fund\$ for STEM: Grant Writing 101 (p. 90)
2:00–3:00 PM	E–M/I	Salon A, Marr. Rivercenter	Building STEM Education Through Robotics Competitions for All Levels and Budgets (p. 94)
2:00–3:00 PM	G	Bowie B, Grand Hyatt	Using Protocols to Examine Student Work (p. 94)
2:00–3:00 PM	E	Mission A, Grand Hyatt	ASTE Session: Engineering a Solar Panel Sun Tracker (p. 90)
2:00–3:00 PM	G	Texas Ballroom C, Grand Hyatt	Engineering Tasks for Your K–8 Classroom: A Strategy for Weaving Objectives from Across Your Curriculum into a Design Challenge (p. 91)
2:00–3:00 PM	G	Crockett A, Grand Hyatt	Constructing an Electronic Cosmic Ray Detector to Observe, Record, and Analyze Cosmic Rays in Your Classroom (p. 89)

## Schedule at a Glance Integrated/General Science, cont.

2:00–3:00 PM	E–M	216B, Conv. Center	Critical Skills Supporting Science and Engineering Innovation (p. 88)
2:00–3:00 PM	G	Travis D, Grand Hyatt	The Scientific Method vs. Scientific Practices—Who Will Survive? (p. 91)
2:00–3:00 PM	G	207A, Conv. Center	Tech Talk: A Terabyte of Ideas in an Hour (p. 87)
2:00–3:30 PM	6–8	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Advancing Your Program (p. 96)
2:00–3:30 PM	G	006B, Conv. Center	NGSS, STEM, and Scientific Literacy—What Now? (p. 96)
2:00–3:30 PM	K–12	209, Conv. Center	Siemens STEM Academy: Top Free STEM Resources for Your Classroom (p. 98)
2:00–3:30 PM	K–8	206B, Conv. Center	Engineering, Technology, and the Application of K–8 Science (p. 98)
2:00–3:30 PM	1–6	214A, Conv. Center	Elementary Teacher Survival Kit (p. 99)
2:30–3:00 PM	G	Lone Star Blrm. F, Grand Hyatt	Educational Apps for the 21st-Century Classroom and Beyond (p. 99)
2:30–3:30 PM	4	007C, Conv. Center	Renewable Power, Vernier, and KidWind Gear (p. 99)
3:30–4:00 PM	E–M	216B, Conv. Center	Learning Science By Creating a Newspaper (p. 104)
3:30–4:30 PM	G	Grand Blrm. C1, Conv. Center	Meeting the Challenge of the Next Generation Science Standards (NGSS @ NSTA) (p. 100)
3:30–4:30 PM	G	Texas Ballroom C, Grand Hyatt	Engineering Collaboration in the K–8 Classroom: Using Engineering Tasks to Facilitate 21st-Century Social Skills (p. 103)
3:30–4:30 PM	P–M	215, Conv. Center	Reading and Writing Science Using Exciting Polymer Activities and Children’s Literature (p. 106)
3:30–4:30 PM	G	Bowie B, Grand Hyatt	The Science-Social Studies Connection: Warm-ups for Exploring Global Issues (p. 107)
3:30–4:30 PM	C	Seguin A, Grand Hyatt	Integrating Climate Change for Elementary Preservice Teachers: Tales from the Field (p. 103)
3:30–4:30 PM	M–H	Travis A, Grand Hyatt	NSTA Press® Session: Visualizing the World of Atoms and Molecules: Virtual Technologies That Wow Students (p. 104)
3:30–4:30 PM	E	213B, Conv. Center	Super Science Stations (p. 106)
3:30–4:30 PM	M	Bonham E, Grand Hyatt	NMLSTA Session: Classroom Activities to Highlight the Eight Essential Practices of Science and Engineering (p. 107)
3:30–4:30 PM	M	Bonham C, Grand Hyatt	All Systems Checked! (p. 107)
3:30–4:30 PM	E–M	217A, Conv. Center	Reaching Underserved Student Populations Through an Inquiry-based Discrepant Event Approach (p. 106)
3:30–4:30 PM	M–H	Salon M, Marr. Rivercenter	Stretch Your Digital Dollar: Affordable Strategies for Integrating Cell Phones into the Classroom (p. 108)
3:30–4:30 PM	G	Presidio C, Grand Hyatt	Research Worth Reading: 2012 Research Selected by NSTA Affiliates (p. 103)
3:30–4:30 PM	E–C	Seguin A, Grand Hyatt	A Self-Efficacy Inquiry: Constructing Foundational Practices with Preservice Elementary Teachers (p. 103)
3:30–4:30 PM	G	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Good-Bye MSDS, Hello SDS (p. 103)
3:30–4:30 PM	E	217D, Conv. Center	Finding Time to Teach the Science Through Integration and PBL (p. 106)
3:30–4:30 PM	G	Texas Ballroom E, Grand Hyatt	Helping Gifted Learners (and All Your Other Students) Excel with D.I. (p. 104)
3:30–4:30 PM	M–H/S	Crockett C, Grand Hyatt	Science Literacy: New Approaches to Critical Thinking for the 21st Century (p. 102)
3:30–4:30 PM	G	Mission B, Grand Hyatt	Catch That Drop—Because Every Drop Counts! (p. 103)
3:30–4:30 PM	G	Crockett B, Grand Hyatt	Effective Use of Informal Science Resources in the School Classroom (p. 102)
3:30–4:30 PM	M	202B, Conv. Center	The Nation’s Report Card Will Provide the First National Test of How Well Students Do in Technology and Engineering Literacy (p. 101)
3:30–4:30 PM	G	Conf. Room 16, Marr. Rivercenter	Iron Teacher (p. 107)
3:30–4:30 PM	G	Salon A, Marr. Rivercenter	Serious Games for Learning: WaterLife, Where Rivers Meet the Sea (p. 104)
3:30–4:30 PM	G	Crockett D, Grand Hyatt	21st-Century STEM Education Leaders in Action (p. 102)
3:30–4:30 PM	E–M	212A, Conv. Center	CESI Session: Sport and Science Through Practical and Digital Solutions in the Classroom (p. 102)
3:30–4:30 PM	E–M/C	Mission A, Grand Hyatt	ASTE Session: Inquiry Centers: Nurturing and Assessing Students’ Science Process Skills (p. 102)
3:30–4:30 PM	P–E	Bonham B, Grand Hyatt	DuPont Session: Linking Home and School with P.A.S.S. (Portable Affordable Simple Science) (p. 107)

## Schedule at a Glance Integrated/General Science, cont.

3:30–4:30 PM	G	Presidio B, Grand Hyatt	The NSTA Learning Center: Free Professional Development Resources and Opportunities for Educators (p. 103)
3:30–4:30 PM	G	213A, Conv. Center	ASTC Session: The Uniqueness of Community: Exploring Opportunities Through Collaboration in an Elementary Science Program (p. 102)
3:30–4:30 PM	E–M	Salon L, Marr. Rivercenter	WISP Pathway Session: Science-related Research in the Middle School (p. 107)
3:30–5:30 PM	G	Lone Star Blrm. A, Grand Hyatt	NSTA/NSELA Issues Forum (NGSS @ NSTA) (p. 108)
4:00–5:30 PM	7–C	212B, Conv. Center	Create a Digital WiFi Classroom.... Using the New Moticam X and Moticonnect App! (p. 112)
4:00–5:30 PM	6–12	008B, Conv. Center	Supporting Independent Student Research and Successfully Navigating SSP Competitions (p. 110)
4:00–5:30 PM	K–5	206B, Conv. Center	The Common Core + Mathematics + Next Generation Science (p. 111)
4:00–5:30 PM	6–8	006C, Conv. Center	Equip Your iPad or Android Tablet for Science with SPARKvue® HD, a Full-featured Science Application (p. 109)
4:00–5:30 PM	3–9	214A, Conv. Center	3-2-1 Blast Off! (p. 112)
4:00–5:30 PM	9–12	006B, Conv. Center	Make Learning Part of the Grade (p. 109)
4:00–5:30 PM	6–C	103A, Conv. Center	How to Design a Safe and Efficient Science Laboratory from Flinn (p. 110)
4:00–5:30 PM	6–8	101B, Conv. Center	Experience the Future of Digital Science from National Geographic and Achieve3000® (p. 110)
4:00–5:30 PM	K–12	209, Conv. Center	Discovery Education Science Techbook—Myths Busted (p. 111)
5:00–5:30 PM	G	207A, Conv. Center	Designing and Developing STEM Collaborative Field Studies (p. 112)
5:00–6:00 PM	E–M	217A, Conv. Center	MoonKAM: Exploring Lunar Images (p. 117)
5:00–6:00 PM	S	Presidio C, Grand Hyatt	Standards-based Grading That Works (p. 114)
5:00–6:00 PM	M	Bonham C, Grand Hyatt	Interdisciplinary Unit Focusing on Water Rights and Access for Middle-Schoolers (p. 113)
5:00–6:00 PM	G	Bonham E, Grand Hyatt	Super Models, Super Thinkers, Super Scientists (p. 117)
5:00–6:00 PM	P–E	Bonham B, Grand Hyatt	DuPont Session: Bringing Literacy and Science Together: B.L.A.S.T. for Success at School and Home (p. 117)
5:00–6:00 PM	G	101A, Conv. Center	CTAG: What Is It? (p. 113)
5:00–6:00 PM	E–M	215, Conv. Center	Connecting Science, Technology, and Engineering (p. 116)
5:00–6:00 PM	E–H	Crockett B, Grand Hyatt	Argument Writing in the Science Classroom (p. 114)
5:00–6:00 PM	G	Crockett B, Grand Hyatt	Science Notebooks—Moving from Mechanical to Insightful Use (p. 114)
5:00–6:00 PM	E–M	216B, Conv. Center	The Nature Classroom: Your Door to Integrating Science and More (p. 113)
5:00–6:00 PM	G	Crockett C, Grand Hyatt	Enhancing Teacher Leaders in Elementary Science (p. 114)
5:00–6:00 PM	E	213B, Conv. Center	The Science Solution in the Literacy Block (p. 116)
5:00–6:00 PM	E	217D, Conv. Center	STEM After the Bell Rings: Engineering for All Students (p. 117)
5:00–6:00 PM	E–M	216B, Conv. Center	Integrating Science and Poetry with English Language Learners (p. 113)
5:00–6:00 PM	E–H	Bowie B, Grand Hyatt	Teaching Through the Windshield: Using Embedded Formative Assessments in the Classroom (p. 114)
5:00–6:00 PM	G	Salon F, Marr. Rivercenter	The Marshmallow Challenge: Using an Engineering Design Exercise to Get Kids Thinking Critically (p. 117)
5:00–6:00 PM	G	Lone Star Blrm. F, Grand Hyatt	The Crazy Fun of Giving 1,200 Teenagers iPads (p. 114)
5:00–6:00 PM	H/S	Conf. Rm 3/4, Marr. Rivercenter	Terrific Science Games for High Schools (p. 117)
5:00–6:00 PM	G	Lone Star Blrm. E, Grand Hyatt	Start Your Own STEM Center in Your Elementary Classroom! (p. 114)
5:00–6:00 PM	M	Bonham C, Grand Hyatt	A Little GPS Goes a Longitudinal Way: Using Field-based Apps to Study Earth's Magnetic Field (p. 113)
5:00–6:00 PM	P–M	202B, Conv. Center	Photographs for Assessment—”Take a Picture When...”: Digital Photography Makes It Easy to Engage Elementary Students in Assessment (p. 116)
5:00–6:00 PM	M–H	Salon M, Marr. Rivercenter	A Very “Cool” Way to Establish Scientific Norms—Liquid Nitrogen! (p. 118)
6:00–12 Midnight	G	Salon A, Marr. Rivercenter	A Festival of Award-winning Film Classics and Inspiring Legends, Part II (p. 120)

# Schedule at a Glance Physics/Physical Science

## Physics/Physical Science

8:00–9:00 AM	H	Salon J, Marr. Rivercenter	A Lab Exercise Using the MODELING Method (p. 26)
8:00–9:00 AM	G	Salon B, Marr. Rivercenter	Physics Education Insights by Milken Educators (p. 20)
8:00–9:00 AM	E–M	216A, Conv. Center	Simple Machines Made Simple (p. 24)
8:00–9:00 AM	H	Bonham B, Grand Hyatt	DuPont Session: DuPont Presents “Driving Science” (p. 24)
8:00–9:00 AM	E–H	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Classroom Activities to Accompany <i>Stop Faking It! Force &amp; Motion</i> (p. 26)
8:00–9:30 AM	9–12	211, Conv. Center	Physics from the NRC <i>Framework</i> : Exploring NGSS and Newton’s Laws (p. 34)
8:00–9:30 AM	1–3	007A, Conv. Center	Introducing Simple Machines into the Elementary Classroom with LEGO® Bricks (p. 30)
8:00–9:30 AM	11–12	212B, Conv. Center	Perimeter Institute: Classroom Activities for Dark Matter (p. 34)
8:00–9:30 AM	7–C	210B, Conv. Center	Engineering with Vernier (p. 34)
8:00–9:30 AM	6–12	101B, Conv. Center	Pairing Gizmos with Common Core ELA—A Perfect Duo! (p. 32)
8:00–9:30 AM	6–12	103A, Conv. Center	Fantastic Physical Science Demonstrations from Flinn (p. 32)
8:00–9:30 AM	6–12	206B, Conv. Center	Engineer Excitement in Your Classroom with a Carolina STEM Challenge (p. 33)
8:00–9:30 AM	3–6	102B, Conv. Center	Bring Simple Machine Concepts to Life with Real-World Models! (p. 32)
9:30–10:30 AM	E–H	Texas Ballroom D, Grand Hyatt	NSTA Press® Session: Classroom Activities to Accompany <i>Stop Faking It! Energy</i> (p. 47)
9:30–10:30 AM	I	213A, Conv. Center	ASTC Session: Excite Kids Through Effective Science, Technology, Engineering, and Math Messaging (p. 40)
9:30–10:30 AM	E	216A, Conv. Center	A Matter of Fact (p. 40)
9:30–10:30 AM	M–C	Salon B, Marr. Rivercenter	Are You Certain? Teaching Error Analysis and Other Experimental Skills in the Physics Classroom (p. 43)
9:30–10:30 AM	H	Salon J, Marr. Rivercenter	Slingshot Physics: Authentic Application of Work, Energy, Friction, and Newton’s First Law of Motion (p. 48)
9:30–11:00 AM	G	Texas Ballroom A/B, Grand Hyatt	NMLSTA Session: NMLSTA Share-a-Thon (p. 50)
10:00–11:30 AM	5–9	102B, Conv. Center	Go Green and Bring STEM Concepts to Life with the K’NEX® Education Renewable Energy Set! (p. 52)
10:00–11:30 AM	9–12	006D, Conv. Center	Exploring Basic Optics (p. 51)
10:00–11:30 AM	6–9	204B, Conv. Center	NGSS and Scientific Practices—More Than Photoshopping Models’ Flaws (p. 53)
10:00–11:30 AM	9–C	210A, Conv. Center	<i>Physics with Vernier</i> (p. 54)
10:00–11:30 AM	6–12	211, Conv. Center	Put the “E” in STEM: Science and Engineering Practices in Action (p. 54)
10:00–11:30 AM	6–12	214D, Conv. Center	Car and Ramp: Using a Graph to Predict Speed with the CPO Science Data Collector (p. 54)
11:00 AM–12 Noon	P–E	216A, Conv. Center	Showing Young Children the Art of Science (p. 61)
11:00 AM–12 Noon	M–C	Salon B, Marr. Rivercenter	The 3 Es: Easy, Exciting, inExpensive Physics (p. 60)
11:00 AM–12 Noon	M–H	Salon J, Marr. Rivercenter	Tiering Your Objectives to Meet the Needs of Every Learner (p. 60)
11:00 AM–12 Noon	M–H	Salon J, Marr. Rivercenter	Teaching Physical Science Principles Through the Design of an Underwater Robot (p. 60)
11:00 AM–12 Noon	M–H	Salon E, Marr. Rivercenter	The 50 Best Physics Demos to Do Before You Die... (p. 60)
11:00 AM–12 Noon	M	Bonham D, Grand Hyatt	Teaching Newton’s Three Laws with Coaster Cars (p. 62)
12 Noon–1:30 PM	6–12	214D, Conv. Center	A STEM Approach to Teaching Electricity and Magnetism (p. 72)
12 Noon–1:30 PM	6–12	211, Conv. Center	Wind Power and Alternative Energy: Exploring Energy Core Concepts (p. 72)
12:30–1:30 PM	E	202A, Conv. Center	Circuits to Go! (p. 81)
12:30–1:30 PM	E	215, Conv. Center	Inquiry Activities for K–4—Strike While the Iron Is Hot! (p. 81)
12:30–1:30 PM	H	Salon J, Marr. Rivercenter	Video Analysis and Science Inquiry (p. 80)
12:30–1:30 PM	E–H	Conf. Room 16, Marr. Rivercenter	10 Things Everyone Should Know About the Atmosphere (p. 82)
12:30–1:30 PM	P–E	216A, Conv. Center	Inquiry and Exploration with Inclined Planes and Forces of Motion (p. 75)
12:30–1:30 PM	H–C	Lone Star Blrm. A, Grand Hyatt	Using Super Mario Bros. to Teach Calculus-based Kinematics (p. 76)
12:30–1:30 PM	E	216A, Conv. Center	Magic with Science (p. 75)
12:30–1:30 PM	G	Salon B, Marr. Rivercenter	The Magnet Lab: Magnets Is What We Do! (p. 79)
12:30–1:30 PM	M–H	Bonham B, Grand Hyatt	DuPont Session: DuPont Presents “Investigating Photovoltaic Cells” (p. 81)

## Schedule at a Glance Physics/Physical Science, cont.

2:00–3:00 PM	G	Bowie C, Grand Hyatt	SCST Session: Beginning a Learning Assistant Program in Science Courses as Experienced by Boston University (p. 88)
2:00–3:00 PM	G	Salon B, Marr. Rivercenter	Tesla Tales (p. 92)
2:00–3:00 PM	M	Bonham D, Grand Hyatt	Energy: Its Forms and Transformations (p. 94)
2:00–3:00 PM	E–M	216A, Conv. Center	Brushbots in the STEM Elementary Classroom (p. 93)
2:00–3:00 PM	P–E	202A, Conv. Center	Let It Slide! (p. 93)
2:00–3:00 PM	H	Salon J, Marr. Rivercenter	Flex-paced Flipped Mastery Physics (p. 92)
2:00–3:00 PM	6–12	205, Conv. Center	Active Physics—Ahead of Its Time in Capturing the Essence of the NGSS and STEM (p. 95)
2:00–3:30 PM	5–9	102B, Conv. Center	Bring the Excitement of Hands-On Learning to Your Middle School Classroom! (p. 97)
2:00–3:30 PM	9–12	006D, Conv. Center	AP Physics—Friction (p. 96)
2:00–3:30 PM	6–12	214D, Conv. Center	Chemistry and the Atom: Fun with Atom Building Games! (p. 99)
2:00–3:30 PM	6–12	210B, Conv. Center	STEM Activities Using Vernier Technology (p. 98)
3:30–4:30 PM	E	216A, Conv. Center	Show Your True Colors! (p. 106)
3:30–4:30 PM	M–H	Conf. Rm 3/4, Marr. Rivercenter	Teaching Science to ELLs (p. 104)
4:00–4:30 PM	E	201, Conv. Center	<i>Aprendiendo Ciencias</i> : Acquiring and Expanding Scientific Language and Literacy (p. 108)
4:00–5:30 PM	4	007C, Conv. Center	Exploring Circuits by Hacking Toys (p. 109)
4:00–5:30 PM	3–5	007A, Conv. Center	Machines and Mechanisms in the Classroom and Beyond (p. 109)
4:00–5:30 PM	6–12	214D, Conv. Center	Light and Optics: A Series of EnLIGHTening Experiments! (p. 112)
4:00–5:30 PM	5–9	102B, Conv. Center	It's Off to the Races with K'NEX® Education's Forces, Energy, and Motion Set! (p. 110)
4:00–5:30 PM	6–8	203A, Conv. Center	Fast and Furious—Measuring Speed (p. 111)
4:00–5:30 PM	8–C	007B, Conv. Center	Physical Science with iPads, Smartphones, and Technology That Your Students Use Every Day (p. 109)
4:00–5:30 PM	K–9	204A, Conv. Center	Forces and Motion (p. 111)
4:00–5:30 PM	4–8	204B, Conv. Center	More STEM Challenges for the Classroom, Part 2 (p. 111)
5:00–6:00 PM	G	Salon B, Marr. Rivercenter	Mobile Phone and iPad Apps: Engaging Students in Science and Engineering Through Gaming (p. 115)
5:00–6:00 PM	G	Salon B, Marr. Rivercenter	Collaborative Connections Among Physical Science, Math, and Engineering (p. 115)
5:00–7:00 PM	K–12	Grand Blrm. C3, Conv. Center	Just Physics (p. 118)

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