

# San Antonio

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



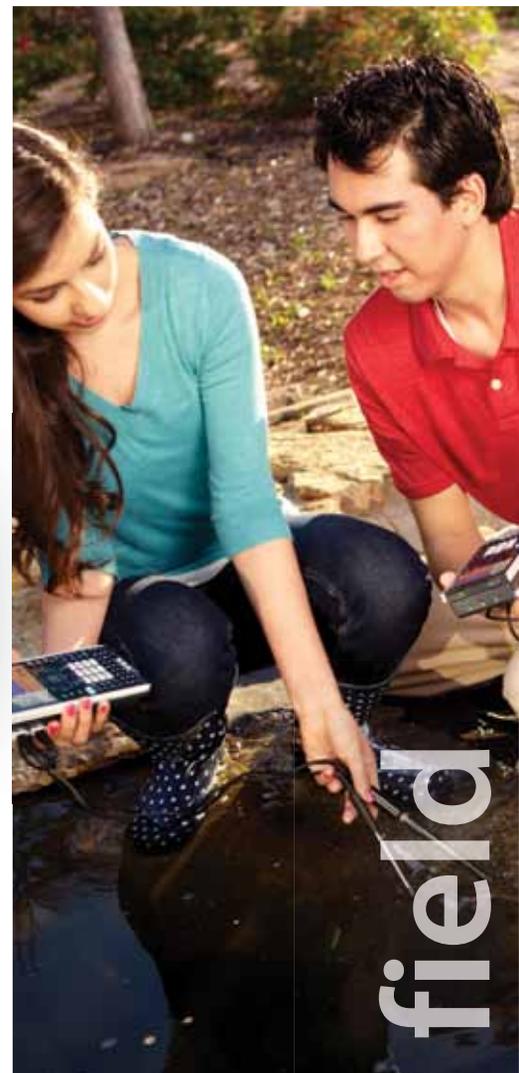
3

Sat., April 13  
Sun., April 14



NSTA 2013  
National Conference  
on Science Education

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# 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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NSTA National Science Teachers Association

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  - **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.

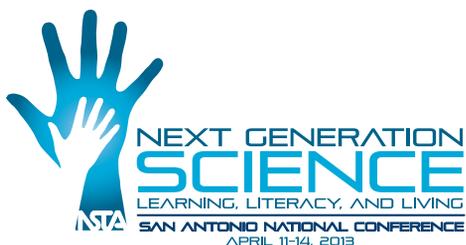
## Distinguish Yourself

- 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



# 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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703-243-7100  
E-mail: [conferences@nsta.org](mailto:conferences@nsta.org)  
[www.nsta.org](http://www.nsta.org)

**Cover Photo:** 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.

# EXPLORE

Renewable Energy Science Education

- ⚙️ Teacher workshops & curriculum
- ⚙️ Hands-on clean energy exploration kits
- ⚙️ Student wind turbine design competitions

**Booth #1826**

## 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 |

Join KidWind as we explore solar power, wind energy science curriculum, Vernier data collection equipment, circuits, hydropower, and more! Our workshops will give you great ideas and activities to bring back to your classroom.



[www.KidWind.org](http://www.KidWind.org)



Richard Nowitz/San Antonio Convention and Visitors Bureau

The famed “Rose Window” at Mission San José is a superb example of Spanish Colonial ornamentation.

**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.

**Saturday, April 13**

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**Sunday, April 14**

7:00–9:00 AM	NSTA Life Members’ Buffet Breakfast (M-11) . . . . .	101
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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 Assessments:  
Effectively Measuring Student Learning**

**Saturday, April 13**

**8:00–9:00 AM**

Developing Science Assessments That Support Inquiry

**8:00 AM–12 Noon**

Short Course: Redesigning Testing in Science: Bringing Research-based Diagnostic Assessments into the Classroom  
(By Ticket: SC-14)

**9:30–10:30 AM**

Whoooo Knew? Assessment Strategies for Inquiry Science

**12:30–1:30 PM**

Let's Talk Science: Learning Conversations in Formal and Informal Science Education

**2:00–3:00 PM**

Student-designed Experiments: A Strategy That Works for Them and You!

**3:30–4:30 PM**

Exploring and Understanding the New Science Framework and Common Core State Standards

**5:00–6:00 PM**

The Mystery of the Mummy Brothers

**Sunday, April 14**

**8:00–9:00 AM**

You Said It, But Did They Get It?

**9:30–10:30 AM**

Science as Inquiry: Linking Instruction with Assessment

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

**Saturday, April 13**

**8:00–8:30 AM**

Climate Change...on Our Playground?

**9:30–10:30 AM**

Dazzling Deceptions: Discrepant Events That Delight and Mystify!

**12:30–1:30 PM**

Into the Woods for Environmental Literacy

**2:00–3:00 PM**

CSI for Small Fry: Classroom Science Investigations That Encourage Science Processes

**3:30–4:30 PM**

Growing Science Achievement with the Junior Master Gardener Program

**Sunday, April 14**

**8:00–9:00 AM**

Scribble-Bots

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

**Saturday, April 13**

**8:00–9:00 AM**

Addressing the Unique Needs of Diverse Learners in Introductory Biology Curricula, Particularly Those with Learning Disabilities

**8:30–11:30 AM**

Short Course: Language for Meaning: Supporting English Language Learners in the Science Classroom (By Ticket: SC-15)

**9:30–10:30 AM**

Successful Tools for Engaging Girls in Science: A National Panel of Women in STEM Share Proven Strategies and Programs

**11:00 AM–12 Noon**

Developing Inquiry with Young Learners: Outdoor Explorations with Diverse Audiences  
Empower ALL Learners with Neuroscience

**12:30–1:30 PM**

Active Engagement of All Students—ELL, Gifted, and Learning Disabled

**2:00–3:00 PM**

How to Present STEM to African-American Women

**3:30–4:30 PM**

Engaging Science Instruction for Special Needs Students

**5:00–6:00 PM**

Science Camp: An Effective High-Stakes Test Intervention

**Sunday, April 14**

**8:00–9:00 AM**

Effective Strategies for Enhancing Science Learning for Diverse Students

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

**Saturday, April 13**

**8:00–9:00 AM**

CPR: Revive Writing in the Science Classroom Without Killing Yourself

**8:00–11:00 AM**

Short Course: Expedition Earth and Beyond—Getting Students Actively Involved in NASA Exploration, Discovery, and the Process of Science (By Ticket: SC-13)

**9:30–10:30 AM**

Being Smart with Graphs!

**11:00 AM–12 Noon**

Climate Models: Everything You Ever Wanted to Know, Ask, and Teach

**12:30–1:30 PM**

Citizen Science Investigations in the Classroom

**1:30–4:30 PM**

Short Course: Building Sound Technology into Your Science Curriculum (By Ticket: SC-18)

**2:00–3:00 PM**

Using LabQuest2 with iPads in Modeling Instruction

**3:30–4:30 PM**

iPads Go Outdoors: Young Students Become Citizen Scientists

**5:00–6:00 PM**

Incorporating STEM Research with Technology Inquiry in Low Socioeconomic Classrooms

**Sunday, April 14**

**8:00–9:00 AM**

NASA’s Goldstone Apple Valley Radio Telescope Program

**9:30–10:30 AM**

Google Earth in the Classroom

**11:00 AM–12 Noon**

Using PhET Simulations to Teach Introductory Physics

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## NSTA/SCST Symposium

### *Using Biotechnology as an Interdisciplinary STEM Education Teaching Strategy*

*Symposium Jointly Sponsored by NSTA and SCST*

Saturday, April 13, 8:00 AM–12 Noon  
Bowie B, Grand Hatt

This year's joint symposium by NSTA and the Society for College Science Teachers (SCST) will focus on the theory and practice of teaching STEM and science workforce skills in college and high school science teaching. Biotechnology techniques will be demonstrated as a unifying theme for the integration of biology, chemistry, engineering, math, and physics into each specific discipline. Workforce readiness for STEM careers will be discussed by speakers from BioLink and Bio-Rad.

An agenda follows. *Symposium events are described on page 29.*

### **Saturday, April 13**

- 8:00 AM–12 Noon Biotechnology Discussion  
*Moderator:* Brian R. Shmaefsky, SCST President, and Lone Star College—Kingwood, Tex.  
*Presenters:*  
Damon Tighe, Curriculum Training Specialist, Bio-Rad Laboratories, Hercules, Calif.  
Sulatha Dwarakanath, Bio-Link, and Adjunct, Associate Professor, Austin Community College, Austin, Tex.  
Breakout Session One: *Engineer the Tools for Inquiry of Candy Food Dyes (Biology)*  
Breakout Session Two: *Engineer the Tools for Inquiry of Candy Food Dyes (Chemistry and Physics)*
- 12 Noon–1:30 PM NSTA/SCST College Luncheon (Tickets Required: M-7) (page 55)  
*Coherent Curricula for Preparing Science Teachers and Teaching Students Science*  
Michael W. Klymkowsky, Professor of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, and Institute of Molecular Systems Biology, ETH Zurich, Switzerland

## Teacher Researcher Day

Saturday, April 13, 8:30 AM–4:30 PM

Texas Ballroom A/B, Grand Hyatt

Teacher researchers are curious about their students' learning and ask questions to try to better understand what is happening in their classrooms. They collect data such as videotapes of instruction, copies of student work, and their own written reflections. Then they try to make sense out of what they see in the data and use this knowledge to improve their teaching. Teacher Researcher Day is for both new and experienced teacher researchers. The full day of activities includes a poster session and presentations on topical issues. These sessions provide opportunities to meet teacher researchers and learn about their studies in a wide variety of contexts.

An agenda follows. *Symposium events are described throughout the Saturday daily program.*

### **Saturday, April 13**

- 8:30–9:30 AM Poster Session: *Teacher Research in Science Education in Multiple and Diverse Settings*
- 9:30–10:30 AM Presentation: *Finding Meaning as a Teacher Researcher—Overview of Teacher Researchers*
- 10:30–11:00 AM Concurrent Sessions
- 11:00 AM–12 Noon Concurrent Sessions
- 12 Noon–12:30 PM Science Inquiry Group Network
- 12:30–1:30 PM Concurrent Sessions
- 1:30–2:00 PM Concurrent Sessions
- 2:00–3:00 PM Concurrent Sessions
- 3:30–4:30 PM Concurrent Sessions

### Informal Science Day

Saturday, April 13, 7:00 AM–4:00 PM

Ballroom B, Convention Center

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

An agenda follows. *Informal Science Day events are described throughout the Saturday daily program.*

#### Saturday, April 13

7:30–9:00 AM	Science in the Community Breakfast (Tickets Required: M-6) <i>Stretching Our Collective Science and Engineering Wings Through Community-based Resources</i> David Heil, David Heil & Associates, Inc., Portland, Ore.
9:30–10:30 AM	Breakout Sessions
11:00 AM–12 Noon	Breakout Sessions
12:30–1:30 PM	Little Shop of Physics Demo and Open House
2:00–4:00 PM	Informal Science Day Share-a-Thon

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### NSTA Community Science Festival

Saturday, April 13, 9:25 AM–12:30 PM

Exhibit Hall, Convention Center

Bring science to life for your students and children with the folks that do it best! NSTA is hosting a FREE community event to electrify parents, teachers, students, and other community members about the exciting world of science. The Festival will feature hands-on activities that will excite and inspire teachers and parents, live-animal presentations, and exciting demonstrations that will spark students’ enthusiasm for STEM. Steven “Jake” Jacobs, also known as Wizard IV, will kick off the event with an exciting display of science experiments.

The doors to the Festival open at 9:15 AM. The first 250 participants through the door will receive FREE tote bags\* filled with items donated by participating companies and organizations.

*\*One gift bag per person, per family. You must be 18 years or older to receive a bag. Bags are for participants only.*



## 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.

### Saturday, April 13

#### 8:00–9:00 AM

Picture Not Faking It! Using Trade Books and Activities to Understand Buoyancy

#### 9:30–10:30 AM

Whole Class Inquiry, The Story Continues

Stop Faking It! Finally Understand Light and Sound So You Can Teach It

#### 11:00 AM–12 Noon

*Bringing Outdoor Science In*

Uncovering K–12 Students' (and Teachers') Ideas on Life Science

#### 12:30–1:30 PM

Using Science Mystery Stories—The Details

#### 2:00–3:00 PM

Authors Share Favorite Lessons from *Teaching Science Through Trade Books*

#### 3:30–4:30 PM

Inquiring Scientists, Inquiring Readers: Using Nonfiction Text Sets in Scientific Inquiry, Grades 3–5

Designing Effective Science Instruction with the Next Generation Science Standards



#### 5:00–6:00 PM

Linking Science, Math, and Art Instruction

### Sunday, April 14

#### 11:00 AM–12 Noon

Teaching and Learning Biology Through Scientific Argumentation

# 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



**7:00–9:00 AM Breakfast**

**NSTA/AMSE George Washington Carver Breakfast**  
(By Invitation Only) Salon A, Marriott Rivercenter

**7:30–8:15 AM Breakfast**

**NSTA Past Presidents’ Breakfast**  
(By Invitation Only) Lone Star Ballroom A, Grand Hyatt  
Note: The breakfast will be followed by the Past Presidents Advisory Board Meeting from 8:15 to 9:15 AM in the same room.

**7:30–9:00 AM Science in the Community Breakfast**

**Stretching Our Collective Science and Engineering Wings Through Community-based Resources (M-6)**  
(Tickets Required: \$15) Ballroom B, Convention Center



**David Heil** ([dheil@davidheil.com](mailto:dheil@davidheil.com)), President, David Heil & Associates, Inc., Portland, Ore.

Join David for an informative and fun morning exploring how informal learning resources can help teachers implement the highly anticipated Next Generation Science Standards as well as

engage learners of all ages in actively exploring science and engineering in their community.

David Heil is well known throughout the country as an innovative science educator, new enterprise developer, lecturer, author, and host of the Emmy Award–winning PBS science series, *Newton’s Apple*. He was the lead author on the award-winning program *Discover The Wonder*, which was the #1 selling elementary science curriculum in America for five years running. David is also editor of the popular book *Family Science*, and, more recently, he coauthored and edited a new publication, *Family Engineering: An Activity & Event Planning Guide*.

Prior to establishing David Heil & Associates, David was affiliated with the Oregon Museum of Science & Industry for 13 years, serving as associate director from 1988 to 1996. In 2009, he received NSTA’s award for Distinguished Service to Science Education.

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

Breakfast sponsored in part by DuPont Office of Education.

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 119, 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



**Climate Change...on Our Playground? (Env)**

(Elementary) 202A, Convention Center

**Kate Hooper** ([kmh40@scasd.org](mailto:kmh40@scasd.org)) and **Cheryl McCarty** ([cam17@scasd.org](mailto:cam17@scasd.org)), State College (Pa.) Area School District  
Come learn how teachers, elementary students, and university faculty designed a service learning project to examine the impact climate change is having on their environment in central Pennsylvania.

8:00–9:00 AM Coffee

**NSTA Recommends Reviewer/Publisher Coffee**

(By Invitation Only) Presidio C, Grand Hyatt



8:00–9:00 AM Presentations

SESSION 1

**Sun Study with NASA (Earth)**

(Middle Level) 003A, Convention Center

**Steele W. Hill** ([steele.w.hill@nasa.gov](mailto:steele.w.hill@nasa.gov)), NASA Goddard Space Flight Center, Greenbelt, Md.

Join me for an overview of how teachers can use NASA resources from spacecraft and activities to observe and teach about the Sun, now at its peak of activity.

SESSION 2

**The Truth About Spiders Is Not What You Think! (Gen)**

(Preschool–Elementary) 101B, Convention Center

**Jim McDonald** ([mcdon1jt@cmich.edu](mailto:mcdon1jt@cmich.edu)) and **Lynn A. Dominguez** ([domin1la@cmich.edu](mailto:domin1la@cmich.edu)), Central Michigan University, Mount Pleasant

As children develop misconceptions about spiders, they also create attitudes that are difficult to change. Join us as we spell out misconceptions and present hands-on activities, assessments, and literature connections.

SESSION 3



**Addressing the Unique Needs of Diverse Learners in Introductory Biology Curricula, Particularly Those with Learning Disabilities (Bio)**

(High School–College) 201, Convention Center

**Abigail P. Littlefield** ([alittlefield@landmark.edu](mailto:alittlefield@landmark.edu)), Landmark College, Putney, Vt.

Emphasis will be placed on specific techniques to adapt the curriculum of biology courses (high school/college) to better serve traditional learners and those with learning disabilities.

SESSION 4



**CPR: Revive Writing in the Science Classroom Without Killing Yourself (Gen)**

(High School–College) 207A, Convention Center

**Sharla Dowding** ([dowdings@weston1.k12.wy.us](mailto:dowdings@weston1.k12.wy.us)) and **James Stith** ([stithj@weston1.k12.wy.us](mailto:stithj@weston1.k12.wy.us)), Newcastle High School, Newcastle, Wyo.

President: Doug Scribner, Newcastle High School, Newcastle, Wyo.

Calibrated Peer Review (CPR)<sup>TM</sup> is a web-based program that enables frequent writing assignments and increases student mastery of content while reducing the time an instructor must spend reading and assessing student writing. CPR offers instructors the choice of creating their own writing assignments or using the rapidly expanding assignment library. CPR funding has been generously provided by the National Science Foundation and by the Howard Hughes Medical Institute.

SESSION 5

**Literature Lab (Bio)**

(Elementary) 208, Convention Center

**Duana Eisemann** ([dbeisema@garlandisd.net](mailto:dbeisema@garlandisd.net)), **Kimberly David** ([kjdavid@garlandisd.net](mailto:kjdavid@garlandisd.net)), and **Pamela Schultz** ([peschult@garlandisd.net](mailto:peschult@garlandisd.net)), Garland (Tex.) ISD

Using trade books to teach science is a fun way to introduce science concepts. Discover books that make an excellent engagement activity and prompt discussion, questions, and investigations.

# Visit NSTA's **SCIENCE BOOKSTORE**

Take  
advantage of  
**FREE**  
Shipping!



## **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**

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

- 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.**

**SESSION 6**

**Building a Foundation Through Children’s Literature (Gen)**

(Preschool–Elementary) 213A, Convention Center

**Kimberly K. Stilwell** (*kstilwell@bssd.net*) and **Christine M. Gibler** (*cgibler@bssd.net*), Blue Springs (Mo.) School District

Science lessons come alive with children’s literature and the 5Es (Engage, Explore, Explain, Elaborate, and Evaluate). Make the most of your day with so many standards and so little time. Walk away with resources and door prizes!

**SESSION 7**

**Integrated Math and Science Education Through Science Education and Quantitative Literacy (SEQL) (Gen)**

(Elementary–Middle Level) 215, Convention Center

**Dave Westenberg** (*djwesten@mst.edu*), Missouri University of Science and Technology, Rolla

Join us as we describe the structure and organization of SEQL, a professional development program. Presentation includes data from the program and sample activities.

**SESSION 8** (two presentations)

(Elementary–Middle Level) 216B, Convention Center

**Starting a Successful Science Club (Gen)**

**Anne Durrance** (*anne.durrance@gmail.com*), G.W. Long Elementary School, Skipperville, Ala.

Join me for useful information on starting an after-school science club. Get tips on getting your club started and more.

**The Explorer’s Club: Let’s Design and Invent (Gen)**

**Kathleen K. Blouch** (*blouchk@etown.edu*), **Alicia Klepper** (*kleppera@etown.edu*), **Melissa Gettys** (*gettysm@etown.edu*), and **Bethany Otwell** (*otwellb@etown.edu*), Elizabethtown College, Elizabethtown, Pa.

It’s definitely not quiet at this library. Children are building cars, towers, electrical boxes, and more at this after-school partnership. Join us as we share materials.

**SESSION 9**

**Data in the Classroom—Investigate Earth Processes Using Real Data (Env)**

(General) Crockett A, Grand Hyatt

**Bree Murphy** (*bree.murphy@noaa.gov*), NOAA National Estuarine Research Reserve System, Silver Spring, Md.

Come explore easy-to-use curriculum activities and online interfaces that put real- and near real-time data into exciting and compelling contexts that are relevant to our lives and the “real world.”

**SESSION 10**

**Putting Science on the (Google) Map (Gen)**

(Middle Level–High School/Informal) Crockett B, Grand Hyatt

**Andrea Swensrud** (*scienceed@kqed.org*), KQED, San Francisco, Calif.

Discover how to create media-rich, interactive, science-based maps using free tools from Google. Enhance student learning by incorporating this engaging place-based technology into your curriculum.

**SESSION 11** (two presentations)

(General) Crockett C, Grand Hyatt

**Mobile Media as a STEM Tool (Gen)**

**Jamie Jenkins** (*jamie\_1\_jenkins@mcpsmd.org*), Montgomery County Public Schools, Rockville, Md.

**Antonios Ekatomatis** (*antonios\_ekatomatis@mcpsmd.org*), Montgomery Blair High School, Silver Spring, Md.

Explore a model of how a public school district provided professional development to teachers for using mobile media to expand student knowledge.

**The Fourth “R”: Using “R” in STEM Courses (Gen)**

**Brian Dennis** (*brian@uidaho.edu*), University of Idaho, Moscow

Join me as I introduce and elicit ideas for using the free powerful “R” program for scientific graphs and calculations in high school/college STEM courses.

**SESSION 12**

**Making Thinking Visible Through Authentic Problem-Based Learning (PBL) and Beyond (Gen)**

(General) Crockett D, Grand Hyatt

**Karen L. Lindebrekke** (*karen.lindebrekke@ibioinstitute.org*) and **Ann Reed** (*ann.reed@ibioinstitute.org*), iBIO Institute, Chicago, Ill.

Explore ways to make students’ thinking visible and to assess their growth in 21st-century skills through PBL and other meaningful STEM learning experiences.

**SESSION 13**

**A Whiteboard Isn’t a Clean Slate! (Env)**

(Middle Level) Lone Star Ballroom E, Grand Hyatt

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

**Steve Canipe** (*steve.canipe@waldenu.edu*), Walden University, Minneapolis, Minn.

Explore free and innovative applications for whiteboards and apps for personal devices that enable you to integrate environmental content and technology.

# Saturday, April 13

	Featured Speakers/Special Events	Next Generation Science Standards	NGSS/Featured Speakers/ Special Events	Featured Speakers/Special Events
7:00 AM				
8:00 AM	<b>NSTA/SCST Symposium on Biotechnology</b> Using Biotechnology as an Interdisciplinary STEM Education Strategy 8:00 AM–12 Noon Bowie B, Grand Hyatt	<b>NGSS Session</b> Thoughts from Two Teacher Members of the NGSS Writing Team (NGSS @ NSTA) 8:00–9:00 AM Lone Star Ballroom F, Grand Hyatt		
9:00 AM				<b>NSTA Community Science Festival</b> 9:00 AM–12:30 PM Exhibit Hall
10:00 AM		<b>NGSS Session</b> Implication of the NRC <i>Framework</i> and the Highly Anticipated NGSS for Teaching and Learning (NGSS @ NSTA) 9:30 AM–12:30 PM Lone Star Ballroom F, Grand Hyatt	<b>Science Seminar</b> 10:30 AM–12 Noon Ballroom C2, Conv. Center Speaker: Bobby Jeanpierre	
11:00 AM	<b>Paul F-Brandwein Lecture</b> 11:00 AM–12 Noon Grand Ballroom C1, Conv. Center Speaker: Arthur Morris			
12 Noon				
1:00 PM	<b>Informal Science Day Special Session</b> Little Shop of Physics Demo and Open House 12:30–1:30 PM Ballroom C, Conv. Center			
2:00 PM	<b>NSTA/ASE Honors Exchange Special Session</b> 2:00–3:00 PM Lone Star Ballroom F, Grand Hyatt Speaker: Liz Lawrence	<b>AoA Session on NGSS</b> Walking the Talk—How to Proceed with the Next Generation Science Standards (NGSS @ NSTA) 2:00–4:00 PM Bonham D, Grand Hyatt	<b>Science Seminar</b> 1:30–3:00 PM Ballroom C2, Conv. Center Speaker: Karen Lozano	<b>Science Seminar</b> 1:30–3:00 PM Grand Ballroom C3, Conv. Center Speaker: O'dell Moreno Owens
3:00 PM				
4:00 PM	<b>Featured Presentation</b> 3:30–4:30 PM Grand Ballroom C1, Conv. Center Speaker: Paul Andersen		<b>Informal Science Share-a-Thon</b> 2:00–4:00 PM Ballroom B, Conv. Center	
5:00 PM				
6:00 PM				
7:00 PM			<b>Special Evening Session</b> 6:00 PM–12 Midnight Salon A Marriott Rivercenter A Festival of Award-winning Film Classics and Inspiring Legends, Part III	
8:00 PM	<b>President's Reception</b> 7:00–8:15 PM Salon E, Marriott Rivercenter Ticket Required (M-10)			
9:00 PM	<b>President's Evening Featured Presentation</b> 8:30–9:30 PM Salon I, Marriott Rivercenter Speaker: David Hanson			
10:00 PM	<b>President's Mixer</b> 9:45 PM–12 Midnight Salon E, Marriott Rivercenter			



## SESSION 14

**NGSS@NSTA Perspectives on the Next Generation Science Standards: Thoughts from Two Teacher Members of the NGSS Writing Team (Gen)***(General) Lone Star Ballroom F, Grand Hyatt***Kenneth Huff** (*kenneth.huff@roadrunner.com*), Mill Middle School, Williamsville, N.Y.**Mary C. Colson** (*mcolson@moorheadschoools.org*), Horizon Middle School, Moorhead, Minn.

Join us for a conversation about the development of NGSS and how we see the new standards impacting classroom teaching.

## SESSION 15

**NMLSTA Session: Win Big! Write a Grant (Gen)***(General) Mission B, Grand Hyatt***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.

Do you have a dream? What is stopping you? You can't win if you don't apply! Learn grant proposal writing tips from two successful grant writers.

## SESSION 16

**Timeless (Gen)***(General)**Republic A, Grand Hyatt***Michele L. Marquette** and **Marguerite Sognier** (*masognie@utmb.edu*), The University of Texas Medical Branch at Galveston

“Meet” and learn about Grace Murray Hopper, pioneer computer scientist, as she merges science history and technology by generating multimedia timelines.

## SESSION 17

**Bad Acid: Engaging Students in an Inquiry-based Online Ocean Acidification Study (Env)***(High School–College/Informal) Sequin A, Grand Hyatt***Jason Hodin** and **Pamela J. Miller** (*pam.miller@stanford.edu*), Hopkins Marine Station, Stanford University, Pacific Grove, Calif.**Geraldine Fauville** (*geraldine.fauville@loven.gu.se*), University of Gothenburg, Fiskebäckskil, Sweden

Acid Ocean is an inquiry-based virtual lab that investigates the problem of ocean acidification. Students use a virtual lab bench to set up an experiment, use authentic research data, and measure larva to see possible effects of climate change.

## 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.



**SESSION 18**

**NSELA Session: CCSS and Interactive Science Note Booking: A Perfect Match (Gen)**

(Elementary–Middle Level) *Travis A, Grand Hyatt*  
**Barbara J. Reinert** (*breinert@susd.org*), Scottsdale (Ariz.) Unified School District

With the release of the Common Core State Standards, many changes are taking place with the way teachers are conducting instruction in the classroom in all content areas. Language Arts and Math began the movement, but how do the CCSS look in science? Science educators have a natural match with the CCSS and the use of science interactive notebooks. By changing the focus of how we have students use notebooks, we can assure the CCSS are being implemented in the science classroom!

**SESSION 19**

**Using GPS Units to Connect the Classroom to the Students' World (Gen)**

(Middle Level) *Travis B, Grand Hyatt*  
**Tess Ewart** (*tess@engagingmsscience.com*), A.I. Root Middle School, Medina, Ohio

Hear how students found out that GPS units can be used for more than getting you to the restaurant!



**SESSION 20**

**Professional Development Through the Eyes of Einstein Fellows (Gen)**

(General) *Conference Room 11, Marriott Rivercenter*  
**Anthnette Peña** (*apena@triangle-coalition.org*), Triangle Coalition for Science and Technology Education, Arlington, Va.

Hear about the influence and effort of Einstein Fellows on national K–12 STEM education conversations. Find out how you can include your voice as well.

**SESSION 21**

**The Power of the Prepared Environment (Gen)**

(General) *Salon J, Marriott Rivercenter*  
**Lara Arch** (*larch1@rice.edu*), **CJ Thompson** (*cthompson@rice.edu*), and **Lisa Webber** (*lwebber@rice.edu*), Rice University, Houston, Tex.

Discuss how to use the space and supplies in your classroom so that it fosters autonomy, problem solving, and peace in your students.

**SESSION 22**

**How'd I Do? Student Metacognition Through Standards-based Assessment (Gen)**

(Middle Level–High School) *Salon L, Marriott Rivercenter*  
**Andrea Smith** (*andrea.smith@bvsd.org*), Peak to Peak Charter School, Lafayette, Colo.

Emphasis will be placed on standards-based strategies for helping students metacognitively reflect on their mastery and set goals to improve their performance on summative assessments.

**SESSION 23**

**Lotions, Potions, and Scrubs: Polymer Science in Cosmetics (Chem)**

(Middle Level–College) *Alamo Salon B, Marriott Riverwalk*  
**Sherri Conn Rukes** (*luvchem@gmail.com*), Libertyville High School, Libertyville, Ill.

Learn how to make various cosmetics as well as the polymer science behind them. Take home a CD with the information and samples.

**SESSION 24**

**Five Practices for Orchestrating Productive Science Discussions (Bio)**

(High School) *Alamo Salon F, Marriott Riverwalk*  
**Jen Cartier** (*jcartier@pitt.edu*) and **Danielle Ross** (*dross1225@yahoo.com*), University of Pittsburgh, Pa.

Walk away with concrete guidance for engaging students in discussions that make science concepts in classroom lessons transparent to all.

**8:00–9:00 AM Workshops****Scaffolding STEM with Stemples™ in Elementary Science (Gen)***(Elementary–Middle Level) 001A, Convention Center***Richard A. Abbondanzio** ([rabbondanzio@mail.hockaday.org](mailto:rabbondanzio@mail.hockaday.org)), The Hockaday School, Dallas, Tex.

STEM scaffolding comes in the form of unique yet ubiquitous stemple™ manipulatives that afford a safe, cost-effective, and fun environment while learning about STEM disciplines.

**Engaging Elementary Students in Earth System Science (Earth)***(Preschool–Elementary) 001B, Convention Center***Lynne H. Hehr** ([lhehr@uark.edu](mailto:lhehr@uark.edu)) and **John G. Hehr** ([jghehr@uark.edu](mailto:jghehr@uark.edu)), University of Arkansas, Fayetteville**Gary Randolph** ([randolph@globe.gov](mailto:randolph@globe.gov)), **Julie S. Malmberg** ([malmberg@globe.gov](mailto:malmberg@globe.gov)), **Jessica N. Mackaro** ([jmackaro@globe.gov](mailto:jmackaro@globe.gov)), and **Sarah Tessorf** ([saraht@globe.gov](mailto:saraht@globe.gov)), The GLOBE Program, Boulder, Colo.

Engage young minds in exploring the world around them through Elementary GLOBE (K–4) early readers and hands-on activities.

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[www.pasco.com](http://www.pasco.com)

**Weathering and Erosion for Elementary Teachers**  
(Earth)

(Elementary) 002, 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 highlight several inquiry-based activities that you can incorporate into your lessons.

**Under Pressure: Activities Promoting an Understanding of Air Pressure and Other Atmospheric Processes That Create Severe Weather** (Earth)

(General) 101A, Convention Center  
**Teresa A. Eastburn** ([eastburn@ucar.edu](mailto:eastburn@ucar.edu)), NCAR, Boulder, Colo.

Presider: Becca Hatheway ([hatheway@ucar.edu](mailto:hatheway@ucar.edu)), NCAR, Boulder, Colo.

Join educators from the National Center for Atmospheric Research as they share their most effective demonstrations and activities for teaching and learning about air pressure, wind, density, convection, and other atmospheric processes that result in severe weather—tornadoes, hurricanes, and more. Learn about and interpret radar images and other observing systems. Take home activity write-ups, background content, and additional resources.

✓ **Developing Science Assessments That Support Inquiry** (Gen)

(Elementary–Middle Level) 202B, Convention Center  
**Martha M. Day** ([martha.day@wku.edu](mailto:martha.day@wku.edu)), Western Kentucky University, Bowling Green

Join me for a hands-on workshop on developing science assessment items that support a grades 4–8 inquiry-based classroom.

**Oobleck, Slime, and Dancing Spaghetti: Using Children’s Literature to Enhance Your Science Curriculum** (Gen)

(Preschool–Elementary) 213B, Convention Center  
**Jennifer C. Williams** ([jenniferwilliams@newmanschool.org](mailto:jenniferwilliams@newmanschool.org)), Isidore Newman School, New Orleans, La.

Promote student enthusiasm and understanding of scientific concepts by integrating children’s literature into inquiry-based experiments. This workshop demonstrates the seamless blend of “story time” and science. Leave with a bibliography of suggested titles and engage in many activities.

**Engineering Is Elementary: Marvelous Machines**  
(Phys)

(Elementary) 216A, Convention Center  
**Julia M. McComas** ([julia.mccomas@leanderisd.org](mailto:julia.mccomas@leanderisd.org)), **Linda Lippe** ([linda.lippe@leanderisd.org](mailto:linda.lippe@leanderisd.org)), and **Jennifer L. Meyer** ([jennifer.meyer@leanderisd.org](mailto:jennifer.meyer@leanderisd.org)), Leander (Tex.) ISD  
Investigate mechanical engineering in an engaging, interactive workshop and explore how we use this resource to uncover core ideas and standards to deepen student understanding.

**What Does Technology Have to Do with Problem-Based Learning?** (Gen)

(Elementary–Middle Level) 217A, Convention Center  
**Nancy C. Alexander** ([ncalexander@vcu.edu](mailto:ncalexander@vcu.edu)), Virginia Commonwealth University, Richmond

**Juanita Jo Matkins** and **Anne Mannarino** ([amannarino@wm.edu](mailto:amannarino@wm.edu)), The College of William & Mary, Williamsburg, Va.  
**Jennifer R. Mosser** ([jmosser@gmu.edu](mailto:jmosser@gmu.edu)), George Mason University, Fairfax, Va.

Join us to learn how we use a variety of innovative technologies to engage students in solving a real-world problem.

**Visual Vocabulary** (Gen)

(Elementary) 217D, Convention Center  
**Carol M. Jones**, Garland (Tex.) ISD  
**Karri L. Dawes** ([kldawes@garlandisd.net](mailto:kldawes@garlandisd.net)), Nita Pearson Elementary School, Rowlett, Tex.

Do your students struggle with science vocabulary? Take home new, innovative strategies to engage your students in using visual vocabulary to help master science concepts.

**NESTA Session: Activities in Earth System Science**  
(Earth)

(Elementary–High School) Ballroom A, Convention Center  
**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.

In this NESTA workshop, engage in multiple effective hands-on, inquiry-based activities that illustrate key concepts of Earth system science. Handouts!

# 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.

**DuPont Session: DuPont Presents “Natural Selection and Antibiotic-resistant Bacteria” (Bio)**

(High School) *Bonham B, Grand Hyatt*  
**Kim O’Byrne** (*kobyrne@q.com*), Mayfield High School, Las Cruces, N.Mex.

**Laura Hasselquist** (*hassel11@chipfalls.k12.wi.us*), Chippewa Falls Senior High School, Chippewa Falls, Wis.

**David A. Black** (*davidablack77@gmail.com*), Lone Oak High School, Pacucah, Ky.

Join us as we explore the effects of antibiotics on the population of disease-causing bacteria during an infection. Data are collected and graphed representing populations of more- and less-resistant bacteria.

**Lost in Translation: Exploring Protein Synthesis with Physical Models (Chem)**

(High School–College) *Lone Star Ballroom B, Grand Hyatt*  
**Tim Herman**, Milwaukee School of Engineering, Milwaukee, Wis.

Discover the translation process from mRNA to protein using innovative physical models of the insulin gene and protein. I’ll present a physical model of insulin mRNA—and then translate the mRNA into the insulin protein and consider how the protein triggers glucose uptake from the blood.

**Robotics in STEM Education (Gen)**

(Elementary–High School) *Lone Star Ballroom C, Grand Hyatt*  
**Chéla S. Wallace** (*chelawallace@gmail.com*), KIPP University Prep High School, San Antonio, Tex.

STEM education is a big push in the United States, and robotics is a great example of how to enforce STEM skills in an exciting way.

**The Organized Binder: Creating Powerful Learning Communities (Gen)**

(General) *Lone Star Ballroom D, Grand Hyatt*  
**Mitch Weathers** (*mitchweathers@gmail.com*), Sequoia High School, Redwood City, Calif.

The Organized Binder increases student success by providing structures that include a starting routine, goal setting, review of the previous day’s standards, metacognitive written reflection at the end of class, and more.

**Leveling Up (Phys)**

(High School) *Presidio A/B, Grand Hyatt*

**Barbara MacEachern** (*barbara\_maceachern@terc.edu*) and **Jamie Larsen** (*jamie\_larsen@terc.edu*), TERC, Cambridge, Mass.

What happens when game mechanics = the laws of nature? You get Leveling Up, a set of free, publically available games that are based on standards-based high school science and developed by professional game designers together with educators from TERC. Participants will get engaged with the game play and *need* to learn the science to succeed. These games are developed for wireless tablets and phones.

**Inquiry Science and Active Reading: Engagement and Interaction Across the Curriculum (Gen)**

(General) *Republic B, Grand Hyatt*

**Cody Sandifer** (*csandifer@towson.edu*), Towson University, Towson, Md.

Encounter “active reading” methods that help students practice reading comprehension strategies as well as monitor and improve their understanding of science content contained within textbooks.



**NSTA Press® Session: Picture Not Faking It! Using Trade Books and Activities to Understand Buoyancy (Gen)**

(Preschool–Elementary) *Texas Ballroom D, Grand Hyatt*

**Bill Robertson** (*wrobert9@ix.netcom.com*), Bill Robertson Science, Inc., Woodland Park, Colo.

**Emily Morgan** (*emily@pictureperfectscience.com*), Picture-Perfect Science, LLC, West Chester, Ohio

**Karen Ansberry** (*karen@pictureperfectscience.com*), Mason (Ohio) City Schools

*Picture-Perfect Science Lessons* help you integrate language arts and science, and the *Stop Faking It!* books help you understand basic science. Hmm...maybe you can use the resources together! Join the authors for a hands-on workshop that demonstrates how these resources can improve what you do in the classroom. We’ll cover sinking and floating and pirates—argh! Oh yeah, we have door prizes, too!

**Genetics for Middle School (Bio)**

(Middle Level) *Travis C/D, Grand Hyatt*

**Theresa Rabogliatti** (*trabogliatti@olgscott.net*), Our Lady of Grace, Pittsburgh, Pa.

In this workshop, we will focus on low-cost ways to model the basics of DNA, mitosis, replication, and protein synthesis for middle school students to help them have a better understanding.

**Bringing EARTH to STEM Education and the Next Generation Science Standards (Gen)**

(General) Salon C, Marriott Rivercenter

**Katie Lodes** (*katielodes@yahoo.com*), St. Joseph's Academy, St. Louis, Mo.

**Miriam Sutton** (*miriam.sutton@carteretk12.org*), Carteret County Schools, Beaufort, N.C.

**Carmelina Livingston**, St. Andrew's School of Math and Science, Charleston, S.C.

**Barbara J. Simon-Waters** (*barbarasimonwaters@gmail.com*), Morehead City, N.C.

**Kirsten Matsumoto** (*kmatsumoto@stevensonsschool.org*), Stevenson School, Carmel, Calif.

**Anne McCarthy** (*amccar@neisd.net*), Robert E. Lee High School, San Antonio, Tex.

EARTH stands for Education and Research: Testing Hypotheses. EARTH combines cutting-edge research and STEM lessons to implement crosscutting concepts and core ideas. Tested curriculum, online resources, and an annual workshop are highlights.

**Data Aggregation Without the Aggravation (Gen)**  
(Middle Level–High School) Salon D, Marriott Rivercenter

**Jeff Lukens** (*jeffrey.lukens@k12.sd.us*), Roosevelt High School, Sioux Falls, S.Dak.

Tired of waiting until the next day to graph and analyze data, resulting in loss of student interest? Come experience immediate, seamless data aggregation!

**But I Teach High School Science, Not English Language! (Gen)**

(High School) Salon M, Marriott Rivercenter

**Susan E. Hartley** (*semumford-hartley@aps.k12.co.us*), Hinkley High School, Aurora, Colo.

Have English language learners in a high school science class? Come learn fun, easy techniques that can increase writing and speaking skills while comprehending the science!

# 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.



**Adding Inquiry and Student Understanding of Photosynthesis** (Bio)

(Middle Level–High School) Alamo Salon D, Marriott Riverwalk  
**Mark D. Little** ([mark.little@bvsd.org](mailto:mark.little@bvsd.org)), Broomfield High School, Broomfield, Colo.

Engage your budding student scientists with these two labs using sensor technology to help them understand the difficult topic of photosynthesis while you learn ways to present student data.

**8:00–9:00 AM Exhibitor Workshop**

**Update on Climate Education and the Next Generation Science Standards** (Earth)

(Grades 6–12) 214A, Convention Center

Sponsor: NOAA

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

The Next Generation Science Standards and the NRC *Framework* provide guidance on integrating climate science into the classroom through scientific and engineering practices, core ideas, and crosscutting concepts. Participants will learn about key resources for educators and have an opportunity to discuss potential ideas with colleagues.

**8:00–9:30 AM Exhibitor Workshops**

**AP Environmental Water Quality Assessment Curriculum** (Env)

(Grades 9–12) 006A, Convention Center

Sponsor: LaMotte Co.

**Ken Rainis**, Precision Microslides, Cottonwood, Ariz.

This complete curriculum explores the water quality index to teach students STEM-based skills that apply to classroom and field activities and satisfy Section VI (water pollution) of the AP environmental topics outline. Students study actual data from the Kansas River in the classroom, then apply those principles learned to their local water source. Curriculum includes PowerPoints and QuickTime iPad/iPod videos for watershed ecology, water quality index, point/nonpoint source pollution, and more. Takeaways and door prize!

**Engaging Students in the Science Classroom** (Gen)

(Grades K–8) 006B, Convention Center

Sponsor: Pearson

**Zipporah Miller**, Author, Bowie, Md.

More inquiry in more places—whether you’re a lab-oriented teacher or a textbook-focused teacher, Zipporah Miller will show you a variety of hands-on/minds-on inquiry options to keep all your students engaged.

**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.

**Wind Energy for K–4** (Phys)

(Grades K–4) 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.

Learn how to harness the power of the wind by building wind cars with sails! Construct simple windmills that can do work! Try out these inexpensive and engaging hands-on activities that can be used to demonstrate wind power concepts to your K–4 classroom.

**Don’t miss these Saturday NGSS-related sessions**

Perspectives on the Next Generation Science Standards: Thoughts from Two Teacher Members of the NGSS Writing Team (page 17)

Implication of the NRC *Framework* and the Highly Anticipated NGSS for Teaching and Learning (page 40)

AoA Session: Walking the Talk—How to Proceed with the Next Generation Science Standards (page 82)

**NGSS@NSTA**  
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YouTube [/ohauschannel](https://www.youtube.com/channel/ohauschannel)

[www.ohaus.com](http://www.ohaus.com)  
Facebook [/ohauscorp](https://www.facebook.com/ohauscorp)

**Living By Chemistry: What Shape Is That Smell?**

**(Chem)**

(Grades 9–12)

007D, Convention Center

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

**Jeffrey Dowling** ([jeffrey.dowling.contractor@bfwpub.com](mailto:jeffrey.dowling.contractor@bfwpub.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 help students understand molecular structure and other core chemistry concepts using the context of smell. Take home free sample lessons and materials from the *Living By Chemistry* curriculum.

**Chemi-paloosa: Demonstrations and Hands-On Activities That Really Get a Reaction!**

**(Chem)**

(Grades 7–College)

008A, Convention Center

Sponsor: Aldon Corp.

**Alex Molinich** ([info@aldon-chem.com](mailto:info@aldon-chem.com)), Aldon Corp., Avon, N.Y.

Learn how to incorporate exciting and engaging chemical demonstrations and hands-on activities into your chemistry curriculum. Join us for an overview of Innovating Science's chemistry kits, including sample activities highlighting topics like hydrogen fuel cell technology, electrochemical remediation of wastewater, and several other topics. Door prizes will be awarded.

**Is Biology a Foreign Language?**

**(Bio)**

(Grades 8–12)

008B, Convention Center

Sponsor: Scientific Minds, LLC

**Kathy Reeves**, Scientific Minds, LLC, Orange, Tex.

*Mon dieu!* There are more new words in first-year biology than in first-year French! Scientific Minds will show you how to use the Biology Science Starters to teach more than 1,000 vocabulary words and increase success. Take home one month of FREE access to the research-based Biology Science Starters.

**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!

**The Full Course**

**(Bio)**

(Grades 6–8)

203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

Why is it important to take an antibiotic as described? Why must you take all the pills and not stop, even if you feel better? In this activity from the SEPUP middle school program, *Issues and Life Science*, students use a simulation to explore the development of antibiotic resistance in a sample of harmful bacteria. Key skills developed include making and using graphs and tables and number concepts.

**IQWST Tablet Edition: Blending the Effectiveness of Learning-by-Doing with the Power of Connected Mobile Technology**

**(Gen)**

(Grades 6–9)

204A, Convention Center

Sponsor: Sangari Active Science

**David Quinn**, Sangari Active Science, Brooklyn, N.Y.

Tablet computers are beginning to fulfill the long-held belief that technology can radically improve educational outcomes for students. The IQWST Tablet Edition merges a Learning-by-Doing middle school science curriculum with tablet technology to create an interactive student science notebook built on top of our NGSS Standards Engine. Come join us to learn about the future of middle school science.

**Misconception Mania: Exciting and Engaging Ways to Address Common Misunderstandings in K–8 Science**

**(Gen)**

(Grades K–8)

204B, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Michael DiSpezio**, Science Writer and Educational Consultant, North Falmouth, Mass.

Join Houghton Mifflin Harcourt author Michael DiSpezio for an entertaining and eye-opening survey of common misconceptions in science. Participants will expand their awareness of common science myths through game show-style interactions and engage in several simple and easy-to-repeat activities that profile and address students' misunderstandings.

**Teaching Science with Toys and Treats (Gen)**  
(Grades 3–11) 205, Convention Center

Sponsor: McGraw-Hill Education

**Ralph Feather, Jr.**, Bloomsburg University, Bloomsburg, Pa.

Learn fun, practical, and engaging hands-on teaching ideas using simple toys and treats. Take home a wealth of ideas for teaching difficult concepts in novel ways.

**GEMS® Sequences: Scientific Argumentation and the Common Core (Gen)**

(Grades K–3) 206B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Learn how to teach your students the language of “scientific argumentation” of the Common Core and the NRC *Framework* by stating claims and evidence throughout the investigation process. Then discover how the ocean plays a role in your present and future, no matter where you live.

**Genetics with *Drosophila* (Bio)**  
(Grades 9–12) 207B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

This workshop covers the basics of working with *Drosophila* through hands-on activities. Gain experience in anesthetizing fruit flies, identifying male and female flies, recognizing commonly used mutants and comparing them to wild-type flies, setting up new cultures of flies, and making crosses using Carolina™ Easy Fly™ *Drosophila*.

**The Dirty Job of Teaching Just Got Easier with Discovery High School Science Techbook (Gen)**

(Grades 9–12) 209, Convention Center

Sponsor: Discovery Education

**Michael Bryant**, Discovery Education, Chicago, Ill.

Maybe you don’t have to suit up and do gross stuff, but some days it feels like your job is just as hard. Learn how the new Discovery Education Science Techbook for biology, chemistry, physics, and Earth/space science makes it easier with engaging, interactive digital resources.

**Help us with your feedback...and get a chance for a free Kindle Fire HD 8.9"**

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**Inquiry-based 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.

Do you need to add inquiry labs to your chemistry course? Vernier has done the work for you with our lab book, *Investigating Chemistry through Inquiry*. In this hands-on workshop, you will learn how to conduct a chemistry inquiry investigation using sensors with our LabQuest 2.

**Using iPad and Vernier Technology to Enhance Inquiry-based Learning (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.

Research shows that using data collection technology builds deeper student understanding of critical concepts in science and increases test scores. Come see how sensors and probe-wire support iPad in science inquiry. In iPad classrooms, lab groups can use Vernier Graphical Analysis™ for iPad to work individually or collaborate to analyze and annotate data.

**Middle School Science: Core Concepts Osmosis Lesson (Bio)**

(Grades 5–8) 211, Convention Center

Sponsor: Ward's Science

**Deborah Linscomb**, Region 4 Education Service Center, Houston, Tex.

Engage in an interactive lesson tied to specific core concepts and science and engineering practices for middle school

students, using tools for life science. Discover hands-on activities and expert tips for infusing concepts for osmosis outlined in the highly anticipated Next Generation Science Standards with fun and inquiry-based applications.

**Unleashing Your Students' Inner Inventor—Robots, Video Games, and DIY! (Gen)**

(Grades 7–College) 212B, Convention Center

Sponsor: SparkFun Electronics

**Lindsay Craig** 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.

**Finding Funds for Biotech: A Grant-writing Workshop (Bio)**

(Grades 9–12) 217B, Convention Center

Sponsor: Bio-Rad Laboratories

**Kirk Brown**, Tracy High School, Tracy, Calif.

Whether you are looking to introduce a few hands-on labs or build an entire biotechnology program at your school, this workshop will prepare you to turn your dreams into a reality. By attending you will get a number of grant-writing tools, including samples of proposals, letters of support, budgets, and justifications to get you started. For a practical application of the new tools, participants are encouraged to submit proposals for a variety of competitive grants that will be made available at the workshop.

**8:00–11:00 AM Short Course****Expedition Earth and Beyond—Getting Students Actively Involved in NASA Exploration, Discovery, and the Process of Science (SC-13)***(Middle Level–High School)**Salon del Rey C, Hilton***Tickets Required: \$23****Paige Graff** ([paige.v.graff@nasa.gov](mailto:paige.v.graff@nasa.gov)), Engineering and Science Contract/Jacobs Technology, NASA Johnson Space Center, Houston, Tex.**Timothy McCollum** ([tmccollum@eiu.edu](mailto:tmccollum@eiu.edu)), Eastern Illinois University, Charleston

For description, see Volume 1, page 62.

**8:00 AM–12 Noon Short Course****Redesigning Testing in Science: Bringing Research-based Diagnostic Assessments into the Classroom (SC-14)***(K–16)**Salon del Rey B, Hilton***Tickets Required: \$38****Theo Dawson** ([theo@lectica.org](mailto:theo@lectica.org)), and **Carol Bennett Dessereau** ([carol@lectica.org](mailto:carol@lectica.org)), Lectica, Inc., Northampton, Mass.

For description, see Volume 1, page 62.

**8:00 AM–12 Noon NSTA/SCST Symposium****Using Biotechnology as an Interdisciplinary STEM Education Teaching Strategy (Bio)***(College)**Bowie B, Grand Hyatt*

Moderator: Brian R. Shmaefsky, SCST President, and Lone Star College–Kingwood, Tex.

**Damon Tighe**, Curriculum Training Specialist, Bio-Rad Laboratories, Hercules, Calif.**Sulatha Dwarakanath**, Bio-Link, and Adjunct, Associate Professor, Austin Community College, Austin, Tex.

The annual joint symposium by NSTA and the Society for College Science Teachers (SCST) symposium will provide the theory and practice of teaching STEM and science workforce skills in college and high school science teaching. Biotechnology techniques will be demonstrated as a unifying theme for the integration of biology, chemistry, engineering, math, and physics into each specific discipline. Workforce readiness for STEM careers will be discussed by speakers from BioLink and Bio-Rad.

Following the discussion are two breakout sessions sponsored by Bio-Rad that focus on STEM skills teaching:

**Breakout 1 (Biology)*****Engineer the Tools for Inquiry of Candy Food Dyes***

This session demonstrates how an open-ended inquiry lab about food dye chemistry can be used to teach the STEM principles of electrophoresis, which is a fundamental engineering technology for studying biological molecules.

**Breakout 2 (Chemistry and Physics)*****Engineer the Tools for Inquiry of Candy Food Dyes***

This session demonstrates how an open-ended inquiry lab about food dye chemistry can be used to teach the STEM principles of electrophoresis, which involves an integration of chemistry, mathematics, and physics content.

**8:30–9:30 AM Presentation****SESSION 1****Teacher Researcher Day Session: Teacher Research in Science Education in Multiple and Diverse Settings Poster Session (Phys)***(General)**Texas Ballroom A/B, Grand Hyatt***Deborah Roberts-Harris** ([drober02@unm.edu](mailto:drober02@unm.edu)), University of New Mexico, Albuquerque

Come to our poster session to find out about the wide variety of presentations that will occur throughout the day!

**8:30–10:30 AM Meeting**

**Shell Science Teaching Award Judging Panel Meeting**

(By Invitation Only) Conference Room 10, Marriott Rivercenter

**8:30–11:30 AM Short Course**



**Language for Meaning: Supporting English Language Learners in the Science Classroom (SC-15)**

(K–8) Salon del Rey A, Hilton

**Tickets Required: \$31**

**Diana Velez** ([dvelez@berkeley.edu](mailto:dvelez@berkeley.edu)), Lawrence Hall of Science, University of California, Berkeley

**Claudio Vargas**, Oakland Unified School District, Oakland, Calif.

For description, see Volume 1, page 62.

**9:00–10:30 AM Exhibitor Workshop**

**Lessons from Antarctica: Scientists Showcase Polar Ice Cores and Discuss Climate Research and Engineering (Earth)**

(Grades 6–12) 214A, Convention Center

Sponsor: NOAA

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

**Gary Clow**, U.S. Geological Survey, Lakewood, Colo.

**Jay Johnson**, University of Wisconsin, Madison

How do scientists know what they know about climate? What clues are hidden in the ice? Meet a scientist and an engineer engaged in cutting-edge research at the WAIS Divide. Get up close and personal with an ancient ice core! A hands-on activity will bring this home to your classroom.

**9:00 AM–12 Noon Short Course**

**The Ultimate Plate Tectonics Meet and Greet and Make and Take (SC-16)**

(Elementary–High School) La Reina, Hilton

**Tickets Required: \$50**

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

For description, see Volume 1, page 63.

**9:00 AM–4:00 PM Meeting**

**American Modeling Teachers Association Meeting**

Bonham, Marriott Riverwalk

Visit <http://modelinginstruction.org> for information.

**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.

**9:25 AM–12:30 PM NSTA Community Science Festival**

Exhibit Hall, Convention Center

Bring science to life for your students and children with the folks that do it best! NSTA is hosting a FREE community event to electrify parents, teachers, students, and other community members about the exciting world of science. The Festival will feature hands-on activities that will excite and inspire teachers and parents, live-animal presentations, and exciting demonstrations that will spark students' enthusiasm for STEM. Steven "Jake" Jacobs, also known as Wizard IV, will kick off the event with an exciting display of science experiments.

The doors to the Festival open at 9:15 AM. The first 250 participants through the door will receive FREE tote bags\* filled with items donated by participating companies and organizations.

\*One gift bag per person, per family. You must be 18 years or older to receive a bag. Bags are for participants only.

# 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 Listserver 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.



For more information or to become a member, visit [www.nsta.org/membership](http://www.nsta.org/membership) or call 1.800.722.6782

**9:30–10:00 AM Presentation**

**SESSION 1**

**Web 2.0 Technologies in the Science Classroom**

**(Gen)**

*(Middle Level–High School) Salon D, Marriott Rivercenter*

**Jillian L. Wendt** ([jillianwendt@yahoo.com](mailto:jillianwendt@yahoo.com)), Dinwiddie High School, Dinwiddie, Va.

Do you ever feel lost in the sea of current technologies? Do you ever wonder how to make technological connections with your students and increase inquiry and technological use in the science classroom? If so, this session is for you! We'll explore current Web 2.0 technologies. Upon completion, you will be armed with strategies for incorporating new, fun, and effective technologies in the science classroom, including blogs, webquests, study helps, online texts, and more!



**9:30–10:30 AM Presentations**

**SESSION 1**

**Beyond the Slinky: Sequencing Activities, Earthquake Visualizations, and Demonstrations to Enhance Student Learning of Seismic Waves** **(Earth)**

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

**John Taber** ([taber@iris.edu](mailto:taber@iris.edu)), IRIS, Washington, D.C.

Boing! Come enhance your slinky technique and explore additional seismic wave models. Investigate ground motion visualizations from recent earthquakes and learn to effectively sequence these models for powerful learning.

**SESSION 2**

**The Art of Scientific Data** **(Earth)**

*(General) 101A, Convention Center*

**David V. Black** ([elementsunearthed@gmail.com](mailto:elementsunearthed@gmail.com)), Walden School of Liberal Arts, Provo, Utah

Students at Walden School of Liberal Arts are creating amazing works of art using scientific data and 3-D animation software. Come learn how to locate authentic data and convert it into charts, graphs, images, and animations using open-source and free software. As your students learn to visualize datasets, they also learn to interpret and understand the data and develop marketable skills.

**SESSION 3**

**Bring Science to Life with Technology** **(Gen)**

*(Elementary) 101B, Convention Center*

**Jennifer V. Bruno** ([jennifer.bruno@trussvillecityschools.com](mailto:jennifer.bruno@trussvillecityschools.com)),

**Sabrina Johnson** ([sabrina.johnson@trussvillecityschools.com](mailto:sabrina.johnson@trussvillecityschools.com)),

and **Lisa Rish** ([lisa.rish@trussvillecityschools.com](mailto:lisa.rish@trussvillecityschools.com)), Paine Primary School, Trussville, Ala.

Learn how to use 21st-century tools to teach science to 21st-century learners.

**SESSION 4**

**Dazzling Deceptions: Discrepant Events That Delight and Mystify!** **(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.

Science experiences that seem contrary to “common sense” are great motivators for kids! Discrepant events build scientific understanding and stimulate creativity.

**SESSION 5**

**Being Smart with Graphs!** **(Gen)**



*(Middle Level–High School) 207A, Convention Center*

**Carolyn J. Staudt** ([carolyn@concord.org](mailto:carolyn@concord.org)), The Concord Consortium, Concord, Mass.

SmartGraphs activities “know” what graphs mean and scaffold students as they learn to understand graphs and the concepts conveyed in graphs.

**SESSION 6**

**To iPads and Beyond!**

**(Gen)**

*(Elementary)*

213A, Convention Center

**Kimberly K. Stilwell** ([kstilwell@bssd.net](mailto:kstilwell@bssd.net)) and **Christine M. Gibler** ([cgibler@bssd.net](mailto:cgibler@bssd.net)), Blue Springs (Mo.) School District

Join us for a fun and engaging session with ideas to get those iPads and iPods off the shelf and integrated into your science lessons. Hear from teachers at each grade level as they share and demonstrate tried-and-true activities to enhance student engagement and enthusiasm.

**SESSION 7**

**How Rube Goldberg Saved the City of Ember (Phys)**

*(Elementary)*

216A, Convention Center

**Samantha Koehler** and **Robin Oshins**, Adelson Educational Campus, Las Vegas, Nev.

Join us as we share our collaborative project using Rube Goldberg machines and *The City of Ember*, a novel—perfect for upper elementary classrooms.

**“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).

**NSTA** National Science Teachers Association

**SESSION 8** (two presentations)

*(Elementary–Middle Level/Informal)* 216B, Convention Center

**Using Before, During, and After Assessment (Gen)**

**Shawn A. Brown** (*sab@reinhardt.edu*), Reinhardt University, Waleska, Ga.

Discussion centers on how differentiated science assessment strategies can be used in elementary classrooms with all students.

**Using Concept Maps to Document Program Impact (Gen)**

**Nicholas F. Bourke** (*nbourke@aum.edu*) and **Connie Buskist** (*cbuskist@aum.edu*), Auburn University at Montgomery, Ala.

Hear findings from a study in which concept maps were used as an assessment tool documenting the impact of a field trip on students.

**SESSION 9**

**Informal Science Day Session: Dive and Discover—Ocean and Penguin Curriculum (Gen)**

*(Preschool–Middle Level/Inf.)* Blrm. B, Group 1, Convention Center

**Emily Brown**, Omaha's Henry Doorly Zoo® and Aquarium, Omaha, Neb.

Dive in and discover a curriculum to help increase students' science literacy by exploring oceans and its inhabitants. Interactive lessons encourage students to explore how oceans impact our everyday lives and to become environmental stewards.

**SESSION 10**

**Informal Science Day Session: Formal Science Education Collaborations—Policy and Practice (Gen)**

*(General)* Ballroom B, Group 3, Convention Center

**Jamie J. Alonzo** (*jamiejalonzo@gmail.com*), The Maritime Aquarium at Norwalk, Conn.

The highly anticipated Next Generation Science Standards signal a convergence in approach among formal and informal science education institutions. Join me in reevaluating these roles, including implications for policy and practice.

**SESSION 11**

**Informal Science Day Session: Using the Mix—Drawings to Look at Your Teaching (Gen)**

*(General)* Ballroom B, Group 4, Convention Center

**Phyllis Katz** (*pkatz15@gmail.com*), Retired Educator, Silver Spring, Md.

Informal science education became part of teacher education in Project Nexus. In this interactive presentation, participants will do drawings to learn more about their teaching.

**SESSION 12**

**How Science Shapes Art—The Next Chapter: Sharing Student Work and Reflections (Gen)**

*(Middle Level–College)*

*Bonham C, Grand Hyatt*

**Lauren D. Rentfro** (*rentfrla@lewisu.edu*), Lewis University, Romeoville, Ill.

The true content connections between science and art have been explored with high school students. This session shares their work and reflections.

**SESSION 13**

**Before and After Retirement: Practicalities and Possibilities (Gen)**

*(General)*

*Bonham E, Grand Hyatt*

**Howard Wahlberg**, Assistant Executive Director, Membership, NSTA, Arlington, Va.

**Mary R. Strother**, Retired Educator, Glen Allen, Va.

The NSTA Retired Advisory Board invites you to a vibrant and useful information-sharing session. Join your fellow colleagues and share your ideas about staying active both in and out of the profession.

**SESSION 14**

**G.A.M.E.S.S.: Getting Activated Motivated Enthusiastic Student Success (Gen)**

*(General)*

*Crockett A, Grand Hyatt*

**Kendria R. Johnson** (*kjohnson11@dallasisd.org*), Zan Holmes Middle School, Dallas, Tex.

**Jeremy Harden** (*jeharden@dallasisd.org*), Dallas (Tex.) ISD Games in the classroom are simply more fun for students! Don't you get bored helping students recall basic facts from three grades ago? Take reviewing material to the next level! Games can teach *all* learners. Games such as *Jeopardy!*, *Who Wants to Be a Millionaire*, and *Math Quiz Game Show* are tools that you can use inside your classroom to promote healthy competition as well as automaticity of basic facts for your struggling students.

**SESSION 15**

**Interactive AppBooks for Science (Gen)**

*(Elementary–High School)*

*Crockett B, Grand Hyatt*

**Melissa Stadtfeld** (*mstadtfeld@comcast.net*), Sugar Land, Tex.  
**Michele Riggs** (*abbykat@aol.com*), Richmond, Tex.

The interactive notebook goes digital! Move beyond paper and pencil and experience true digital notebooking based on brain research and students' processing of science concepts.

**SESSION 16** (two presentations)*(General)**Crockett D, Grand Hyatt***Standardized Tests Put to Good Use (Gen)****Katrina Scherben** (*katrina.scherben@gmail.com*), Equality Charter School, Bronx, N.Y.

Discover how standardized exams, when used creatively, provide teachers with differentiated material, quality writing prompts, and manageable data...and support inquiry lessons.

**EZ Rubrics (Gen)****Dan Carroll** (*thedancarroll@hotmail.com*), Yorktown High School, Arlington, Va.

Do you struggle with extensive rubrics that end up being nothing more than checklists? Come find out how to construct simple rubrics that get to the point and are easy to understand and grade.

**SESSION 17****NSTA Press® Session: Whole Class Inquiry, The Story Continues (Chem)***(General)**Lone Star Ballroom B, Grand Hyatt***Joan Gallagher-Bolos** (*katiramom@gmail.com*), Glenbrook North High School, Northbrook, Ill.**Dennis Smithenry** (*smithenryd@elmhurst.edu*), Elmhurst College, Elmhurst, Ill.

Come see whole class inquiry in action. Watch videos of a high school classroom and hear inspirational stories of creative, passionate teaching. Student-directed curriculum comes to life.

**SESSION 18****CSI on a Shoestring Budget (Gen)***(Middle Level–High School/Inf)* *Lone Star Blrm. D, Grand Hyatt***Karen Merritt** (*karmerritt@aol.com*), North Caddo Magnet High School, Vivian, La.

Forensic science can have fun-filled labs without spending a lot of money. Discover low-cost activities that help students learn basic science concepts in several areas.

**SESSION 19****Looking Back, Looking Ahead: Reflections of NSTA Distinguished Teaching Award Winners (Gen)***(General)**Lone Star Ballroom E, Grand Hyatt***Tom Lough** (*tlough@slb.com*), SEED–Schlumberger Excellence in Educational Development, Murray, Ky.**Julie E. Taylor** (*julie\_taylor@eee.org*), Adelanto (Calif.) School District**Susan German** (*susangermanscienceteacher@gmail.com*), Hallsville Middle School, Hallsville, Mo.**Paul E. Adams** (*padams@fhsu.edu*), Fort Hays State University, Hays, Kans.**Shirley Sybolt** (*ssybolt@hampton.k12.va.us*), Cooper Elementary Magnet School, Hampton, Va.**Donna Rini** (*drini@vermilionschools.org*), Vermilion High School, Vermilion, Ohio

President: Tom Lough

Recent winners of the NSTA Distinguished Teaching Award share their reflections, describe their science teaching approaches and experiences, and respond to questions from the audience.

**SESSION 20****NMLSTA Session: Science and Special Education—How to Make It Work (Gen)***(Middle Level–High School)**Mission B, Grand Hyatt***Kathleen Brooks** (*brooksks@madison.k12.ct.us*), Walter C. Polson Middle School, Madison, Conn.

Strategies will be shared for science teachers to use with special education students and when dealing with special education teachers who do not know science.

**SESSION 21****2012 Preservice Science Standards for Preservice Teachers by NSTA and the National Council for Accreditation of Teacher Education (Gen)***(College)**Republic A, Grand Hyatt***William R. Veal** (*vealw@cofc.edu*), College of Charleston, S.C.

Join me as I present the new 2012 NSTA/NCATE Preservice Science Standards for science teacher preparation and the assessments for data collection.

**SESSION 22**

**Genetics Gets Personal: Teaching the Ethical, Legal, and Social Issues in Personal Genetics (Bio)**

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

**Dana Waring** (*dwarling@pged.med.harvard.edu*), Harvard Medical School, Boston, Mass.

Explore the cutting-edge field of personal genetics and its benefits and challenges for individuals and our society through relatable topics, including athletics and crime.

**SESSION 23**

**NSELA Session: Knowing What We Don't Know: A Probative Formative Assessment Process (Gen)**

(General) *Travis A, Grand Hyatt*

**Christine A. Royce** (*caroyce@aol.com*), Shippensburg University, Shippensburg, Pa.

Let's discuss research on preservice teachers' performance on Formative Assessment Probes.

**SESSION 24**

**NASA Across the Curriculum (Gen)**

(Middle Level) *Travis B, Grand Hyatt*

**Wendi Laurence** (*wendi.b.laurence@nasa.gov*), Penn State, State College, Pa.

Discover a NASA curriculum that can be used with simulations and interdisciplinary teams.

**SESSION 25**

**Psychology: The Gateway Science (Gen)**

(General) *Conference Room 11, Marriott Rivercenter*

**Katherine P. Minter** (*kay\_minter@roundrockisd.org*), Westwood High School, Austin, Tex.

Psychology is a research-based diverse discipline that promotes scientific inquiry and content. Let's explore the American Psychological Association's National Standards for High School Psychology curricula.



## SESSION 26

**Bringing Forensics into Physics (Phys)**

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

Crime scenes and court cases help students connect physics to the real world in a highly engaging way.

## SESSION 27

**Making All That Science Content Make Sense (Gen)**

(General) *Salon J, Marriott Rivercenter*

**Fred R. Myers** (*myersf@glastonburyus.org*), Glastonbury (Conn.) Public Schools

Overwhelmed by all that science content? A project called “8+1” is effective in helping teachers sort out what is most important and helping students learn.

## SESSION 28

**AMSE Session: Science Education Equity Discoveries (SEEDs): Discussions About Social Justice Education Enactment for Next Generation Special Populations (Bio)**

(General) *Salon K, Marriott Rivercenter*

**Deb Morrison** (*2debmorrison@gmail.com*), University of Colorado, Boulder

The SEEDs collaboration of teachers and researchers will share successes and challenges of their work in implementing social justice curricula through a critical pedagogical framework.

## SESSION 29

**Making Inquiry the Curriculum for Science: A Standards-based Approach to Assessing Student Learning (Gen)**

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

**Jeff Batey** (*jeffbatey@gmail.com*), **Rob Bowers**, and **Stephen Traphagen** (*stephen@mtrtraphagen.com*), Rolling Meadows High School, Rolling Meadows, Ill.

Join us as we outline a protocol for daily assessment and analysis of students’ inquiry skills aligned to standards in science.

## SESSION 30 (two presentations)

(High School/Informal Ed) *Salon M, Marriott Rivercenter*

President: Frances Broadway, The University of Akron, Ohio  
**Reforming My Science Teacher Education to Incorporate Asian Teaching Methods of Quality Over Quantity (Gen)**

**Julie A. White** (*jaw185@zips.uakron.edu*) and **Julie M. Anthony** (*julie31@zips.uakron.edu*), The University of Akron, Ohio

Join us as we explore whether Korea’s emphasis on quality instruction is improving the achievement gap when compared to America’s education system that focuses on extensive quantity.

**English Language Learners and Science (Gen)**

**Cynthia Toledo** (*ctoledo@amnh.org*), American Museum of Natural History, New York, N.Y.

Come learn how students seeking improvement in English language proficiency can benefit from the use of a dual-language science curriculum housed in a museum setting.

## SESSION 31

**Kids Learning Life Science in a Virtual World (Bio)**

(Elementary–Middle Level) *Alamo Salon E, Marriott Riverwalk*

**Carolyn J. Lowe** (*drclowe@gmail.com*), Northern Michigan University, Marquette

**Amy Pihlainen**, Au Train-Onota Public School, Deerton, Mich.

See how grades 5–6 students used a virtual world to learn life science. We’ll show what they did and how they learned.

## SESSION 32

**Menhaden: A Window into STEM (Bio)**

(High School) *Alamo Salon F, Marriott Riverwalk*

**Alicia Oelfke**, Howard County Public School System, Ellicott City, Md.

Explore a set of 5E (Engage, Explore, Explain, Elaborate, and Evaluate) lessons for biology, U.S. government, and technology courses designed to address STEM concepts from multiple perspectives on one environmental issue.

## SESSION 33

**Bioplastics—Going from Synthetic to Natural Polymers (Chem)**

(Middle Level–High School) *Travis, Marriott Riverwalk*

**Sherri Conn Rukes** (*luvchem@gmail.com*), Libertyville High School, Libertyville, Ill.

Many of the items that we use today are becoming more Earth friendly. Learn how a bioplastic is made and what plant materials are used. Take home a CD with information and activities.

**9:30–10:30 AM Workshops**

**NASA’s “Reading, Writing & Rings”: Using Saturn to Teach Science and Language Arts (Earth)**

(Elementary) 001A, Convention Center

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

Explore NASA’s science and language arts curriculum that uses the Cassini mission to Saturn as inspiration for enhancing students’ interest in reading, writing, and science.

**Family Astronomy: The Panel (Earth)**

(Informal Education) 001B, Convention Center

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

With the support of the Rochester Institute of Technology Insight Lab and NASA Solar Dynamics Observatory, the Association for Astronomy Education presents a panel discussion on family astronomy.



**Successful Tools for Engaging Girls in Science: A National Panel of Women in STEM Share Proven Strategies and Programs (Gen)**

(Informal Education) 201, Convention Center

**Karen A. Peterson** (*kpeterson@edlabgroup.org*), EdLab Group, Lynnwood, Wash.

**Carrie Leopold** (*carrie.leopold@ndscs.edu*), North Dakota State College of Science, Fargo

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

**Kristian Fischer Trampus** (*ktrampus@uttyler.edu*), The University of Texas at Tyler

**Jean May-Brett**, Louisiana Dept. of Education, Baton Rouge

**Ellyn Savard** (*esavard@gsofct.org*), Girl Scouts of Connecticut, Bridgeport

Presider: Ellyn Savard

Explore a variety of programs and strategies across the country effectively engaging girls in fun, inspiring STEM activities across multiple disciplines and settings.

✓ **Whoooo Knew? Assessment Strategies for Inquiry Science (Bio)**

(Elementary) 202B, Convention Center

**Ellen Schiller** (*schillee@gvsu.edu*) and **Jacquelyn Melin** (*melinj@gvsu.edu*), Grand Valley State University, Grand Rapids, Mich.

Join us as we share formative and summative assessment strategies for an elementary unit on owls and owl pellets that can be adapted for any elementary science unit!

**Using a Human Orrery to Address Prior Knowledge About the Solar System (Earth)**

(Informal Education) 213B, Convention Center

**Larry A. Lebofsky** (*lebofsky@lpl.arizona.edu*) and **Michelle Higgins** (*mhiggins@girlscoutssaoz.org*), Girl Scouts of Southern Arizona, Tucson

**Don W. McCarthy** (*dwmccarthy@gmail.com*), The University of Arizona, Tucson

Address prior knowledge and model the daily and yearly motions of the planets and constellations using a student-driven orrey (moving model of the solar system).

**The Importance of Teaching Science in K–2 (Gen)**

(Elementary) 215, Convention Center

**Lisa Felske** (*lfelske@hcde-texas.org*), Harris County Dept. of Education, Houston, Tex.

There is a strong relationship between academic background knowledge and academic achievement. Building background knowledge in grades K–2 is key to enhancing future student achievement.

**Insight into Inquiry (Gen)**

(Elementary–Middle Level) 217A, Convention Center

**Patty L. Messersmith** and **Pamela Barry** (*pam.barry@msichicago.org*), Museum of Science and Industry, Chicago, Ill.

Immerse yourself in inquiry learning! Share learning strategies for diverse learners, tools, and knowledge for an inquiry-based classroom. Be active learners using inquiry.

**The Power of Scientists’ Stories in Teaching (Gen)**

(Elementary) 217D, Convention Center

**Kristin T. Rearden** (*krearden@utk.edu*), University of Tennessee, Knoxville

**Sarah C. Campbell** (*campbell@sarahccampbell.com*), Author/Photographer, Jackson, Miss.

**Andy Boyles**, *Highlights for Children*, Honesdale, Pa.

Use stories of scientific discovery, both contemporary and classic, to engage elementary students.

**NESTA Session: Exploring Planetary Science and Astronomy—What Would Galileo Do? (Earth)***(Elementary–High School) Ballroom A, Convention Center***Roberta M. Johnson** (*rmjohnsn@nestanet.org*), NESTA and University at Albany, Boulder, Colo.**Ardis Herrold**, National Earth Science Teachers Association, Plymouth, Mich.

Using Galileo as our guide, this NESTA workshop will explore planetary science and astronomy while emphasizing inquiry-based strategies and the nature and practice of science.

**Informal Science Day Session: Family Science and Engineering for Elementary-aged Children and Families (Gen)***(Elementary) Ballroom B, Group 2, Convention Center***David Heil** (*dheil@davidheil.com*), David Heil & Associates, Inc., Portland, Ore.

Learn about Family Science and Family Engineering, two exciting programs that actively engage parents and young children in exploring the worlds of science and engineering together. Join me to try out hands-on activities, browse the publications, and learn how easy it is to implement the program in your own community.

**Graphs: The Point of Integration for STEM (Gen)***(Elementary–High School) Lone Star Ballroom C, Grand Hyatt***Sharon Schleigh** (*sharon.schleigh@purduecal.edu*), Purdue University Calumet, Hammond, Ind.

Students commonly struggle with representation of ideas and events that require the use of graphs. Engage in activities to promote the use of graphs that facilitate the integration between STEM. Work out graphing techniques and applications and gain more confidence in teaching STEM through graphs and supporting students' representations of ideas.

**STEM Rocks! Discover the Excitement of Geoscience Research in Antarctica (Gen)***(General) Presidio B, Grand Hyatt***Betty Trummel** (*boop82@aol.com*), Husmann Elementary School, Crystal Lake, Ill.**Louise T. Huffman** (*lhuffman@andrill.org*), University of Nebraska–Lincoln

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

**Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Overview of Teacher Researchers (Gen)***(General) Texas Ballroom A/B, Grand Hyatt***Deborah Roberts-Harris** (*drober02@unm.edu*), University of New Mexico, Albuquerque

Want to find out what practitioner or teacher research is? This roundtable discussion is centered on an overview of teacher research—come learn how to get started.

**NSTA Press® Session: Stop Faking It! Finally Understand Light and Sound So You Can Teach It (Phys)***(General) Texas Ballroom D, Grand Hyatt***Bill Robertson** (*wrobert9@ix.netcom.com*), Bill Robertson Science, Inc., Woodland Park, Colo.

Perform activities from the *Stop Faking It! Light and Sound* books, with the author as your guide. We'll do color addition and subtraction, secret messages, and 3-D images. Cool stuff, no?

**New Twists on Torque: A Guided Inquiry Approach (Phys)***(General) Salon C, Marriott Rivercenter***Borislaw Bilash** (*bbilash@pascack.k12.nj.us*), Pascack Valley High School, Hillsdale, N.J.**Elise B. Burns** (*eburns@pascack.k12.nj.us*), Pascack Hills High School, Montvale, N.J.

Complete a sequence of inquiry-based activities to use as a model of curriculum design and assessment for physics and to reinforce understanding of torque.

**Simple to Sublime—Four Labs That Reveal Big Science (Chem)***(Middle Level–College) Alamo Salon A, Marriott Riverwalk***Mark F. Schlawin**, Princeton Charter School, Princeton, N.J.

Investigate four labs that use inexpensive materials and start simply and dig deeply into important science.

**How to Weigh Your Pterosaur (Bio)***(Middle Level–High School) Alamo Salon D, Marriott Riverwalk***Douglas R. Dawson**, Worcester State University, Worcester, Mass.

In this workshop, we will estimate the mass of extinct pterosaurs by comparing wing areas of modern birds and bats using actual-size silhouettes of each.

**9:30 AM–12:30 PM Workshop**

**NGSS® NSTA Implication of the NRC Framework and the Highly Anticipated NGSS for Teaching and Learning (Gen)**

(General) Lone Star Ballroom F, Grand Hyatt

**Joe Krajcik**, Michigan State University, East Lansing  
**Mary Starr** ([mary@starrscience.com](mailto:mary@starrscience.com)), Starr and Associates, Plymouth, Mich.

Science teachers and leaders will be introduced to *A Framework for K–12 Science Education* and provided materials and guidance for replicating the workshop with others.

**10:00–11:00 AM Exhibitor Workshop**

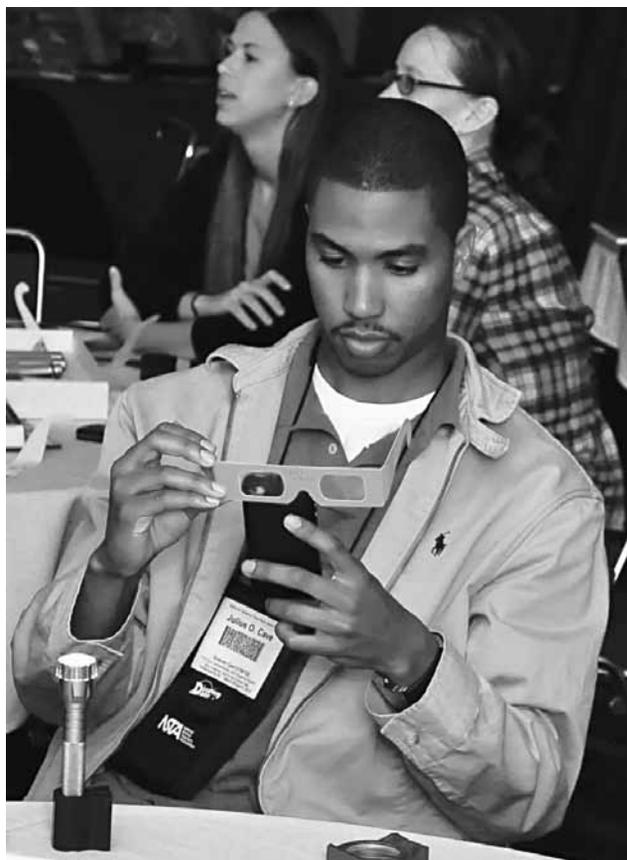
**Science, Fashion, and Fun! Genes in a Bottle™ Kit (Bio)**

(Grades 6–College) 217B, 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.



**10:00–11:30 AM Exhibitor Workshops**

**FDA Food Science Workshop for Middle School (Bio)**

(Grades 6–8) 006A, Convention Center

Sponsor: FDA Center for Food Safety and Applied Nutrition  
**Mimi Cooper** ([mimicooper@verizon.net](mailto:mimicooper@verizon.net)), FDA Education Consultant, Green Cove Springs, Fla.

**Elena Stowell** ([elena.stowell@kent.k12.wa.us](mailto:elena.stowell@kent.k12.wa.us)), Kentwood High School, Covington, Wash.

Come learn about FDA’s free food safety curriculum and related materials you can use in your classroom. Engage in hands-on activities about food science and nutrition that you can take back to your students. Learn from experienced teachers who have worked extensively with FDA’s Center for Food Safety and Applied Nutrition.

**New Tools, New Insights, and New Ways of Understanding Science with Miller & Levine Biology (Bio)**

(Grades 9–12) 006B, Convention Center

Sponsor: Pearson

**Kenneth R. Miller**, Brown University, Providence, R.I.

**Joseph Levine**, Author, Concord, Mass.

Students are changing—their abilities and interests are more diverse, their learning styles are more varied, and they are growing up “wired” into the internet and other new media. Join coauthors Ken Miller and Joe Levine as they provide teaching strategies on how to use *Miller & Levine Biology* to put the power of new science and technology directly into the hands of you and your students.

**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.

**The Effective Integration of Standards-based Instruction and STEM Project Based Learning (Phys)**

(Grades 5–8) 007B, Convention Center

Sponsor: Edusmart Science

**Franki Dockens** ([franki@edusmart.com](mailto:franki@edusmart.com)), Edusmart Science, League City, Tex.

There’s a lot of confusion about how to effectively integrate science, technology, engineering, and math into a student-centered Project Based Learning (PBL) environment while effectively teaching mandated standards. In this workshop, we will use Edusmart Science, a research-based, standards-aligned multimedia science resource and PBL to effectively integrate standards-based instruction and STEM.

**Solar Energy—Hands On! (Phys)**

(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.

Interested in moving past solar cars in the classroom? This workshop will explore the science behind solar-powered

boats, fountains, charging systems, and even water heating. This hands-on course will explore electrical concepts and the power of the Sun!

**Dive into Exploration (Gen)**

(Grades 6–12) 007D, Convention Center

Sponsor: National Geographic Education

**Julie Brown** ([jbrown@ngs.org](mailto:jbrown@ngs.org)) and **Samantha Zuhlke** ([szuhlke@ngs.org](mailto:szuhlke@ngs.org)), National Geographic Society, Washington, D.C.

**Sue Perin**, Lindblad Expeditions, New York, N.Y.

Exploration is the 2013 theme for National Geographic Society’s 125th anniversary. NGS has launched two new sets of FREE STEM-focused resources relating to this theme. Join us as we feature classroom videos of Robert Ballard’s exploration into the Alien Deep. Explore engineering activities that illustrate the complexity of James Cameron’s recent Challenger Deep dive to the bottom of Mariana Trench, and meet and learn from a Lindblad and *National Geographic Explorer* field naturalist who will share images and stories from Antarctic expeditions.



# 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

**The “E” in STEM—Connect the Virtual to the Physical  
(Phys)**

(Grades 5–12) 008A, Convention Center

Sponsor: WhiteBox Learning

**Graham Baughman** ([graham@whiteboxlearning.com](mailto:graham@whiteboxlearning.com)), WhiteBox Learning, Louisville, Ky.

WhiteBox Learning is a standards-based, applied STEM learning system. Engage your students in the complete STEM engineering design process. Flight 2.0, Mouse Trap Car 2.0, Structures 2.0, Green Car 2.0, Rockets 2.0, and Dragster 2.0 allow students to simulate their designs, from any browser, and compete “virtually,” 24/7, all around the world...how cool is that?!

**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.

**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!

**Promote Inquiry Using Chemistry Demonstrations  
from Flinn (Chem)**

(Grades 9–12) 103A, Convention Center

Sponsor: Flinn Scientific, Inc.

**Irene Cesa** ([icesa@flinnsci.com](mailto:icesa@flinnsci.com)), Flinn Scientific, Inc., Batavia, Ill.

Looking for new ways to incorporate more inquiry-based experiments in your chemistry classroom? Asking questions is the heart of inquiry, and there is no better way to get students to ask questions than by presenting exciting and engaging demonstrations! We will model the inquiry process, sharing a strategy that is used in the *Flinn ChemTopic Labs* series to integrate inquiry into every core curriculum topic. Take home a copy of a *Flinn ChemTopic Lab* manual!

**The Changing Earth (Earth)**

(Grades 6–8) 203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

Join us as we showcase select activities from the SEPUP middle school program *Issues and Earth Science*, including analyzing maps and landform features. First, you will investigate one facet of the changing Earth—weather. Using weather maps, participants will interpret maps to construct a weather report. Next, we will use a landform model to construct and investigate topographical maps and changes in landforms.

**Making Science Fun: MyBotanicPlanet.com (Bio)**

(Grades K–5) 204A, Convention Center

Sponsor: 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.

**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 on your students.

**Teaching Science with Toys and Treats (Gen)***(Grades 3–11) 205, Convention Center*

Sponsor: McGraw-Hill Education

**Ralph Feather, Jr.**, Bloomsburg University, Bloomsburg, Pa.

Learn fun, practical, and engaging hands-on teaching ideas using simple toys and treats. Take home a wealth of ideas for teaching difficult concepts in novel ways.

**Connecting Water Quality and Soil Properties Concepts in Your Science Labs (Env)***(Grades 9–12) 206B, Convention Center*

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Explore how water quality, soil properties, and soil formation affect the environment in this inquiry-based workshop. Whether you teach biology, environmental science, or APES, this workshop offers hands-on experience with activities designed to inspire students to learn new concepts and apply them in their local environment. Door prizes!

**Strawberry DNA and Molecular Models (Bio)***(Grades 9–12) 207B, Convention Center*

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Introduce students to the fascinating world of DNA through age-appropriate hands-on activities designed to make biology fun. From a kit series developed in cooperation with the DNA Learning Center, Cold Spring Harbor Laboratory, the activities use DNA models and real DNA from strawberries to present genetic studies.

**Common Practices That Get to the CORE of Great Instruction Using Discovery Education Science Techbooks (Gen)***(Grades K–12)**209, Convention Center*

Sponsor: Discovery Education

**Brad Fountain**, Discovery Education, Silver Spring, Md.

Join us as we provide concrete examples and activities that meet the Common Core State Standards through science instruction. We will explore how the resources available in the Discovery Education Science Techbook are easily used to enhance science instruction and address literacy skills through science journals and digital media.

**Inquiry-based Biology with Vernier (Bio)***(Grades 9–College)**210A, Convention Center*

Sponsor: Vernier Software &amp; Technology

**Mike Collins** (*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.

**Advanced Chemistry with Vernier (Chem)***(Grades 9–College)**210B, Convention Center*

Sponsor: Vernier Software &amp; Technology

**Elaine Nam** (*info@vernier.com*) and **Melissa Hill** (*info@vernier.com*), Vernier Software & Technology, Beaverton, Ore.

This hands-on workshop will feature our new Polarimeter, Mini GC Plus gas chromatograph, SpectroVis Plus spectrophotometer, and Melt Station melting temperature sensor. We will feature several new experiments that are suitable for advanced chemistry courses at the advanced high school level as well as college-level chemistry and organic chemistry programs.

**Middle School Science: Core Concepts Density Lesson (Phys)***(Grades 5–8)**211, Convention Center*

Sponsor: Ward's Science

**Joe Simmons**, VWR Education, Rochester, N.Y.

Engage in an interactive lesson tied to specific core concepts and science and engineering practices for middle school students, using tools for physical science. Discover hands-on activities and expert tips for infusing concepts for density outlined in the highly anticipated Next Generation Science Standards with fun and inquiry-based applications.

**Perimeter Institute: Hands-On Wave-Particle Duality (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

The wave-particle duality is one of the deepest mysteries of quantum mechanics. Come explore a hands-on activity that introduces students to the concepts involved in the wave-particle duality. The Challenge of Quantum Reality multimedia resource was designed by educators in collaboration with Perimeter Institute researchers.

**Kids Ahead, STEM-Works, and CSI Camps: Websites and Activities to Support Your Classes (Gen)**

(Grades 6–8)

214B, Convention Center

Sponsor: Southern Methodist University, Caruth Institute for Engineering Education

**Candice Lawrence** ([crlawrence@smu.edu](mailto:crlawrence@smu.edu)), **Kristine Reiley**, and **Lindsey Groark** ([lgroark@lyle.smu.edu](mailto:lgroark@lyle.smu.edu)), Southern Methodist University, Dallas, Tex.

Kids Ahead (<http://kidsahead.com>) and STEM-Works ([www.stem-works.com](http://www.stem-works.com)) websites are available for use by anyone, in any location, who is interested in engaging students in STEM subjects. Participants will be able to view both websites and have a chance to do a few hands-on demos of activities from the websites and our CSI Camps.

**Astronomy Meets U.S. History! (Earth)**

(Grades 5–College)

214C, Convention Center

Sponsor: Spitz, Inc.

**David Bradstreet** ([dbradstr@eastern.edu](mailto:dbradstr@eastern.edu)), Eastern University, St. Davids, Pa.

Space science concepts are difficult for many students to grasp, but astronomy teaching can be enhanced by showing how stellar behavior affected key moments in U.S. history. A new curriculum series, created by Dr. David Bradstreet, uses computer-based astronomy simulations to make connections between great moments in history and how our universe works. This interactive workshop will demonstrate four historic examples—originally created for planetarium teaching—that can be taught in a classroom setting.

**Real-World Science: NBC, NSF, and USPTO Videos You Can Use in Your Classroom (Gen)**

(Grades 6–12)

217C, Convention Center

Sponsor: National Science Foundation

**Mark Miano**, NBC News/NBC Learn, Washington, D.C.  
**Jorge Valdes**, U.S. Patent & Trademark Office, Alexandria, Va.

Understanding how the science content students learn in our classes connects to their everyday lives is challenging, given time constraints and equipment limitations. NBC Learn, the education arm of NBC News; the NSF; and the USPTO have partnered to offer a new video collection—the *Science of Innovation*—that highlights the creative process of developing ideas into useful products and processes.

**10:30–11:00 AM Presentations**

**SESSION 1**

**Teacher Researcher Day Session: Early Childhood Explorations with Force and Motion (Phys)**

(Preschool–Elementary) Texas Blrm. A/B, Group 1, Grand Hyatt

**Sandi Castro**, Del Valle (Tex.) ISD

Using inclined planes, we'll look at prekindergarten students' knowledge related to the properties of materials and force and motion.

**SESSION 2**

**Teacher Researcher Day Session: Strategies for Promoting Self-Efficacy and Their Effect on Students' Participation in Challenging Events (Gen)**

(Middle Level–High School) Texas Blrm. A/B, Group 2, Grand Hyatt

**Yajaira B. Fuentes-Tauber** ([yfuentes-tauber@hotmail.com](mailto:yfuentes-tauber@hotmail.com)), Brownsville High School, Brownsville, Tex.

Presider: Ryan Tauber, Rivera High School, Brownsville, Tex.

I encourage students to participate in first-of-a-kind family endeavors such as science fairs through awareness, positive reinforcements, and support to promote self-efficacy.

**SESSION 3**

**Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Choosing a Topic/Research Question (Gen)**

(General) Texas Ballroom A/B, Group 3, Grand Hyatt

**Jeremy A. Ervin** ([jeremy.ervin@stockton.edu](mailto:jeremy.ervin@stockton.edu)), The Richard Stockton College of New Jersey, Galloway

Want to make sense of your teaching? This roundtable discussion is centered on the beginning steps as a teacher researcher—selecting a topic and forming a research question.

**10:30–11:00 AM Exhibitor Workshop****Location, Location—Finding Your Way Around the Sky (Earth)***(Grades K–4) Booth #1500, Exhibit Hall, Convention Center*

Sponsor: Science First®/STARLAB®

**Helmut Albrecht** (*halbrecht@starlab.com*), Science First/STARLAB, Yulee, Fla.

In this “in dome” workshop, come learn how the Starry Night™ Small Dome can help your students discover how to use the stars to find their location on Earth and how to find their way around the nightly sky.

**10:30–11:30 AM Exhibitor Workshop****Bringing Climate Education Closer to Home: U.S. Forest Service Climate Change Education Resources (Env)***(Grades 6–12) 214A, Convention Center*

Sponsor: U.S. Forest Service

**Victoria Arthur** (*varthur@fs.fed.us*), U.S. Forest Service, Washington, D.C.

Explore Forest Service climate change education resources. Collect and enter tree data to quantify and value services trees provided. Learn about computer modeling and potential effects of different emissions scenarios on birds and trees. Bring climate change closer to home and help to answer the question, “What does climate change mean to me?”

**10:30 AM–12 Noon Science Seminar****Inquiry in the Urban Classroom: Connecting Curiosity and Creativity (Gen)***(Elementary–Middle Level) Grand Blrm. C2, Convention Center*

**Bobby Jeanpierre** (*bobby.jeanpierre@ucf.edu*), Associate Professor of Science Education, College of Education, University of Central Florida, Orlando

President: Xandra Williams-Earlie, Past President, Texas Science Education Leadership Association, Houston

Inquiry is at the heart of scientific thinking. Teachers facilitating inquiry in their classrooms to spark students’ curiosity is central to helping students develop “scientific habits of mind.” Often lost in the focus on standards and testing is the need to connect inquiry, curiosity, and creativity to provide the quality of science instruction that supports students’ scientific thinking. This presentation reviews data collected over five years on classroom practices of urban elementary and middle school teachers to provide insights into how they used inquiry, and focuses on the need to instill curiosity and creativity in science teaching.

*Dr. Jeanpierre is a National Science Foundation 2005 CAREER award recipient. Her research focused on how teachers in K–12 settings implemented inquiry-based science instruction, particularly in schools that have diverse, low socioeconomic student populations. Her research passion is to inquire into ways we can improve science teaching and learning by connecting research to practice with the belief that one day, through our research-to-practice efforts, we will close the science achievement gap and provide high-quality science teaching and learning experiences to all students.*

*Dr. Jeanpierre is currently she is the science education doctoral program and middle-level science program coordinator University of Central Florida. Prior to university level teaching, Dr. Jeanpierre taught science and mathematics courses to middle and high school students for more than 17 years. She used her gifted education training while teaching elementary level students in both gifted programs and in regular classroom settings.*

*She earned her master’s degree in education with a specialization in gifted education from St. Thomas University in St. Paul, Minnesota, and her PhD in curriculum and instruction with a double focus in science education and program evaluation from the University of Minnesota.*

Speaker is sponsored by Shell.

**10:30 AM–12 Noon Science Seminar**

**Research in Practice**

**(Bio)**

(General)

Grand Ballroom C3, Convention Center



**Judy St. Leger** (*judy.st.leger@seaworld.com*), Director of Pathology and Research, SeaWorld Parks and Entertainment, San Diego, Calif.

Presider: Kevin Fisher, Retiring President, Texas Science Education Leadership Association, and Lewisville ISD, Flower Mound

Diagnostic investigations in marine health concerns are like a mix of popular TV: 25% *CSI*, 25% *Bones*, and 50% Discovery Channel—with all of them being 100% amazing. Join Judy St. Leger as she examines how questions that arise from day-to-day investigations into wildlife mortality reach across the country to involve some of the top researchers in the nation. From reconstructing digital penguins to investigate diving physiology to solving mysteries associated with influenza in seals, Judy will share a series of investigations aimed at linking cutting-edge technology with animal and environmental health. The cases are designed to demonstrate how allied professions can synergize to take the everyday to new heights. Come see a side of SeaWorld as amazing as the sea, itself.

*As director of Pathology and Research for the SeaWorld Parks and Entertainment in San Diego, Dr. St. Leger's work focuses on the diagnosis of diseases in captive and wild marine mammals, birds, and fish. Her areas of interest include clinical pathology, anatomic pathology, advanced imaging, and molecular investigations. Dr. St. Leger is currently working on viral screening in dolphins and whales, pathogenesis of select infectious agents in marine species, and penguin embryonic development and diving physiology. Her field research has taken her to Australia, Peru, Vietnam, and Antarctica.*

*Her passion for conservation and science has recently taken a very exciting turn. In 2009, Judy led a team working to reduce threats to coral reefs by developing an aquaculture of tropical marine fish. The Rising Tide Conservation program is dedicated toward making breeding and rearing of marine tropical fish economically viable so that there are alternatives to collection. Judy holds a doctorate in veterinary medicine from Cornell University.*

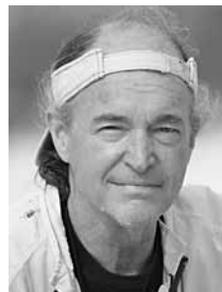
**11:00 AM–12 Noon Paul F-Brandwein Lecture**

**A Lifetime of Nature and Photography Education**

**(Bio)**

(General)

Grand Ballroom C1, Convention Center



**Arthur Morris** (*samandmayas-grandpa@att.net*), Photographer, Writer, Educator, and Workshop and Tour Leader, BIRDS AS ART, Indian Lake Estates, Fla.

Presider: Jack Padalino, The Paul F-Brandwein Institute, Unionville, N.Y.

Before Arthur Morris became a nature photographer and writer specializing in birds, he taught elementary school in New York City for 23 years. During the last decade of his teaching career, he began bringing his slides of birds and other wildlife into the classroom. Having the students start off by sketching the birds on newsprint with soft charcoal, whole new worlds were opened. He'll discuss how his birds and wildlife approach spurred student learning across a wide range of curricula, including math, science, geography, and "the birds and the bees." After retiring in 1993, he now teaches nature photography to adults with equally satisfying results.

*Arthur Morris is a freelance nature photographer, teacher, and writer specializing in birds. He is widely recognized as one of the world's premier bird photographers and photographic educators. His images, published the world over, are noted for both their artistic design and their technical excellence. Seven of his images have been honored in various BBC Wildlife Photographer of the Year competitions. His fitting credit line is Arthur Morris/BIRDS AS ART.*

*A former elementary teacher, he conducted for eight years the shorebird survey at the Jamaica Bay Wildlife Refuge for The International Shorebird Surveys in Manomet, Massachusetts. He has also authored how-to books, The Art of Bird Photography and The Art of Bird Photography II.*

*One of the original "Explorers of Light," Arthur has been a Canon contract photographer for the past 18 years and continues in that role today. He is a co-founding publisher of BirdPhotographers.net. He currently travels, photographs, teaches, and speaks his way across North America and the world while leading several BIRDS AS ART/Instructional Photo-Tours and Photo-Cruises each year. Visit his website at [www.birdsasart.com](http://www.birdsasart.com).*

Speaker is sponsored by The Paul F-Brandwein Institute.

**11:00 AM–12 Noon Presentations****SESSION 1****Aerospace Adventurers: Launching an After-School Aviation and Space Enrichment Program (Earth)***(Elementary–Middle Level)* 003A, Convention Center**Alex M. Rode** (*arode@ledyard.net*), Ledyard Center School, Ledyard, Conn.**Stuart Sharack** (*sharack@aol.com*), Juliet Long School, Gales Ferry, Conn.

You, too, can run an aerospace science club. Find out why and how to design and manage a STEM environment to challenge and inspire students.

**SESSION 2** (two presentations)*(Preschool–High School)* 201, Convention Center**Developing Inquiry with Young Learners: Outdoor Explorations with Diverse Audiences (Env)****Marc LeFebre** (*marcl@councilforee.org*), Council for Environmental Education, Houston, Tex.

Let's explore efforts to expand the intersection of EE and Early Childhood education through targeting diversity of children, families, educators, and institutions affiliated with Head Start programming.

**Empower ALL Learners with Neuroscience (Gen)****Katrina A. Scherben** (*katrina.scherben@gmail.com*), Equality Charter School, Bronx, N.Y.

Incorporating neuroscience can enrich the classroom culture, make differentiation easy, and increase student motivation. Walk away with resources and strategies for a diverse classroom.

**SESSION 3****Parent Involvement: Key to All Students' Success in School (Gen)***(Elementary–Middle Level)* 202B, Convention Center**Laura Tucker** (*ltucker@berkeley.edu*), Port Townsend Marine Science Center, Port Townsend, Wash.

Learn effective actions—supported by research—that schools and parents can easily implement together to foster student success in science and mathematics.

**SESSION 4****Feed the Octopus (Bio)***(Elementary)* 208, Convention Center**Robert M. Everett** (*robert.everett@ucf.edu*), University of Central Florida, Orlando**Christiana V. Luciano** (*christiana@knights.ucf.edu*), Holly Hill School, Port Orange, Fla.

Come play the “Feed the Octopus” game while learning about mollusks. This hands-on presentation includes a song and shares information on classroom implementation.

**SESSION 5****No Hands! Facilitating Authentic Science Discussions with Young Children (Gen)***(Preschool–Elementary/Supv.)* 213A, Convention Center**Christina Ryan** Highlands Park Elementary School, Austin, Tex.

Learn how discussions can provide opportunities for even our youngest students to gather ideas and make meaning of content within a collaborative scientific community.

**SESSION 6****Family Science Events: Logistics, Engaging Science, and Parent Involvement (Gen)***(Elementary–Middle Level)* 215, Convention Center**Jim McDonald** (*mcdon1jt@cmich.edu*) and **Janet Koch** (*koch1j@cmich.edu*), Central Michigan University, Mount Pleasant

President: Janet Koch

Join us as we explore how to set up a Family Science event, describe the process, and demonstrate several activities. Handouts!

**SESSION 7** (two presentations)

(Elementary–Middle Level) 216B, Convention Center  
President: Tara Brennan ([tbrennan@newworldprep.org](mailto:tbrennan@newworldprep.org)), New World Preparatory Charter School, Staten Island, N.Y.

**Differentiating Investigations of Global Conflicts: Making a Challenging Curriculum Accessible to Learners with Diverse Needs** (Gen)

**John A. Craven** ([jcraven@fordham.edu](mailto:jcraven@fordham.edu)), Fordham University, New York, N.Y.

**Tracy Hogan** ([hogan@adelphi.edu](mailto:hogan@adelphi.edu)), Adelphi University, Garden City, N.Y.

Walk away with evidence-based strategies for differentiating challenging yet highly motivating curricula for students with diverse needs using investigations of global conflicts.

**Beyond Inquiry: How Big Ideas, Argumentation, and Visual Supports Help Students with Disabilities in Science Classrooms** (Gen)

**Jonté (JT) Taylor**, The Pennsylvania State University, University Park

Walk away with additional strategies that support students with mild cognitive disabilities in inquiry-based classrooms. Supporting data will also be discussed.

**SESSION 8**

**Informal Science Day Session: STEM Learning with the SAM Academy On Wheels—Science, Art, Music** (Gen)

(General) Ballroom B, Group 3, Convention Center

**Jerry D. Valadez** ([jvaladez@cvsamacademy.org](mailto:jvaladez@cvsamacademy.org)), SAM Academy, Fresno, Calif.

**Ana G. Lopez** ([anaglopez4@att.net](mailto:anaglopez4@att.net)), Central Valley Science Project, Fresno, Calif.

SAM Academy On Wheels is a fully self-contained mobile classroom that can drive to any location and provide informal science, art, and music instruction.

**SESSION 9**

**Informal Science Day Session: The Effect of a Zoo Academic Science Program on High School Students' Math and Science Achievement and Perceptions of School Climate** (Gen)

(General) Ballroom B, Group 4, Convention Center

**Elizabeth Mulkerrin** ([elizabethm@omahazoo.com](mailto:elizabethm@omahazoo.com)), Omaha's Henry Doorly Zoo® and Aquarium, Omaha, Neb.

Informal science organizations across the country are designing specialized programs and schools that focus on rigor and relevance of math and science. The purpose of this study

was to determine the effect of a zoo science program on students' achievement, and their perceptions of the program's relevance, rigor, and relationships.

**SESSION 10** (two presentations)

(Middle Level–High School) Bonham C, Grand Hyatt

**Good Energy Policy? Bad for the Environment? Neither/Both? You Decide!** (Env)

**Brian E. Slopey** ([bslopey@u32.org](mailto:bslopey@u32.org)), U32 High School, Montpelier, Vt.

AP students develop critical-thinking skills and understand how environmental regulators balance science, law, and policy by considering the complex issues surrounding Ridge-line wind energy development.

**Students Assessing Their Local Air Quality: A Mini-Unit** (Env)

**Jeff D. Thomas** ([thomasjed@ccsu.edu](mailto:thomasjed@ccsu.edu)), Central Connecticut State University, New Britain

Use the inquiry method and the Environmental Protection Agency's online data to motivate students to learn about local air quality and address their misconceptions.

**SESSION 11**

**School Facebook? Allow Edmodo to Become the "Stem" of Online Assessment** (Gen)

(General) Crockett B, Grand Hyatt

**Michael Deiter**, Park Elementary School, Columbia, Pa.

Experience how Edmodo, a free online website similar to Facebook, can foster collaborative threaded discussions, polls, quizzes, and assignments.

**SESSION 12**

**Tricks of the Trade: Evidence-based Tips for New Science Teachers and Mentors** (Gen)

(General) Crockett C, Grand Hyatt

**Susan E. Burger** ([sburger@davidheil.com](mailto:sburger@davidheil.com)) and **Shannon Weiss**, David Heil & Associates, Inc., Portland, Ore.

Learn successful strategies used by professional development programs to increase mentor effectiveness and assist new science teachers to mature and excel as classroom instructors.

**SESSION 13**

 **NSTA Press® Session: Bringing Outdoor Science In** (Gen)

(Elementary–Middle Level) Lone Star Ballroom E, Grand Hyatt

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

Take students into the school yard with or without an outdoor classroom. Explore resources and strategies available from NSTA Press. Free seeds!

**SESSION 14****Improve Administrator Effectiveness: Use the NSTA Learning Center Accountability System (Gen)***(General)**Mission A, Grand Hyatt*

**Flavio Mendez** (*fmendez@nsta.org*), Senior Director, NSTA Learning Center, NSTA, Arlington, Va.

Come hear about the Learning Center, NSTA's e-PD portal, and its accountability system that administrators can use to document an individual's usage data and pre/post-test scores as well as manage the content of their cohort's home page and add branding. With more than 3,000 free resources and professional development tools integrated within a professional learning community, the Learning Center can enhance and extend teachers' face-to-face PD experiences.

**SESSION 15****NMLSTA Session: Diverse Students—What Am I Supposed to Do? (Gen)***(Middle Level)**Mission B, Grand Hyatt*

**Rajeev Kumar Swami** (*chem276@yahoo.com*), NMLSTA President, and Central State University, Wilberforce, Ohio Central State University is engaged in helping minority pre-service students learn strategies for teaching middle grade science and other core subjects. Join us as we focus on success stories and strategies to address the needs of a diverse student population.

**SESSION 16****Putting the “A” into STEM—STEAM (Gen)***(Supervision/Administration)**Republic A, Grand Hyatt*

**Steve Canipe** (*steve.canipe@waldenu.edu*), Walden University, Minneapolis, Minn.

Innovation and creativity from American students ranks near the top in international assessments. This session describes one way we stay there—STEM to STEAM.

**SESSION 17** (two presentations)*(High School–College)**Sequin A, Grand Hyatt***TACTILS: Teaching Advanced Characterization Tools in Local Schools (Phys)**

**Judith R. Hallinen**, Carnegie Mellon University, Pittsburgh, Pa.

Characterization tools are powerful because of advances in electron optics and computer interfaces. TACTILS teachers integrate a scanning electron microscope (SEM) into teaching...and students control the SEM!

**Does God Really Play Dice with the Universe?****(Phys)**

**Stuart M. Gluck** (*stu@jhu.edu*), Johns Hopkins University, Baltimore, Md.

Explore what quantum mechanics really tells us about the world so that you can teach students this modern physics topic with accuracy and conceptual clarity.

**SESSION 18****Teacher Researcher Day Session: PechaKucha 20x20 Teachers as Researchers (Gen)***(General)**Texas Ballroom A/B, Group 1, Grand Hyatt*

**John Graves** (*graves@montana.edu*), NSTA Director, District XV, and Montana State University, Bozeman

Prsident: Peggy Taylor (*peggy.taylor@montana.edu*), Montana State University, Bozeman

Using the lightning-round strategy of PechaKucha 20x20 (20 slides, 20 seconds each), participants will present their classroom research findings. Real teachers doing real research!

**SESSION 19****Teacher Researcher Day Session: Strategies to Design, Build, and Execute Successful STEM Projects****(Phys)***(Middle Level–High School) Texas Blrm. A/B, Group 2, Grand Hyatt*

**Bhavna Rawal** (*bhavnarawal@hotmail.com*), Quest High School, Houston, Tex.

**Poonam Tanwani** (*poonam.tanwani@springbranchisd.com*), School of Choice, Houston, Tex.

We will demonstrate how to go from innovative ideas to complete STEM projects with community support. MIT and NASA projects will be used as examples.

SESSION 20

**Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Ways to Collect Data**

(Gen)

(General) *Texas Ballroom A/B, Group 3, Grand Hyatt*

**Jeremy A. Ervin** ([jeremy.ervin@stockton.edu](mailto:jeremy.ervin@stockton.edu)), The Richard Stockton College of New Jersey, Galloway

Want to make sense of your teaching? This roundtable discussion is centered on another step as a teacher researcher—collecting data on your research question.

SESSION 21



**NSTA Press® Session: Uncovering K–12 Students' (and Teachers') Ideas on Life Science**

(Bio)

(General) *Texas Ballroom D, Grand Hyatt*

**Page Keeley** ([pagekeeley@gmail.com](mailto:pagekeeley@gmail.com)), 2008–2009 NSTA President, Jefferson, Maine

Examine and discuss a variety of formative assessment techniques to uncover common misconceptions and learning difficulties related to core ideas and scientific practices in K–12 life science.

SESSION 22

**NSELA Session: Action Research for Science Teachers: Useful Tools for Starting a Rewarding Professional Learning Community**

(Gen)

(General) *Travis A, Grand Hyatt*

**Ann Hammersly** ([ahammersly@susd.org](mailto:ahammersly@susd.org)), Chaparral High School, Scottsdale, Ariz.

Let's look at how to start an action research–based science Professional Learning Community (PLC), including techniques such as incorporating PLC protocols and Curriculum Topic Studies.

SESSION 23

**Great Ideas for Using iPads for Middle School STEM**

(Gen)

(Middle Level) *Travis B, Grand Hyatt*

**Ramona L. Nelson** ([rnelson4@utm.edu](mailto:rnelson4@utm.edu)) and **Becky J. Cox** ([beckyc@utm.edu](mailto:beckyc@utm.edu)), The University of Tennessee at Martin

Come discover classroom-tested ideas for using iPads for teaching integrated STEM lessons for grades 5–9. Take home lesson plans, activities, and a rubric for evaluating apps.

SESSION 24

**The Global-efficient Biomass Cookstove Education Project**

(Gen)

(General) *Conference Room 11, Marriott Rivercenter*

**Rich C. Lehrer** ([rlehrer@brookwood.edu](mailto:rlehrer@brookwood.edu)), Brookwood School, Manchester, Mass.

**Cristiana Mattos Assumpção** ([cmattos@colband.com.br](mailto:cmattos@colband.com.br)), Colégio Bandeirantes, São Paulo, Brazil

In this project, students from the U.S., Brazil, Rwanda, and Uganda collaborated with each other to research, build, and test efficient biomass cookstoves.

SESSION 25 (two presentations)

(High School) *Salon B, Marriott Rivercenter*

**QuarkNet: Particle Physics in the Classroom**

(Phys)

**Shane Wood** ([shane.wood@moundsvIEWSchools.org](mailto:shane.wood@moundsvIEWSchools.org)), Irondale High School and Minnesota QuarkNet Center, New Brighton

**Jon Anderson** ([jpanderson@isd12.org](mailto:jpanderson@isd12.org)), Centennial High School, Circle Pines, Minn.

Find out how cutting-edge particle physics research can be incorporated into the classroom. Join us as we demonstrate activities using data from Fermilab, CERN, and classroom detectors.

**Physics First: A Story of Adoption, Implementation, and Evaluation from 2007 to 2011**

(Phys)

**Craig E. Bouma** ([cbouma@loyolahs.edu](mailto:cbouma@loyolahs.edu)), Loyola High School of Los Angeles, Calif.

Findings from a four-year study indicate the effectiveness of a Physics First curriculum grounded in inquiry.

SESSION 26

**Eliminate Repeated Warnings and Multiple Requests**

(Gen)

(General) *Salon J, Marriott Rivercenter*

**Paula D. Isaac**, Little Rock (Ark.) School District

Prsident: Elizabeth Klammer, St. John's Episcopal School, Dallas, Tex.

Avoid power struggles. "Conflict is inevitable; combat is optional." I'll teach you three integrity questions along with a powerful tool that will free up to 4–7 hours per week for teaching time instead of discipline.

**SESSION 27****Student as Scientist: Steps Toward a Successful Student Research Program (Gen)***(Middle Level–High School/Supv.) Salon L, Marriott Rivercenter***Timothy J. Sears** (*t\_sears@hotmail.com*) and **Daniel T. Plas** (*plasdt@utpa.edu*), The University of Texas–Pan American, Edinburg

Join us as we share our six years of experience implementing a successful weekend and after-school program engaging middle school and high school Latino and at-risk students in original scientific research that has led to awards at state and international competitions. We'll cover frequently overlooked innovative course options, local partnerships, and diverse funding sources.

**SESSION 28** (two presentations)*(Middle Level–High School) Salon M, Marriott Rivercenter***Using and Applying Technology to Bridge Science Literacy in a Multilingual Classroom (Gen)****James E. Hollenbeck** (*jehollen@ius.edu*), Indiana University Southeast, New Albany

Technology crosses the language barrier that exists in the classroom. It opens the classroom to creativity and imagination for multilingual students.

**Making the Leap to a Textbook-less Course (Gen)****Mary H. Chuboff** (*mchuboff@athensacademy.org*), Athens Academy, Athens, Ga.

Join me for a demonstration on how to gather resources into a single, easily updated electronic space that can make students, teachers, and parents willing to toss the textbook!

**SESSION 29****All It Takes Is a Little Data! (Chem)***(High School) Alamo Salon B, Marriott Riverwalk***Dana Burgess-Peebles** (*peeplesd@fultonschools.org*),**Tracy L. Joyner** (*joynert@fultonschools.org*), and **Tiffany****Mays** (*mayst@fultonschools.org*), Banneker High School,

College Park, Ga.

Help drive your chemistry and physics instruction using the assessment process to communicate data, whether in the form of formative or summative assessments.

**SESSION 30****Scaffolding Inquiry in the Classroom Through the Use of Model Organisms (*Daphnia magna*) (Bio)***(Elementary–High School) Alamo Salon E, Marriott Riverwalk***Randy Schregardus** (*randy.schregardus@vai.org*) and**Carole J. Johnson** (*carole.johnson@vai.org*), Van Andel

Institute, Grand Rapids, Mich.

See how an investigation organizer—QPOE<sup>2</sup> (Question, Prediction, Observation, Explanation, Evaluation)—is used to scaffold inquiry. Techniques for culturing and investigating *Daphnia* will be shared.

**SESSION 31****DNA—5Es, Models, and Biotech (Bio)***(Middle Level–High School) Alamo Salon F, Marriott Riverwalk***Josh Hubbard** (*joshhubbard@intercity.org*), Inter-City Baptist

High School, Allen Park, Mich.

Come see how to do a 5E (Engage, Explore, Explain, Elaborate, and Evaluate) unit on DNA using models and simple biotech techniques.

**SESSION 32****Incorporating the Common Core State Standards (CCSS) for Reading and Writing into Introductory Chemistry (Chem)***(High School)**Travis, Marriott Riverwalk***Cece Schwennsen** (*cschwennsen@gmail.com*), Cate School,

Carpinteria, Calif.

Key science-related components of the CCSS will be discussed and participants will see how literacy skills can be incorporated into existing activities within chemistry curricula.

## 11:00 AM–12 Noon Workshops

### **Astronomy for Teachers (Earth)**

(Elementary–Middle Level) 001A, Convention Center  
**Donald T. Powers** (*dt-powers@wiu.edu*), Western Illinois University, Macomb

Participate in activities to understand concepts of astronomy so you will feel confident teaching your students concepts related to elementary and middle school astronomy.

### **Let's Grow Together (Earth)**

(Preschool) 001B, Convention Center  
**Montserrat Garibay** (*montserrat.garib@gmail.com*), Austin (Tex.) ISD

BLOCKS stands for Base Line Objectives for Children's Knowledge and Skills in Science. Join us as we show classrooms that use the garden as a vibrant foundation for integrated learning, youth development, and parent involvement. This workshop will demonstrate literacy, vocabulary development, and science and math skills with an inquiry-based approach.

### **Building Vocabulary for Elementary Earth Science (Earth)**

(Elementary) 002, Convention Center  
**Martha N. Alexander** (*malexander@esc18.net*) and **Sandra Casimir** (*scasimir@esc18.net*), Region 18 Education Service Center, Midland, Tex.

Presider: Mary Helen Livingston, Region 18 Education Service Center, Midland, Tex.

This fast-paced workshop will provide elementary school science teachers with strategies that can help their students develop vocabulary essential to plate tectonic concepts.

### **Grounding Science with Soil (Earth)**

(General) 101A, Convention Center  
**Sherry S. Fulk-Bringman** (*sherryfb@purdue.edu*), Purdue University, West Lafayette, Ind.

Walk away with inexpensive hands-on experiments and demonstrations that teach basic Earth science, biology, chemistry, and math skills.



### **Climate Models: Everything You Ever Wanted to Know, Ask, and Teach (Earth)**

(General) 207A, Convention Center  
**Teresa A. Eastburn** (*eastburn@ucar.edu*) and **Randy M. Russell**, NCAR, Boulder, Colo.

What is a climate model? How are they built and used? Join staff from NCAR—a leading NSF-sponsored national laboratory that develops climate models—in a fun and

informative session packed with hands-on activities, easy-to-master technological tools, games, and exceptional content. Be informed and ensure that your students are also informed regarding technological tools that improve our understanding of our planet.

### **Launching Pads: Using iPad Organizational Apps to Improve Science Teaching and Learning! (Gen)**

(General) 213B, Convention Center

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

This workshop will introduce participants to iPad apps as organizational tools that can improve lesson planning, teaching, and reflection. iPads will be available for hands-on practice!

### **Happy Marriage of Practices and Pendulums (Phys)**

(Elementary–Middle Level) 216A, Convention Center

**Lloyd H. Barrow** (*barrowl@missouri.edu*), University of Missouri, Columbia

Presider: Dannah Schaffer, University of Missouri, Columbia  
Join us for a demonstration on how teaching pendulums with practices can help intermediate teachers implement the new science frameworks.

### **What Are You Doing After School? (Gen)**

(Elementary–Middle Level) 217A, Convention Center

**Greg Vogt** (*vogt@bcm.edu*), Baylor College of Medicine, Houston, Tex.

**Barbara Tharp** (*btharp@bcm.edu*), CESI President, and Baylor College of Medicine, Houston, Tex.

Engage students as Super Science Sleuths and junior epidemiologists as they investigate how infectious diseases spread, the effects of diseases on populations, and possible remedies.

### **Snacking Your Way Through the Science Curriculum (Gen)**

(Elementary) 217D, Convention Center

**Stacey A. Osborne**, Mountain View Elementary School, Marietta, Ga.

Looking for ways to formally assess students? In this workshop, you will have the opportunity to assess students through hands-on, standards-based activities that integrate science, math, reading, writing, and technology.

**NESTA Session: National Earth Science Teachers Association Space Science 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.

**Jackie Allen** (*jaclyn.allen-1@nasa.gov*), ESCG at NASA Johnson Space Center, Houston, Tex.

**Cindy Birkner** (*birknerc@rlc.edu*), Rend Lake College, Ina, Ill.

**Pamela Harman** (*pharman@seti.org*), SETI Institute, Mountain View, Calif.

**Michelle Higgins** (*mhiggins@girlscoutsoaz.org*) and **Larry Lebofsky** (*lebofsky@lpl.arizona.edu*), Girl Scouts of Southern Arizona, Tucson

**Stacy Holland** (*stacymholland@katyisd.org*), Mayde Creek Junior High School, Houston, Tex.

**Nina L. Jackson** (*nina.jackson@noaa.gov*), NOAA Satellite and Information Service, Silver Spring, Md.

**Tom Lough** (*tlough@slb.com*), SEED–Schlumberger Excellence in Educational Development, Murray, Ky.

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

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

**Courtney Vanover** (*courtney.vanover@murray.kyschools.us*), Murray Elementary School, Murray, Ky.

**Erin Wood** (*erin.wood@lasp.colorado.edu*), Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder

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

**Informal Science Day Session: What’s a Planet and Why Is Pluto Not in the Planet Club Anymore?****(Earth)**

(General) Ballroom B, Group 1, Convention Center

**Brian Kruse** (*bkruse@astrosociety.org*) and **Greg Schultz** (*gschultz@astrosociety.org*), Astronomical Society of the Pacific, San Francisco, Calif.

Presider: Candace J. Lutzow-Felling, NSTA Director, Informal Science, and The State Arboretum of Virginia, Boyce  
 Experience an activity exploring solar system objects, creating your own categories for organizing them while learning how to help students understand how scientists categorize Pluto.

**Informal Science Day Session: From Paper Towers to Straw Kazoos—Free Online STEM Resources to Excite All Students****(Phys)**

(General) Ballroom B, Group 2, Convention Center

**Tricia Berry**, The University of Texas at Austin

Presider: Candace J. Lutzow-Felling, NSTA Director, Informal Science, and The State Arboretum of Virginia, Boyce  
 Create the tallest paper tower and make the loudest kazoo. Experience three STEM activities and free online resources available to support your instruction and programs.

**STEM Solar Lab: Student Learning with an Operating Photovoltaic System****(Gen)**

(General) Lone Star Ballroom C, Grand Hyatt

**Morton M. Sternheim** (*mort@umassk12.net*) and **Rob Snyder** (*snyder@umassk12.net*), UMass Amherst, Mass.

Join us and work with data from school photovoltaic arrays. Sample activities will illustrate how participants can engage students in analyzing the operation of PV arrays.

**Natural Differentiation with Rigor and Relevance for All****(Gen)**

(General) Lone Star Ballroom D, Grand Hyatt

**Donna A. Bullis**, Arlington (Tex.) ISD

Differentiation occurs naturally with foldables as each student works at his or her level. Learn while transforming basic classroom materials into 3-D interactive learning and assessment tools.

**Birds Bring Your Science Class Alive****(Gen)**

(Preschool–Middle Level/Informal) Presidio B, Grand Hyatt

**Ileana Betancourt**, Cornell Lab of Ornithology, Cornell University, Ithaca, N.Y.

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

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

No matter where you teach, it’s easy and inexpensive to engage kids in learning science through birds. Join this group of educators from across the country for a fun experience practicing bird-related science activities at a variety of hands-on-stations. Whether at the elementary or middle school level, you’ll take home ideas and resources to get your class started right away.

**Engaging Vocabulary...Let Me Count the Ways!**

**(Gen)**

*(Elementary–High School)*

*Republic B, Grand Hyatt*

**Rosemary Martin** ([ssibastrop@gmail.com](mailto:ssibastrop@gmail.com)), Smithville, Tex. Need some new strategies for approaching vocabulary? Come see 16 ways to make learning new terms more interactive and memorable!

**Teacher Researcher Day Session: Exploring Young Children's Science Knowledge and Skills**

**(Phys)**

*(General)*

*Texas Ballroom A/B, Group 4, Grand Hyatt*

**Mary E. Hobbs** ([maryhobbs@utexas.edu](mailto:maryhobbs@utexas.edu)) and **Melissa Garcia** ([melissagarcia@utexas.edu](mailto:melissagarcia@utexas.edu)), The University of Texas at Austin

Presider: Robert Williams, BLOCKS Project, The University of Texas, Belmont

Experience hands-on teacher researcher–designed assessment activities for young children. Researchers also describe typical (and not so typical) student responses to those assessments.

**Teacher Researcher Day Session: Technology and Climate Change**

**(Gen)**

*(Elementary–Middle Level)*

*Texas Blrm. A/B, Group 5, Grand Hyatt*

**Stephanie Selznick** ([sselznick@boston.k12.ma.us](mailto:sselznick@boston.k12.ma.us)), Curley K–8 School, Jamaica Plain, Mass.

**Rose Abramoff** ([rza@bu.edu](mailto:rza@bu.edu)), Boston University, Boston, Mass.

Come explore some of the lessons we used in a grade 5 science class. We studied technology and climate change while covering and connecting the state and national standards. Because I had a PhD student in my classroom, we will discuss what her role was in incorporating technology into my classroom.

**Explore Building Mousetrap Vehicles to Integrate STEM**

**(Phys)**

*(High School/Supervision)*

*Salon A, Marriott Rivercenter*

**Alden J. Balmer** ([al@docfizzix.com](mailto:al@docfizzix.com)), McNeil High School, Austin, Tex.

Find out how to integrate science, technology, engineering, and mathematics by building and modifying mousetrap vehicles to improve speed and distance traveled.

**NASA: Out-of-This World Inquiry-based Resources**

**(Phys)**

*(General)*

*Salon C, Marriott Rivercenter*

**Matthew Keil** ([matthew.j.keil@nasa.gov](mailto:matthew.j.keil@nasa.gov)), NASA Johnson Space Center, Houston, Tex.

Learn about the microgravity environment and how it affects the motion of familiar toys! A NASA Education Specialist will highlight NASA's online resources and education kits. Engage in an inquiry-based, hands-on investigation of toys in space and view astronauts demonstrating the same toys on the International Space Station. This workshop will provide all the tools needed to replicate the activities in your classroom.

**Quenching the Drought of Science Reasoning**

**(Gen)**

*(Middle Level–High School)*

*Salon D, Marriott Rivercenter*

**Barbara J. Brydon** ([bbrydon@fcusd.org](mailto:bbrydon@fcusd.org)), **Kristy Guarienti** ([kguarienti@fcusd.org](mailto:kguarienti@fcusd.org)), and **John Fuller** ([jfuller@fcusd.org](mailto:jfuller@fcusd.org)), Folsom High School, Folsom, Calif.

Presider: Jeanine Robb ([jrobb@fcusd.org](mailto:jrobb@fcusd.org)), Folsom High School, Folsom, Calif.

As part of an action research project, we are working as a vertical team in creating a set of model-based reasoning lessons encompassing grades 7–12. In this workshop, we will share with you our process and have you experience one of the student investigations. Take home a set of scientific reasoning lessons focusing on water.

**Using Science as a Tool for Reading and Writing Instruction**

**(Bio)**

*(Elementary–Middle Level)*

*Alamo Salon C, Marriott Riverwalk*

**Linda S. Linnen** ([lslinnen@aol.com](mailto:lslinnen@aol.com)), Retired Educator, Aurora, Colo.

Appropriate excerpts from several materials will be used to demonstrate how to simultaneously teach science and literacy to elementary and middle school students. True differentiation and individualization lessons will be demonstrated.

**Making Connections with Planaria!**

**(Bio)**

*(Middle Level–High School)*

*Alamo Salon D, Marriott Riverwalk*

**William R. Folk** ([folkw@missouri.edu](mailto:folkw@missouri.edu)), University of Missouri, Columbia

Come discover introductory and AP high school biology inquiry activities using planaria to measure and analyze tissue regeneration and acquisition of functional photoreceptors.

**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.

**11:30 AM–12:30 PM Exhibitor Workshop****Lunch with Climate Scientists and Education Specialists—Bring Your Own Lunch! (Env)***(Grades 6–12)**214A, Convention Center*

Sponsor: NOAA

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

**Victoria Arthur**, U.S. Forest Service, Washington, D.C.

**Linda M. Morris**, Thayer School of Engineering, U.S. Ice Drilling Program, Hanover, N.H.

What do you want to learn about climate change—Where to find high-quality education resources? How to address student misconceptions? What the latest research tells us? Join us for informal one-on-one discussions with scientists and educators about issues surrounding climate change. Come prepared with your questions!

**12 Noon–12:30 PM Presentation****SESSION 1****Teacher Researcher Day Session: Science Inquiry Group Network (Gen)***(General)**Texas Ballroom A/B, Grand Hyatt*

**Emily H. van Zee** (*emily.vanzee@science.oregonstate.edu*), Oregon State University, Corvallis

**Deborah Roberts-Harris** (*drober02@unm.edu*), University of New Mexico, Albuquerque

Join our conversation about ways to inquire into science learning and teaching. Topics include ideas to foster teacher research, using context-rich problems to motivate and enhance learning, and using technology to support science inquiry among others.

**12 Noon–1:30 PM Meeting****AMSE Past Presidents Meeting***(By Invitation Only) Conference Room 10, Marriott Rivercenter***12 Noon–1:30 PM NSTA/SCST College Luncheon****Coherent Curricula for Preparing Science Teachers and Teaching Students Science (M-7)***(Tickets Required: \$60)**Bonham E, Grand Hyatt*

**Michael W. Klymkowsky** (*michael.klymkowsky@colorado.edu*), Professor of Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, and Institute of Molecular Systems Biology, ETH Zurich, Switzerland

Catalyzed by working with Erin Furtak of University of Colorado Boulder on “Teaching and Learning Biology” as well as the CLUE and Biofundamentals projects, I will discuss strategies involved in designing disciplinary curricula around the goal of producing students with a comfortable and competent understanding of their scientific discipline (perhaps the most accurate possible assessment strategy for program success).

*Mike Klymkowsky is professor of Molecular, Cellular, and Developmental Biology at the University of Colorado Boulder (UC Boulder). Dr. Klymkowsky carried out postdoctoral work in cell and neurobiology at University College London and The Rockefeller University before joining the faculty at UC Boulder in 1983.*

*Dr. Klymkowsky’s ongoing scientific studies focus on the inductive interactions involved in early vertebrate embryonic development, with particular interest in cytoskeletal dynamics and the behavior of the neural crest. Driven by a recognition of the deficiencies in student understanding due to defects in course and curricular design, he has been involved in developing assessment methods, including the NSF-funded Biology Concept Inventory, and educational materials, including a redesigned introductory molecular biology course, Biofundamentals, and an online laboratory course (virtuallaboratory.net).*

*These projects led to an ongoing collaboration with Melanie Cooper to develop a radically new introductory chemistry curriculum (CLUE: Chemistry, Life, the Universe & Everything), with Sam Bryfcynski and Cooper on a novel, graphic-based formative assessment system, BeSocratic (used extensively in CLUE and Biofundamentals), and with Highlighter.com to make Biofundamentals a socially interactive text.*

*Dr. Klymkowsky is a AAAS Fellow, a recipient of a Best Should Teach Award and a codirector of the CU Teach Science Teacher Recruitment and Certification program.*

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

## 12 Noon–1:30 PM Exhibitor Workshops

### English Language Learners in the Science Class: Integrating Language and Science Learning (Gen)

(Grades 3–8) 006B, Convention Center

Sponsor: Pearson

**Bonnie E. Baer-Simahk** and **Patricia Aube**, Fitchburg (Mass.) Public Schools

Strengthen your instruction of ELLs by integrating language and science objectives. Discover practical strategies and resources, essential for second language learners in the science class.

### 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.

### Virtual Cell (Bio)

(Grades 9–College) 007B, Convention Center

Sponsor: WoWiWe Instruction Co.

**Brian Slator**, WoWiWe Instruction Co., Fargo, N.Dak.

Virtual Cell is a 3-D immersive biology simulation created by WoWiWe Instruction Company. It has been designed to be implemented into high school and first-level college biology instruction. The workshop will be a playthrough of the simulation, while highlighting the benefits to students.

*Note:* Please bring laptops to participate.

### Bringing Real Neuroscience (Spiking Neurons!) into Your Classroom (Bio)

(Grades 5–College) 007D, Convention Center

Sponsor: Backyard Brains, Inc.

**Timothy Marzullo** ([info@backyardbrains.com](mailto:info@backyardbrains.com)), Backyard Brains, Inc., Ann Arbor, Mich.

Want to show your students the real electrical activity of muscles and neurons? Curious about how remote-control cockroaches work and the physiology of reaction times and

arm wrestling? During our workshop, you will learn—via live demos—how to bring neuroscience to your classroom.

### Share My Lesson: Free K–12 Resources Developed by Teachers for Teachers (Gen)

(Grades K–12) 008B, Convention Center

Sponsor: American Federation of Teachers

**Heidi Glidden** ([hglidden@aft.org](mailto:hglidden@aft.org)), American Federation of Teachers, Washington, D.C.

Share My Lesson ([www.sharemylesson.com](http://www.sharemylesson.com)) is a place where educators can come together to create and share their very best teaching resources. Developed by teachers for teachers, this free platform gives access to more than 250,000 high-quality teaching resources and provides an online community in which teachers can collaborate with, encourage, and inspire each other. Share My Lesson has a significant resource bank for Common Core State Standards, covering all aspects of the standards, including advice, guides, and dedicated resources that support the 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!

### Hot Bulbs: Investigating Energy Efficiency (Phys)

(Grades 6–8) 203A, Convention Center

Sponsor: LAB-AIDS, Inc.

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

Why use compact fluorescent instead of incandescent bulbs? In this activity from the SEPUP middle level series, *Issues and Physical Science*, participants use specially designed equipment to measure the energy lost as heat by small incandescent bulbs. Energy concepts include calories, heat transfer, efficiency, and more.

**Meeting the Needs of Today’s Physics Students****(Phys)***(Grades 9–12)*

204B, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Dave Kowal**, Houghton Mifflin Harcourt, Delafield, Wis. Have you noticed that the needs of your physics students have changed over the years? Younger students enrolled in physics classes may encounter challenges with reading abilities, conceptual understanding, and computational skill. Join us as we explore physics from a novice student perspective. Experience some unique differentiation techniques and use new resources from *Holt McDougal Physics* that foster inquiry and support problem solving. Discover our new Virtual Physics Labs, created by Polyhedron Learning Media, Inc. Receive tools and strategies you can use tomorrow!

**I See What You Mean! Developing Visual Literacy****(Gen)***(Grades K–8)*

205, Convention Center

Sponsor: McGraw-Hill Education

**Jo Anne Vasquez** ([jvasquez@helios.org](mailto:jvasquez@helios.org)), 1996–1997 NSTA President, and Helios Education Foundation, Phoenix, Ariz. Interpreting and understanding the visuals and illustrations students encounter in their science texts is more than just luck. See what the current research says and experience some new strategies for improving student understanding.

**Elements for Success: Exploring Carolina Chemistry****(Chem)***(Grades 9–12)*

206A, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Discover Carolina kits, apps, videos, and demonstration activities that can engage students and help them learn the fundamentals of the periodic table, polyatomic ions, and chemical bonding. Active participation is required to learn how Carolina resources can help make you successful in your chemistry classroom.

**Introduction to Wisconsin Fast Plants®****(Bio)***(Grades K–12)*

207B, Convention Center

Sponsor: Carolina Biological Supply

**Carolina Teaching Partner**

Experience the versatility of using Wisconsin Fast Plants. These small, quick-growing plants are ideal classroom tools for all learning levels to explore topics such as plant growth and development, environmental effects, genetic variation, evolution, life cycle, and nutrient cycling. 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 classrooms with only one computer to those with a computer for each student.

**Physics with Vernier****(Phys)***(Grades 9–College)*

210A, Convention Center

Sponsor: Vernier Software &amp; 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.

**Advanced Biology and Biotechnology with Vernier****(Bio)***(Grades 9–College)*

210B, Convention Center

Sponsor: Vernier Software &amp; Technology

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

In this hands-on workshop, you will learn how easy it is to integrate Vernier technology into your advanced high school biology or college biology course. Experiments from our *Advanced Biology with Vernier* lab book using SpectroVis Plus Spectrophotometer and Fluorometer will be performed and our Digital Bioimaging Systems will be demonstrated.

**Building Readiness in Science: Grades 3–5****(Gen)***(Grades 3–5)*

211, Convention Center

Sponsor: Ward’s Science

**Deborah Linscomb**, Region 4 Education Service Center, Houston, Tex.

Take the scary out of the highly anticipated Next Generation Science Standards with simple, fun, interactive lessons tied to specific core concepts and science and engineering practices for elementary school. You’ll learn techniques for introducing inquiry and leave with a lesson plan you can immediately incorporate into your classroom.

**Perimeter Institute: Curved Space-time in the Classroom (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

Bring Einstein's curved space-time model for gravity into your classroom using masking tape and balloons to explain free fall and predict time dilation, as observed in GPS calculations. The Revolutions in Science and GPS and Relativity multimedia resources were designed by educators in collaboration with Perimeter Institute researchers.

**Brain, Behavior, and the Senses in the Next Generation Science Standards (Bio)**

(Grades 6–College) 214B, Convention Center

Sponsor: Society for Neuroscience

**Janet Dubinski** ([dubin001@umn.edu](mailto:dubin001@umn.edu)), University of Minnesota, Minneapolis

**Patricia Camp** ([pcamp@delranschools.org](mailto:pcamp@delranschools.org)), Delran (N.J.) School District

With the appearance of brain science in the highly anticipated Next Generation Science Standards, teachers are scrambling for ideas to bring this potentially intimidating topic into their classrooms. It's easy! Come discuss approaches to the new brain standards with a neuroscientist and a superintendent, learn hands-on classroom activities, and access credible resources from the world's leading neuroscience society through *BrainFacts.org*.

**Exploring Proteins and Nucleic Acids at the PDB (Bio)**

(Grades 7–College) 214C, Convention Center

Sponsor: RCSB Protein Data Bank

**David S. Goodsell** ([goodsell@scripps.edu](mailto:goodsell@scripps.edu)), The Scripps Research Institute, La Jolla, Calif.

Life is three-dimensional. This extends to life's molecular building blocks—proteins, DNA, and RNA. Join *Molecule of the Month* author David Goodsell to learn about the RCSB Protein Data Bank's ([www.rcsb.org](http://www.rcsb.org)) free resources and tools that can help students explore the molecules of biological processes that define life.

**12 Noon–2:00 PM CESI/NSTA Elementary Science Luncheon**

**Science Projects and Graphic Organizers with Dinah Zike (M-8)**

(Tickets Required: \$60) Lone Star Ballroom A, Grand Hyatt



**Dinah Zike** ([dma@dinah.com](mailto:dma@dinah.com)), President, Dinah Zike Academy and Dinah-Might Adventures, LP, San Antonio, Tex.

Join Dinah Zike, a former CESI science advocacy award winner, for this hands-on luncheon featuring science projects and manipulatives.

Materials will be furnished and participants

will leave with ideas that can easily be implemented across all grade levels.

*Dinah Zike is a nationally renowned author, education consultant, and lecturer. She has invented hundreds of educational manipulatives (graphic organizers) that are used internationally by educators, trainers, and consultants around the globe. Dinah's Foldables® are an exclusive feature of McGraw-Hill textbooks, and Dinah has developed more than 200 supplemental educational books and materials used in homes and classrooms nationally and in English-speaking countries around the world.*

*Dinah's books, Notebook Foldables® and Foldables®, Notebook Foldables®, & VKV®s for Spelling and Vocabulary (Grades 4–12) were judged top classroom picks in the 17th annual Learning Magazine Teachers' Choice Awards.*

*In 2004, Dinah received the Council for Elementary Science International Elementary Science Advocate Award, one of her most treasured accolades.*

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

## 12 Noon–2:00 PM Aerospace Educators Luncheon

### Living and Working Aboard the International Space Station (M-9)

(Tickets Required: \$60)

Salon E, Marriott Rivercenter



**Joseph M. Acaba**, NASA Astronaut, Educator, and Hydrogeologist, NASA Johnson Space Center, Houston, Tex.

Join your colleagues for a sit-down lunch and hear a dynamic presentation by NASA astronaut Joseph Acaba and converse with others interested in NASA's compelling education mission.

“So what’s it really like?” Astronaut Joseph Acaba will share his experiences living and conducting science experiments aboard the International Space Station during a four-month period in 2012. He also will discuss how NASA Education plans to support the Next Generation Science Standards with current and future resources and opportunities. Audience interaction is encouraged.

*It’s a rare leap to go from teaching math and science to logging 138 days in space as an astronaut, but that is precisely Joseph Acaba’s career trajectory. Before being selected in 2004 as a NASA astronaut candidate, Joseph taught high school science at Melbourne High School, Florida, and middle school math and science at Dunnellon Middle School, Florida.*

*A member of the U.S. Marine Corp, Reserves, Joseph’s experience includes work as a hydrogeologist in Los Angeles, primarily on Superfund sites, and as an environmental education awareness promoter in the Dominican Republic for the Peace Corps. He also was manager of the Caribbean Marine Research Center at Lee Stocking Island in the Exumas, Bahamas.*

*He is the first person of Puerto Rican heritage to serve as an astronaut and has carried the Puerto Rican flag with him in space. Completing his NASA training in 2006, astronaut Acaba was assigned to STS-119, which flew from March 15–28, 2009, to deliver the final set of solar arrays to the International Space Station. He also served as a flight engineer aboard the International Space Station. An intra-vehicular crew member for two U.S.-based spacewalks, he assisted in the restoration of a critical power unit and in exchanging a faulty camera on the station’s robotic arm. Joseph has also conducted numerous scientific research experiments while in space.*

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

## 12 Noon–2:00 PM Exhibitor Workshop

### Wind-energized Classroom (Phys)

(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.

## 12:30–1:30 PM NESTA Advances in Earth and Space Science Lunchtime Lecture

### NESTA Session: If These Rocks Could Talk—Earth’s Climate in the Deep Past (Earth)

(Informal Education)

Ballroom A, Convention Center

**Mark Nielsen**, Science Education Fellow, Howard Hughes Medical Institute, Chevy Chase, Md.

Presider: Roberta M. Johnson ([rmjohnsn@nestanet.org](mailto:rmjohnsn@nestanet.org)), NESTA and University at Albany, Boulder, Colo.

The study of paleoclimate tells a fascinating story of deep Earth history and the varying conditions under which life on our planet has evolved. But another reason to study paleoclimate is to give context to current climate change and shed light into its potential severity and impact.

This talk will draw connections between Earth’s climate past and present and showcase classroom-ready resources for teaching about climate, available from the Howard Hughes Medical Institute. HHMI is one of the nation’s largest philanthropies dedicated to supporting research and science education. The resources HHMI develops are freely available from [www.BioInteractive.org](http://www.BioInteractive.org) and are designed to enhance science education from middle school through graduate school.

**12:30–1:30 PM Special Session**

**Informal Science Day Session: Little Shop of Physics Demo and Open House (Phys)**

*(Informal Education) Ballroom B, Convention Center*

**Cherie Bornhorst**, Thompson School District R2-J, Loveland, Colo.

**Adam Pearlstein**, Denver Jewish Day School, Denver, Colo.

**Sheila Ferguson**, Little Shop of Physics, Colorado State University, Fort Collins

Join Little Shop of Physics as we take you on a journey of our favorite kid-friendly physics demos! Along the way we'll share the stories that highlight and have molded Little Shop's hands-on approach to science education during our 22-year history. There will be something for everyone—preschool to postdoctorate. Come join us for this fun-filled hour!



**12:30–1:30 PM Presentations**

**SESSION 1**

**NASA: Teaching from Space (Gen)**

*(General) 001A, Convention Center*

**Cindy McArthur**, NASA Johnson Space Center, Houston, Tex.

Find out how to get involved in real NASA missions and research, gain access to experts, and use equipment to take learning to a new level.

**SESSION 2**

**Using Online Resources to Teach About Climate Change (Earth)**

*(Informal Education) 003A, Convention Center*

**Dave Randle** ([drandle@amnh.org](mailto:drandle@amnh.org)), American Museum of Natural History, New York, N.Y.

Climate literacy is a critical need. Explore free online resources for teaching about how the climate system works and how it is changing.

**SESSION 3**

**Adding a Bit of Technology to a NASA Education Project (Gen)**

*(General) 101A, Convention Center*

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

The International Society for Technology in Education (ISTE) and NASA have joined forces to share one of NASA's newest missions with educators from around the world. Come see the tools used to collaborate. Web 2.0 at its best!

**SESSION 4**

**STEM Inquiry and Problem-Based Learning (PBL) (Gen)**

*(Elementary) 101B, Convention Center*

**Allison Silvaggio** ([allison.m.silvaggio@adams12.org](mailto:allison.m.silvaggio@adams12.org)) and **Jenny M. Tennant** ([jeannine.m.tennant@adams12.org](mailto:jeannine.m.tennant@adams12.org)), STEM Magnet Lab School, Northglenn, Colo.

Authentic inquiry promotes STEM students in PBL settings. See developed, unique, and innovative solutions and hear about authentic experiences with scientists, researchers, experts, and high-tech presentations.

**SESSION 5**

**The Best in Literature—How We Chose It/How We Use It (Gen)**

*(Elementary) 213A, Convention Center*

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

Each year, the Children's Book Council and NSTA choose the best in children's literature. Come find out how they are chosen and get concrete reproducible examples of how to use them in the classroom.

**SESSION 6****F.I.N. (Family Inquiry Night): An Integrated Science, Math, and Literacy Event (Gen)***(Elementary–Middle Level)* 216B, Convention Center**Vicki L. Ardisana** (*vicki.ardisana@nau.edu*) and **Susan L. Stutler** (*susan.stutler@nau.edu*), Northern Arizona University, Yuma

Presider: Susan L. Stutler

Hear how fourth-graders designed and implemented Family Inquiry Night. Students and guests of all ages explored, questioned, and considered the “Big Ideas of Science and Math.”

**SESSION 7****Next Generation Energy Literacy Standards (Gen)***(General)* Bonham C, Grand Hyatt**DaNel L. Hogan**, Einstein Fellow, U.S. Dept. of Energy, Washington, D.C.

Discussion centers on “Energy Literacy: Essential Principles and Fundamental Concepts for Energy Education” with emphasis on connections to the Next Generation Science Standards.

**SESSION 8****Meeting the Needs of Diverse Learners: The Next Generation’s Discourse on Gender and Multiculturalism (Gen)***(General)* Crockett A, Grand Hyatt

**Christina N. Dragon** (*christina.dragon@gmail.com*), Johns Hopkins Bloomberg School of Public Health, Baltimore, Md. Join me as I continue to subvert the one-size-fits-all image of science in the 21st-century classroom through discussions on gender, hermaphrodites, and multiculturalism.

**SESSION 9****Using Probeware for Data Acquisition and Analysis (Gen)***(Middle Level–College)* Crockett B, Grand Hyatt**Gordon L. Wells** (*gordon.wells@ovu.edu*), Ohio Valley University, Vienna, W.Va.

Join me as I demonstrate how to use probes connected to Texas Instruments calculators and to computers in order to collect and analyze data in biology, chemistry, physical science, physics, ecology, anatomy, and physiology. Equipment, procedures, and student results will be shared.

**SESSION 10****Preservice Teachers, Prepare for Inquiry! (Gen)***(General)* Crockett C, Grand Hyatt**Denise King** (*daking@eriesd.org*) and **Cheryl Dix** (*cdix@eriesd.org*), School District of the City of Erie, Pa.

What do preservice teachers need to prepare for the inquiry-based classroom? Examine a program to enhance student teacher efficacy in inquiry-based classroom practice.

**SESSION 11****Developing Performance Assessments Aligned with Standards (Gen)***(General)* Crockett D, Grand Hyatt**Marsha Bednarski** (*bednarskim@ccsu.edu*), Central Connecticut State University, New Britain

Evaluate student learning by developing performance tasks and rubrics whereby students apply their understanding of standards in new situations. Included will be samples of performance tasks and rubrics.

**SESSION 12****The Shell Science Teaching Award: Fueling Success with Students (Gen)***(Elementary–High School)* Mission A, Grand Hyatt**Greer Harvell**, Clifford C. Meigs Middle School, Shalimar, Fla.

Share your passion and practice by applying for this \$10,000 award. Learn from Shell awardees, finalists, and judging panel members. Door prizes—\$50 Shell gasoline cards!

**SESSION 13****NMLSTA Session: Enhancing Scientific Literacy: A Helping Hand by Using Humor (Gen)***(General)* Mission B, Grand Hyatt**Susan Clay** (*suzieclay@aol.com*), Science Consultant, Parma, Ohio

Learn strategies for improving student interest and engagement by using humor in your science lessons and activities. I’ll share numerous examples and references.

**SESSION 14**

**Enhancing Formal Assessment Through Ubiquitous Presenter and Process-Oriented Guided Inquiry Learning (POGIL) (Chem)**

*(High School–College/Supervision) Republic A, Grand Hyatt Ozcan Gulacar and Gail Dickinson (dickinson@txstate.edu), Texas State University–San Marcos*

Ubiquitous Presenter will be introduced as a teaching and research tool. We will use guided inquiry chemistry activities to model how this software encourages active learning and provides insight for assessment.

**SESSION 15**

**An In-Country Ecotour—A “Pumped-Up Field Trip” or an Indicator of Behavioral Change? (Bio)**

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

**Jody L. Vogelzang (jovord@verizon.net), Grand Valley State University, Allendale, Mich.**

Removing learning from the classroom and transferring it to the rain forests and beaches of Central America sets the stage for unprecedented inquiry.

**SESSION 16**

**Teacher Researcher Day Session: A Prekindergarten Teacher Examines Students’ Understanding of Science Content (Gen)**

*(Preschool–Elementary) Texas Blrm. A/B, Group 1, Grand Hyatt*

**Diana L. McMillan, The University of Texas at Austin and Austin (Tex.) ISD**

BLOCKS stands for building Base Line Knowledge and Skills for Science. Come learn about teacher researchers who participated in a BLOCKS research grant and collected a variety of assessment evidence while using inquiry-based instruction to help students build a solid scientific foundation.

**SESSION 17**

**Teacher Researcher Day Session: Developing Pre-service Teacher Knowledge Under the Umbrella of Education for Sustainability (Gen)**

*(General) Texas Ballroom A/B, Group 4, Grand Hyatt*

**Michael Jabot, SUNY Fredonia, N.Y.**

Join me as I share the preliminary results of a site-based teacher preparation program centered around a schoolwide endeavor to implement NGSS under the umbrella idea of Education for Sustainability (EfS) at the elementary level.

**SESSION 18**

**Teacher Researcher Day Session: Google Earth, ImageJ, and GIS: Tools to Investigate and Communicate About Environmental Change (Env)**

*(Middle Level–High School) Texas Blrm. A/B, Group 5, Grand Hyatt*

**Susan Kelly, NASA Education, Bridgewater, Conn.**

**Bhavna Rawal (bhavnarawal@hotmail.com), Quest High School, Houston, Tex.**

Walk away with free and open-source software that can support your students’ ability to measure environmental change. Samples of student investigations will be provided.

**SESSION 19**

**NSELA Session: Publishing in the Science Educator, the Journal of NSELA (Gen)**

*(General) Travis A, Grand Hyatt*

**Brenda Wojnowski (brenda@waieducation.com), WAI Education Solutions, Dallas, Tex.**

**David Wojnowski (wojnowskidavid@gmail.com), University of North Texas, Denton**

Learn about publishing in the *Science Educator* journal of the National Science Education Leadership Association. Meet the editor, see examples of accepted articles, and get your questions answered.

**SESSION 20**

**Using Interactive Science Notebooks in the Middle School Classroom (Gen)**

*(Middle Level) Travis B, Grand Hyatt*

**Katherine L. Bryant (kbryant@effingham.k12.ga.us), South Effingham Middle School, Guyton, Ga.**

Interactive science notebooks are fun, motivating, and effective research-based tools that increase student mastery of content. Join me as I model their implementation through student samples.

**SESSION 21**

**Survivor Science (Gen)**

*(Elementary–High School) Conf. Room 11, Marriott Rivercenter*

**Meshelle M. Smith, Woodland Hills Elementary School, Kingwood, Tex.**

Capture your students’ attention through missions, challenges, and voting off the island! Adapt Survivor Science to your own curriculum and use it to review, build mastery, and engage in the process of learning!

**SESSION 22****Making It “Click”: Using Student-Response Systems in the Science Classroom (Gen)***(High School)**Salon D, Marriott Rivercenter***Jessica Toth** and **Jennifer M. Miller** (*jmill1030@gmail.com*) and Robbinsville High School, Robbinsville, N.J.

Experience student-response systems and discuss how they can be used to guide teaching practices and evaluate student comprehension.

**SESSION 23****Making Connections with Comparative Activities (Gen)***(General)**Salon K, Marriott Rivercenter***Brandon R. Emig** (*bremig@ncsu.edu*), North Carolina State University, Raleigh

Emphasis will be placed on the many ways comparative activities can provide the context to make important concepts and ideas noticeable and relevant to students.

**SESSION 24****Woodrow Wilson Fellows—Shaping Teaching Practice Through Field-based Action Research (Gen)***(Middle Level–High School)**Salon L, Marriott Rivercenter***Gary Holliday** (*gholliday@uakron.edu*), **Nidaa Makki**, and **Karen Plaster** (*kbp9@uakron.edu*), The University of Akron, Ohio

Join us as The University of Akron’s Woodrow Wilson Fellows share action research projects conducted during their first year of teaching and discuss the impact on teaching practice.

**SESSION 25****Building Up the Skills for Stoichiometry from Day One (Chem)***(High School)**Alamo Salon B, Marriott Riverwalk***Denise E. Sanders** (*denise.sanders@austinisd.org*) and **Hope C. Lozano** (*hope.lozano@austinisd.org*), Bowie High School, Austin, Tex.

Use conversions in every unit to build up the skills for stoichiometry and thermochemistry. On-level and pre-AP differentiation and specific teaching techniques will be shared.

**SESSION 26****Powerful and Free Simulations for Biology Teaching (Bio)***(General)**Alamo Salon E, Marriott Riverwalk***Chad W. Dorsey** (*cdorsey@concord.org*), The Concord Consortium, Concord, Mass.

Come discover how free NSF-funded molecular and genetics simulations and curricula from The Concord Consortium



can add a new dimension to your biology teaching. Take home a free software CD and resources. Bring laptops, if you have them.

**SESSION 27****Science and Engineering: What’s the Difference and Why Should We Care? (Bio)***(High School)**Alamo Salon F, Marriott Riverwalk***Debra Brockway** (*debra.brockway@stevens.edu*), Stevens Institute for Technology, Hoboken, N.J.**Rodney L. Custer** (*rod.custer@bhsu.edu*), Black Hills State University, Spearfish, S.Dak.**Jenny Daugherty** (*jdaughe@purdue.edu*), Purdue University, West Lafayette, Ind.

The close relationship between science and engineering creates both hurdles and opportunities for teachers. We’ll share an approach to facilitate the infusion of engineering in science.

**SESSION 28****Enhancing Chemistry Activities to Develop Scientific and Engineering Practices (Chem)***(High School)**Travis, Marriott Riverwalk***Angela R. Powers**, Metropolitan State University of Denver, Colo.**Cece Schwensen** (*cschwensen@gmail.com*), Cate School, Carpinteria, Calif.

Discover how modeling and investigations in introductory chemistry can be modified to explicitly address scientific and engineering practices emphasized in the Next Generation Science Standards.

12:30–1:30 PM Workshops

**Rockets—Experimenting with Projectile Flight (Earth)**

(Middle Level–High School) 001B, Convention Center  
**Angelo A. Casaburri**, NASA Johnson Space Center, Houston, Tex.

Propel new learning in your science classroom. Investigate the trajectory relationship between launch angle and range by constructing a rubber band–powered, polyethylene foam pipe insulation rocket.

**Weathering Ways and Just Chalk It Up to Weathering (Earth)**

(Elementary) 002, Convention Center  
**Lynn Carr** ([lcarr@gvtc.com](mailto:lcarr@gvtc.com)), Retired Science Specialist, San Antonio, Tex.

Rocks and minerals found on the surface of Earth are weathered through physical processes, chemical action, and biological weathering. Examples of weathering will be sorted into categories and observation and description of physical and chemical changes in calcite (chalk) will be organized to identify examples of changes in rocks and minerals.

 **Active Engagement of All Students—ELL, Gifted, and Learning Disabled (Gen)**

(Elementary–Middle Level) 201, Convention Center  
**Mary Sue Pruitt** ([mary.pruitt@knoxschools.org](mailto:mary.pruitt@knoxschools.org)), Farragut Middle School, Knoxville, Tenn.

Join me as I present examples of differentiated learning activities from K–8 science content areas. Walk away with ready-made activities. No textbooks required for this active learning.

 **Into the Woods for Environmental Literacy (Env)**

(Elementary) 202A, Convention Center  
**Peter Schmidt** ([peter.schmidt@qc.cuny.edu](mailto:peter.schmidt@qc.cuny.edu)), Queens College, Flushing, N.Y.

Supported by a NOAA Environmental Literacy grant, this project aims to get students out of their classrooms and literally, into the woods. Learn about this project and experience some of our most popular activities.

✓ **Let’s Talk Science: Learning Conversations in Formal and Informal Science Education (Gen)**

(Elementary–Middle Level/Informal) 202B, Convention Center  
**Kelly A. Riedinger** ([riedingerk@uncw.edu](mailto:riedingerk@uncw.edu)) and **Amy R. Taylor**, University of North Carolina, Wilmington

Come explore the role of discussion for learning. We will introduce the importance of learning conversations and then model strategies for facilitating discussions.



**Citizen Science Investigations in the Classroom (Gen)**

(General) 207A, Convention Center

**Laura Whyte** ([laura@zooniverse.org](mailto:laura@zooniverse.org)) and **Kelly A. Borden** ([kelly@zooniverse.org](mailto:kelly@zooniverse.org)), Adler Planetarium, Chicago, Ill.

Explore the Zooniverse, an online suite of citizen science projects, and learn how to bring authentic science experiences into the classroom through Zooniverse-related resources.

**The Outdoor Study Area: An Integrated Learning Activity (Env)**

(Elementary) 208, Convention Center

**Carol Ann Brennan** ([carolb@hawaii.edu](mailto:carolb@hawaii.edu)) and **Brooke R. Davis** ([bdavis@hawaii.edu](mailto:bdavis@hawaii.edu)), University of Hawaii, Honolulu

Learn how to use a small area of the school yard to engage students in discovering seasonal changes to their environment over time.

**Collecting and Analyzing Real Data in the Elementary Science Classroom (Gen)**

(Elementary) 215, Convention Center

**Gregory J. Borman**, The City College of New York, N.Y.

Join us as we examine the use of science notebooks to support data collection and analysis within authentic scientific investigations.

**Inquiry in Action: Investigating Matter Through Inquiry (Chem)**

(Elementary) 216A, Convention Center

**James H. Kessler** ([jhkessler@acs.org](mailto:jhkessler@acs.org)), American Chemical Society, Washington, D.C.

Conduct guided inquiry activities from the free website [inquiryinaction.org](http://inquiryinaction.org). Design experiments to distinguish between similar-looking liquids, view molecular animations, and receive a handout of all activities.

**Discovering with Children (Gen)**

(Elementary) 217D, Convention Center

**Donald DeRosier**, Boston University, Boston, Mass.

Explore strategies that encourage teachers to be lead learners who wonder and think *with* children rather than *for* children.

### Understanding the Revised AP Chemistry Course: Science Practices for AP Chemistry (Chem)

(High School–College) Lone Star Ballroom B, Grand Hyatt  
**Trinna S. McKay**, Dunwoody High School, Dunwoody, Ga.

Join a discussion by members of the AP Chemistry Development Committee on the learning objectives and science practices of the revised AP Chemistry curriculum framework. Instructional, lab, and assessment strategies will be identified, modeled, and discussed. Based on their individual needs and style of teaching, participants will share best practices and strategies for implementing the new course and facilitating student achievement.

### Science Lessons Reloaded: Effective Ways to Integrate STEM in Your Classroom (Gen)

(General) Lone Star Ballroom C, Grand Hyatt  
**Channa Comer** (*channacomer@yahoo.com*), Baychester Middle School, Bronx, N.Y.

**Gina Tesoriero** (*ginatesoriero@gmail.com*), Simon Baruch MS104, New York, N.Y.

In this workshop, engage in a hands-on STEM activity and walk away with a template for deconstructing and modifying existing lessons to fulfill STEM requirements.

### Using Robotic Technology to Support Students Acquiring Language Through Science Inquiry (Phys)

(Elementary/College) Lone Star Ballroom E, Grand Hyatt

**Kate A. Baird** (*kabaird@iupuc.edu*) and **Aija Pocock** (*apocock@iupuc.edu*), Indiana University–Purdue University, Columbus

**Stephanie S. Coy**, Bartholomew Consolidated School Corp., Columbus, Ind.

Join us as we demonstrate how LEGO® Education WeDo™ can be used as an educational platform for students with special needs and English language learners.

### Investigating Climate Change and the Next Generation of Health and Agricultural Problems (Gen)

(General) Presidio A/B, Grand Hyatt

**Karen L. Lindebrekke** (*karen.lindebrekke@ibioinstitute.org*) and **Ann Reed** (*ann.reed@ibioinstitute.org*), iBIO Institute, Chicago, Ill.

County Regional Office of Education #45, Waterloo, Ill. Industry/education partnerships produce authentic Problem-Based Learning experiences that exemplify the highly anticipated Next Generation Science Standards and develop learners' interests and abilities to investigate current STEM-focused problems.

### Using Writing and Neuroscience to Reach the 21st-Century Learner (Gen)

(General) Republic B, Grand Hyatt

**Angela M. Tisdale** (*tisdaleang@fssd.org*), Freedom Intermediate School, Franklin, Tenn.

Walk away equipped with knowledge of the neuroscience behind learning, while gaining valuable writing, technology, and hands-on skills to engage every learner.

### Teacher Researcher Day Session: Thinking Maps®: Tools for Organizing Information in a Diverse Classroom (Gen)

(Elementary–High School) Texas Blrm. A/B, Group 2, Grand Hyatt

**Cherie A. Kircalli** (*cherie.kircalli@loganschools.org*) and **Cassandra Housley** (*cassandra.housley@loganschools.org*), Mount Logan Middle School, Logan, Utah

We are teachers helping teachers actively learn about and create Thinking Maps to suit the needs of a culturally, academically, and socially responsive science classroom.

### Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Analysis of Data (Gen)

(General) Texas Ballroom A/B, Group 3, Grand Hyatt

**Deborah Roberts-Harris**, University of New Mexico, Albuquerque

Want to make sense of your teaching? This roundtable discussion centers on another step as a teacher researcher—analyzing the data you have collected.



### NSTA Press® Session: Using Science Mystery Stories—The Details (Gen)

(Informal Education) Texas Ballroom D, Grand Hyatt

**Richard D. Konicek-Moran** (*konmor@comcast.net*), Professor Emeritus, UMass Amherst, Mass.

**Andrea Allen** (*andrea.allen@knoxschools.org*) and **Theresa Nixon** (*theresa.nixon@knoxschools.org*), Knox County Schools, Knoxville, Tenn.

How will the new frameworks affect the use of mystery stories for classroom inquiry? How can classroom teachers use stories to improve reading and other cross-curricular areas? We'll focus on these questions and offer suggestions on the details of using mystery stories to enhance science practices.

**NASA Brings You Newton's Laws of Motion (Phys)**  
(Middle Level–High School) Salon B, Marriott Rivercenter  
**David P. Beier** ([david.beier@barstowschool.org](mailto:david.beier@barstowschool.org)), The Barstow School, Kansas City, Mo.

Come join a NASA Astrophysics Ambassador in 25 hands-on Newton's laws of motion activities. You will be ready to use these in class next week. Lots of free NASA materials plus access to the website with all of these activities in detail, along with assessment ideas. Plan to be active for this workshop.

**Thinking Like a Scientist: Inquiry-based Activities to Jump-start Critical Thinking (Phys)**  
(Elementary–High School) Salon C, Marriott Rivercenter  
**Laura Rico-Beck** ([laura.rico-beck@msichicago.org](mailto:laura.rico-beck@msichicago.org)), Museum of Science and Industry, Chicago, Ill.

Practice your critical-thinking skills in an inquiry-based hands-on classroom! Join me as we explore buoyancy, density, and convection in a student-driven collaborative learning environment.

**Polymer Activities for High School Chemistry Teachers (Chem)**  
(High School) Alamo Salon A, Marriott Riverwalk  
**Jon E. Valasek** ([valasekj@smtexas.org](mailto:valasekj@smtexas.org)), St. Mark's School of Texas, Dallas

Engage in a series of hands-on activities using polymers to teach chemistry concepts. Materials and handouts will be available for each teacher attending the presentation.



**Incorporating the Claim, Evidence, and Reasoning Framework into an Engaging Computer Game and Project-based Science Curriculum Unit (Bio)**  
(Middle Level–College) Alamo Salon C, Marriott Riverwalk  
**Chandana Jasti, Barbara Hug** ([bhug@illinois.edu](mailto:bhug@illinois.edu)), **Hillary Lauren** ([lauren1@illinois.edu](mailto:lauren1@illinois.edu)), and **James Planey**, University of Illinois at Urbana-Champaign, Champaign  
Engage high school students through an interactive computer game that uses a claim, evidence, and reasoning assessment framework and traumatic brain injury as context.

**Of Sperm and Saliva...Using Forensic Enzymology to Teach Biology and Forensics! (Bio)**  
(Middle Level–High School) Alamo Salon D, Marriott Riverwalk  
**Tamica A. Stubbs** ([tamica.stubbs@cms.k12.nc.us](mailto:tamica.stubbs@cms.k12.nc.us)), Phillip O Berry Academy of Technology High School, Charlotte, N.C.  
This workshop will explore the new field of Forensic Enzymology to provide an exciting twist on learning the basics of enzyme structure and function!

### 12:30–1:30 PM Exhibitor Workshop

**ClimateChangeLIVE! Webcasts and Education Resources to Bring Climate Change Education to Your Classroom (Env)**  
(Grades 6–12) 214A, Convention Center  
Sponsor: U.S. Forest Service  
**Victoria Arthur** ([varthur@fs.fed.us](mailto:varthur@fs.fed.us)), U.S. Forest Service, Washington, D.C.

Learn about a new, exciting distance learning project spearheaded by the U.S. Forest Service. ClimateChangeLIVE features interactive webcasts, webinars, and free online educational resources. Integrating Facebook and Twitter with a dynamic website, ClimateChangeLIVE offers students and teachers the opportunity to effect the discussion, and take action on climate change.

### 12:30–4:30 PM Short Course

**Family Science 101 (SC-17)**  
(Elementary–Middle Level/Informal) La Condesa, Hilton  
**Tickets Required: \$39**  
**Jacob Noel-Storr** ([jake@cis.rit.edu](mailto:jake@cis.rit.edu)), **Greg Wyllie, Alex Triassi, and Colby Carll**, Rochester Institute of Technology Insight, Rochester, N.Y.  
For description, see Volume 1, page 63.

# 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

## 1:30–2:00 PM Presentations

### SESSION 1

#### Teacher Researcher Day Session: A Study on Students' Retrieval of Concepts Stored in Long-Term Memory (Gen)

(Middle Level–High School) Texas Blrm. A/B, Group 2, Grand Hyatt  
**Yajaira B. Fuentes-Tauber** ([yfuentes-tauber@hotmail.com](mailto:yfuentes-tauber@hotmail.com)),  
Brownsville High School, Brownsville, Tex.

Presider: Ryan Tauber, Rivera High School, Brownsville, Tex.

Discover ways to promote long-term memory of concepts through connections to prior knowledge, visual imagery, organization, use of technology, and development of experiences in science class.

### SESSION 2

#### Teacher Researcher Day Session: Fostering Teacher Researcher Collaborations (Gen)

(General) Texas Ballroom A/B, Group 4, Grand Hyatt  
**Deborah Roberts-Harris** ([drober02@unm.edu](mailto:drober02@unm.edu)), University  
of New Mexico, Albuquerque

**Emily H. van Zee** ([emily.vanzee@science.oregonstate.edu](mailto:emily.vanzee@science.oregonstate.edu)),  
Oregon State University, Corvallis

What can teacher researchers do to foster their own and others' inquiries into science learning and teaching? Join us in reflecting on ways to collaborate!



## 1:30–3:00 PM Science Seminar

### High-Speed Large Area Production of Nanofibers (Gen)

(General)

Grand Ballroom C2, Convention Center



**Karen Lozano** ([lozanok@utpa.edu](mailto:lozanok@utpa.edu)),  
Julia Beecherl Endowed Chair, Pro-  
fessor, and Director of Nanotech-  
nology Center, The University of  
Texas–Pan American™, Edinburg

Presider: Susana Ramirez, Program  
Coordinator, NSTA San Antonio  
National Conference, and Pharr-  
San Juan-Alamo ISD, Pharr, Tex.

Join Dr. Lozano as she shares her research conducted in the area of nano-reinforced polymer systems with a special focus on the production of polymeric, ceramic, and metallic nanofibers at the industrial scale. Nanofibers are 1/100th the size of a human hair and can have myriad uses from water filtration to wound care. In 2009, Dr. Karen Lozano along with Dr. Kamal Sarkar co-invented ForceSpinning Technology™, which enables the mass production of nanofibers by using centrifugal force. ForceSpinning Technology™ was named one of eight Innovations That Could Change The Way You Manufacture by the Society of Mechanical Engineers. Dr. Lozano will discuss her continued research in nanofibers as well as practical applications.

*Dr. Lozano is a pioneer in the field of nanotechnology, earning the Most Promising Scientist Award in 2002 from HENAAC, which honors the nation's best and brightest Hispanic STEM professionals. While serving as an endowed professor of mechanical engineering at The University of Texas–Pan American, she has been an inventor of 21 patent/patent applications, including her co-invention of ForceSpinning Technology™, a more efficient way to create nanofibers. Commercialization of her invention led to the creation of FibeRio Technology Corporation, where she is now acting as Chief Technology Officer. In 2001, Dr. Lozano received the NSF CAREER award.*

*Karen enjoys instilling in K–12 students a passion for engineering careers and conducts numerous presentations at schools as well as mentors young students in eCYBERMISSION and ExploraVision competitions, in which her teams have won top national places.*

*Her formal education includes her BS degree from Universidad de Monterrey and her MS degree and PhD from Rice University. When she earned her doctorate in 1999, she was the first woman from Mexico to earn a PhD in mechanical engineering from Rice University.*

Speaker is sponsored by Shell.

**1:30–3:00 PM Science Seminar****Children Who Cry at Night...Fail Math in the Morning (Gen)***(General)**Grand Ballroom C3, Convention Center*

**O'dell Moreno Owens**, President, Cincinnati State Technical and Community College, Cincinnati, Ohio

Presider: Fernando Ruiz, Strand Leader, NSTA San Antonio National Conference, and Edgewood ISD, San Antonio, Tex.

This talk will focus on the social aspect of children who fail science, as well as school. Join O'dell as he shares possible solutions.

*In 2010, Dr. O'dell Owens was selected by the board of trustees of Cincinnati State Technical and Community College to be their next president.*

*A native of Cincinnati, Dr. Owens attended Yale University, where he earned his M.D., a master's in public health, and completed a residency in Obstetrics and Gynecology. He also served at Harvard Medical School as clinical instructor and completed a fellowship in Reproductive Endocrinology. Upon returning to Cincinnati, he established an in vitro fertilization program and achieved Cincinnati's first successful conception and delivery, and first pregnancy, from a frozen embryo.*

*His many awards include being named one of Black Enterprise Magazine's Top 15 Black Doctors in America and receiving the Tree of Life Award by the Jewish National Fund. In 2004, Dr. Owens was elected Hamilton County Coroner and reelected in 2008.*

*He is the former president and Chief Executive Officer of RISE Learning Solutions, Inc., a national nonprofit organization that uses technology to bring world-class training to adults who care for preschool-aged children.*

*Dr. Owens continues to be actively involved with disadvantaged youth to motivate them to reach their full potential.*

**1:30–3:00 PM Exhibitor Workshop****NOAA's Climate Stewards Education Project (CSEP) Part I: Affecting Change Through Education, Collaboration, and Action (Earth)***(Grades 6–12)**214A, Convention Center*

Sponsor: NOAA

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

CSEP promotes experiential education to enhance connections between human actions and effects on Earth systems. Through sustained professional development and collaborative online tools, CSEP supports more than 200 educators to build a climate-literate public engaged in climate stewardship. Hear how this national community is working to reduce carbon footprints and “go green.”

**1:30–4:30 PM Short Course****Building Sound Technology into Your Science Curriculum (SC-18)***(Middle Level–High School)**La Corona, Hilton***Tickets Required: \$67**

**Christopher Knowlton** ([cknowlton@uri.edu](mailto:cknowlton@uri.edu)), **Holly Morin** ([holly\\_morin@mail.uri.edu](mailto:holly_morin@mail.uri.edu)), and **Gail Scowcroft** ([gailsco@gso.uri.edu](mailto:gailsco@gso.uri.edu)), University of Rhode Island, Narragansett

**Kathleen Vigness-Raposa** ([kathleen.vigness@marineacoustics.com](mailto:kathleen.vigness@marineacoustics.com)), Marine Acoustics, Inc., Middletown, R.I.

For description, see Volume 1, page 63.

**2:00–2:30 PM Presentation****SESSION 1****Using Birds to Teach About Science (Env)***(Middle Level–High School)**Bonham C, Grand Hyatt*

**James Naum-Bedigian**, Marist School, Atlanta, Ga.

I will show and discuss the online resources employed in my ornithology class to teach bird identification as well as environmental issues.

## 2:00–3:00 PM NSTA/ASE Honors Exchange Special Session

**Show Me What You Learned Today** (Gen)  
(General) Lone Star Ballroom F, Grand Hyatt



**Liz Lawrence** ([lizlawrence10@btinternet.com](mailto:lizlawrence10@btinternet.com)), Chair, The Association for Science Education: Hatfield, Hertfordshire, U.K.

Presider: Annette Smith, CEO, The Association for Science Education, Hatfield, Herts, U.K.

How can we make the most of opportunities to develop and apply children's capabilities in English, mathematics, technology, and engineering in science lessons? This session will explore strategies for building these links through a creative approach to recording the outcomes of inquiries. Through focusing on a wider range of possible student outcomes, teachers will gain a clearer understanding of what children have learned and what their next steps are.

*Liz Lawrence (CSciTeach) is the Chair of The Association for Science Education. A former primary school teacher and senior leader, she now works as an Advisory Teacher providing training, guidance, and resources for primary science and technology teachers in London. She also presents regularly at local, national, and international conferences and is known as a passionate advocate of inquiry-based, practical science education.*

*Liz has experience in curriculum development at a national level; she was one of the authors of the 2010 National Curriculum that sought to make closer links between science and design and technology. Liz has advised on the ongoing development of the latest primary curriculum for England. She is also interested in assessment, being involved in both national test development and promoting assessment for learning. Liz was a member of the working group for the recent Nuffield Foundation report Developing Policy, Principles, and Practice in Primary Science Assessment, which makes recommendations about how science should be assessed in the new curriculum.*

*Liz has contributed to ASE and Open University publications on topics as diverse as subject leadership (in the ASE Guide to Primary Science Education), science inquiry (It's Not Fair—Or Is It?), health and safety (Be Safe!), and building links between science and design and technology (Enhancing Primary Science: Developing Effective Cross-curricular Teaching).*

Speaker sponsored by The Association for Science Education.

## 2:00–3:00 PM Presentations

### SESSION 1

**Using Kites to Collect Atmospheric Data and Do Remote Sensing** (Earth)

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

**David F. Bydlowski** ([davidbydlowski@me.com](mailto:davidbydlowski@me.com)), Wayne RESA, Wayne, Mich.

Use kites and AEROKATS Aeropods to engage students in collecting atmospheric data and doing remote sensing. Plus, your students will have a blast flying REALLY BIG KITES!

### SESSION 2

**Crazy for Science—The Musical!** (Gen)

(Preschool—Elementary) 101B, Convention Center

**Karen R. Thompson** and **Randi L. Kerby**, Garland (Tex.) ISD

Sing, dance, and act your way through the basics and your students can become marvelous scientists! This session is geared to preK–2.

### SESSION 3

✓ **Student-designed Experiments: A Strategy That Works for Them and You!** (Gen)

(Middle Level) 202B, Convention Center

**Lynn Lauterbach** ([lynnlauterbach@gmail.com](mailto:lynnlauterbach@gmail.com)), Loveland, Colo.

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

Using simple supplies of Post-it® Notes and a graphic organizer, learn how to guide your students in the experimental design process. Assessment of student understanding becomes easier with this method. Handouts and free online support!

### SESSION 4

**Students Choosing to Make a Difference! Producing Service Learning Projects That Engage, Inspire, and Impact Students and Their Society** (Gen)

(Elementary—Middle Level) 215, Convention Center

**Angela M.D. Nelson** ([amnelson@gmail.com](mailto:amnelson@gmail.com)), Duke School, Durham, N.C.

Service Learning Projects solve real-life problems by fostering collaboration with the community. Discover how to produce a project incorporating science objectives with community enhancement.

## SESSION 5

**Bridge the Gap—Lab to Test (Gen)**

(Elementary–Middle Level) 216B, Convention Center  
**Theresa Tefertiller**, Independent Consultant, Lubbock, Tex.

**Sandra White** (*snannyw@aol.com*), Independent Education Consultant, Lubbock, Tex.

Your students understand concepts in the lab, but don't test well. Is vocabulary the problem? Encounter easy strategies and games that make science vocabulary stick!

## SESSION 6

**Establishing a STEM-focused School (Gen)**

(General) Crockett A, Grand Hyatt  
**Olivia Rice** (*onix@rti.org*), RTI International, Research Triangle Park, N.C.

One solution to growing a 21st-century workforce is to create STEM-focused schools. Join me for “lessons learned” as we navigate through the process.

## SESSION 7

**Innovative Technology in Science Inquiry (Gen)**

(Elementary–High School) Crockett B, Grand Hyatt  
**Carolyn J. Staudt** (*carolyn@concord.org*), The Concord Consortium, Concord, Mass.

Using a simple web-based authoring portal, participants customize elementary, middle school, and secondary classroom activities using probes and open-source models.

## SESSION 8

**Teachers in the Scientific Research Laboratory (Gen)**

(General) Crockett C, Grand Hyatt  
**Elizabeth A. McMillan** (*elizabeth.mcmillan@sanfordhealth.org*), Sanford Research/University of South Dakota, Sioux Falls

**Mike Amolins**, Harrisburg (S.Dak.) School District  
 Presider: Mike Amolins

Hear about the successes, learning, and future goals of a fellowship that allows teachers to work with a principal investigator to design and investigate a biomedical research project.

## SESSION 9

**Assessing Technological Analysis Within Standardized Exams (Gen)**

(General) Crockett D, Grand Hyatt  
**Alain Couture**, Ministère de l'Éducation, du Loisir et du Sport, Montreal, Que., Canada

Hear how the province of Quebec has adapted the structure of uniform (standardized) exams to include an authentic technological analysis.

## SESSION 10

**Sunscope (Earth)**

(High School–College/Inf.) Lone Star Blrm. B, Grand Hyatt  
**Tyler J. Morales** (*tmorales@scienceleadership.org*), **Matt VanKouwenberg** (*mvankouwenberg@scienceleadership.org*), **Allen Yang** (*ayang@scienceleadership.org*), and **William Johnson** (*wjohnson@scienceleadership.org*), Science Leadership Academy, Philadelphia, Pa.

**Derrick H. Pitts** (*dpitts@fi.edu*), The Franklin Institute, Philadelphia, Pa.

Learn how to take pictures of the Sun using modern technology and then upload the images straight to your own website. This student-driven project needs little adult help.

## SESSION 11

**What We Wish We Knew (Gen)**

(Middle Level–High School) Lone Star Ballroom E, Grand Hyatt  
**Jennifer L. Damti** (*damtij@parkhill.k12.mo.us*) and **Ellen A. Reys** (*reyse@parkhill.k12.mo.us*), Park Hill High School, Kansas City, Mo.

Join us as we share tricks for navigating your first years as a science teacher, including specific science and life lessons we learned during our first years of teaching.

## SESSION 12

**Join an NSTA Journal Manuscript Review Panel (Gen)**

(General) Mission A, Grand Hyatt  
**Ken Roberts**, Assistant Executive Director, Journals, NSTA, Arlington, Va.

Journal editors will discuss NSTA's online manuscript submission and review system, Manuscript Central, and encourage members to share their expertise by volunteering to serve on a journal review panel.

SESSION 13

**Inspiring Students with NASA's Instructional Programs (Phys)**

(Middle Level) *Mission B, Grand Hyatt*

**Diane L. McElwain** (*diane.l.mcelwain@nasa.gov*), NASA Glenn Research Center, Cleveland, Ohio

NASA's educational specialists will demonstrate NASA's instructional programs, including Problem-Based Instructional Units for Physical Science (PBIU) and NASA's BEST (Beginning Engineering, Science, and Technology) Students.

SESSION 14

**Accelerating Teacher Practice: Collaborative Analysis of Student Understanding Drives PD for Standards-based Teaching (Gen)**

(High School/Supervision) *Republic A, Grand Hyatt*

**Miranda Messer** (*miranda.messer@jefferson.kyschools.us*), Ballard High School, Louisville, Ky.

**Elizabeth W. Edmondson** (*ewedmondson@vcu.edu*), Virginia Commonwealth University, Richmond

**Scott Schneider** (*scott.schneider@jefferson.kyschools.us*), Fairdale High School, Fairdale, Ky.

**Tracy Ising**, Seneca High School, Louisville, Ky.

Presider: Lee Ann Nickerson (*lee.nickerson@jefferson.kyschools.us*), Gheens Academy, Louisville, Ky.

Join us as districtwide resource teachers share Professional Learning Community (PLC) facilitation experiences, strategies to analyze student work, and tools for collegial classroom observation and feedback.

SESSION 15

**Inspiring STEM Elementary Teachers (Gen)**

(Elementary/College) *Sequin A, Grand Hyatt*

**Natasha Yates** (*nlyates@stkate.edu*), St. Catherine University, St. Paul, Minn.

Hear about an environmental biology course—in a STEM certificate for elementary educators—that integrates biology, chemistry, technology, and mathematics as well as modeling best practices from research and NSTA preparation standards.

SESSION 16

**Teacher Researcher Day Session: Implementing a Mentoring and Professional Growth Program for Science Student Teachers (Gen)**

(General) *Texas Ballroom A/B, Group 1, Grand Hyatt*

**Jeff D. Thomas** (*thomasjed@ccsu.edu*), Central Connecticut State University, New Britain

This action research study assesses science student teachers' attitudes and practice of a new mentoring and professional growth program.

SESSION 17

**Teacher Researcher Day Session: Action Research: Studying Unique Ways to Engage Students in STEM (Phys)**

(Elementary–Middle Level) *Texas Blrm. A/B, Group 3, Grand Hyatt*

**Gidget Watson** (*gwatsonwcs@gmail.com*), Wichita Collegiate School, Wichita, Kans.

**Nicole Spain** (*nicolegspain@hotmail.com*), Hamilton Elementary School, Sanford, Fla.

**Tami McDonald**, Longfellow Elementary School, Salida, Colo.

Presider: Amanda M. Gunning (*amgunning@optonline.net*), Mercy College, Dobbs Ferry, N.Y.

Join us as we share our findings and methods for increasing student engagement through space simulations, a web-based unit, and an engineering lunch club.

SESSION 18

**Teacher Researcher Day Session: Focusing the Field Trip (Gen)**

(Elementary–Middle Level) *Texas Blrm. A/B, Group 4, Grand Hyatt*

**Joy Reeves**, Claremont Academy, Chicago, Ill.

Find out how teachers can use the self-exploration discovery encouraged by informal learning institutions while justifying the time and expense by demonstrating learning.

SESSION 19 (two presentations)

(General) *Texas Ballroom A/B, Group 5, Grand Hyatt*

**Teacher Researcher Day Session: Integrating Mathematics, Science, and Technology in an Online Master's Program for Practicing Teachers (Gen)**

**Emily H. van Zee** (*emily.vanzee@science.oregonstate.edu*) and **Alyssa Howell** (*howelaly@onid.orst.edu*), Oregon State University, Corvallis

Join us and hear from teachers who designed and facilitated professional development experiences to engage colleagues in their schools and/or districts in using various technologies to enhance mathematics and science learning.

**Teacher Researcher Day Session: Engaging Prospective Elementary Teachers in Learning How to Integrate Science and Literacy (Phys)**

**Emily H. van Zee** (*emily.vanzee@science.oregonstate.edu*), Oregon State University, Corvallis

Let me introduce you to a physics course that models ways to engage students in learning to speak clearly, listen closely, write coherently, read with comprehension, as well as critique and create media.

**SESSION 20**

**NSELA Session: Formative Assessment Strategies for Successful Science Instruction and Learning Starting in Prekindergarten (Gen)**

*(Preschool–Elementary)* Travis A, Grand Hyatt  
**Eunyoung Lee** (*eunyounglee@my.unt.edu*) and **David Wojnowski** (*wojnowskidavid@gmail.com*), University of North Texas, Denton

Early childhood and elementary science teachers learn how to design effective formative assessments and align their curricula, goals, and the National Science Education Standards, to enhance their teaching practice and students’ learning in science.

**SESSION 21**

**Writing Scientific Arguments, Teaching Science Practices, and Developing Nonfiction Writers (Gen)**

*(Middle Level)* Travis B, Grand Hyatt  
**Hudson Roditi** (*hroditi@amnh.org*), American Museum of Natural History, New York, N.Y.

Encounter strategies for helping students develop the practice of writing scientific “arguments” based on evidence.

**SESSION 22**

**The Future of Education: Experiences from the Flipped Classroom (Gen)**

*(General)* Conference Room 11, Marriott Rivercenter  
**Robert A. White** (*rwhite@bbchs.org*) and **Bill L. Sadler** (*bsadler@bbchs.org*), Bradley-Bourbonnais Community High School, Bradley, Ill.

Join us for a lesson in flipping your classroom. We will show tools of the trade and share revelations that come from best practices in a flipped classroom.



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**SESSION 23**

**Get Moving! The Biology and Earth/Space Science Edition (Gen)**

(Elementary–High School) Salon J, Marriott Rivercenter

**Brian J. Ciuffreda** ([bciuffreda@princetoncharter.org](mailto:bciuffreda@princetoncharter.org)) and **Mark F. Schlawin**, Princeton Charter School, Princeton, N.J.

Propel new learning in your science classroom. Discover some biology and Earth/space science, standards-based physical activities, and “kinesthetic clue” mnemonic devices used at one of New Jersey’s top-performing middle schools.

**SESSION 24**

**Tips for Publishing Your Ideas in Professional Journals (Gen)**

(Middle Level–College) Salon K, Marriott Rivercenter

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

If you would like to publish your science ideas, join me as I share my own experience and give advice to help you achieve that goal.

**SESSION 25**

**STEM and the Next Generation Science Standards (Gen)**

(Middle Level–High School) Salon L, Marriott Rivercenter

**Louise Chapman** ([lchapman@volusia.k12.fl.us](mailto:lchapman@volusia.k12.fl.us)), Volusia County Schools, Deland, Fla.

**David A. Young** ([dayoung7@gmail.com](mailto:dayoung7@gmail.com)), Fayetteville High School, Fayetteville, Ark.

Come see and discuss how technology can help us implement NGSS and STEM. Receive funding tips and four ready-to-use STEM investigations.

**SESSION 26**

**Bring the Magic of Space to Your Classroom! (Gen)**

(Middle Level–High School) Salon M, Marriott Rivercenter

**Diane Matthews** ([dmatthews@iss-casis.org](mailto:dmatthews@iss-casis.org)) and **Debbie Biggs** ([dbiggs@iss-casis.org](mailto:dbiggs@iss-casis.org)), Center for the Advancement of Science in Space, Rockledge, Fla.

**Jonathan Neubauer** ([jneubauer@iss-casis.org](mailto:jneubauer@iss-casis.org)), Center for the Advancement of Science in Space, Space Life Sciences Laboratory, Exploration Park, Fla.

Learn how your students can conduct experiments on the International Space Station. Find out about ground-based and other STEM activities that engage students in real-world activities. We’ll discuss how to best use and integrate this newest resource in the classroom.



**SESSION 27**

**Powerful and Free Molecular Simulations for Chemistry Teaching (Chem)**

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

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

Come discover how free NSF-funded molecular simulations and curricula from The Concord Consortium can add a new dimension to your chemistry teaching. Take home a free software CD and resources. Bring laptops, if you have them.

**SESSION 28**

**Infusing Engineering as a Practice and as Context (Bio)**

(High School/Supervision) Alamo Salon F, Marriott Riverwalk

**Debra Brockway** ([debra.brockway@stevens.edu](mailto:debra.brockway@stevens.edu)), Stevens Institute for Technology, Hoboken, N.J.

**Rodney L. Custer** ([rod.custer@bhsu.edu](mailto:rod.custer@bhsu.edu)), Black Hills State University, Spearfish, S.Dak.

**Jenny Daugherty** ([jldaughe@purdue.edu](mailto:jldaughe@purdue.edu)), Purdue University, West Lafayette, Ind.

Join us for an exploration of the epistemological groundings of science and engineering as well as an approach for introducing these practices in tandem in the science classroom.

**SESSION 29**

**Engaging Students in Chemistry Outside the Classroom: A Look at ChemClub (Chem)**

(High School/Supervision) Travis, Marriott Riverwalk

**Michael T. Mury** and **Karen M. Kaleuati** ([hschemclubs@acs.org](mailto:hschemclubs@acs.org)), American Chemical Society, Washington, D.C.

**Roxana Allen** ([rkallen@yahoo.com](mailto:rkallen@yahoo.com)), St. John’s School, Houston, Tex.

Chemistry students are provided enrichment through various activities in ChemClub. Join club leaders to learn about this free, exciting program.

**2:00–3:00 PM Workshops****An Active Sun: Solar Flares and Coronal Mass Ejections (Earth)***(Elementary–High School) 001A, Convention Center***Julie E. Taylor** (*julie\_taylor@eee.org*), Adelanto (Calif.) School District

Our Sun definitely affects Earth, especially in its active phase. Come engage in hands-on activities that demonstrate this influence on Earth.

**Engaging Students with NASA's MAVEN Mission (Earth)***(Informal Education) 001B, Convention Center***Erin Wood** (*erin.wood@lasp.colorado.edu*), Laboratory for Atmospheric and Space Physics, University of Colorado, Boulder

NASA's MAVEN stands for Mars Atmosphere and Volatile Evolution. Join us for an introduction to the MAVEN mission to Mars, and educational programming for elementary–high school grades.

**Earth Processes: Inquiries into Change (Earth)***(Elementary–Middle Level) 002, Convention Center***M. Jenice Goldston** (*dgoldsto@bamaed.ua.edu*) and **Amanda Glaze** (*amleel@crimson.ua.edu*), The University of Alabama, Tuscaloosa

Spark high levels of interest with inquiry activity within K–8 science students by examining content in Earth science associated with natural processes of rock recycling.

**Journey to the Edge of the Solar System (Earth)***(Middle Level–High School/Informal) 101A, Convention Center***Lauren Parker** (*parker.laurenb@yahoo.com*), Thornton Elementary School, Arlington, Tex.**Jayma Koval** (*jaymaolivia@yahoo.com*), East Cobb Middle School, Marietta, Ga.

This workshop is focused on solar output and the effects on Earth and our solar system. Participants will connect activities to NASA's solar missions.

# 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 E*) 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



### How to Present STEM to African-American Women (Gen)

(Elementary–High School) 201, Convention Center

**Darryl L. Baynes** ([dbaynes@interactivescienceprograms.org](mailto:dbaynes@interactivescienceprograms.org)), Interactive Science Programs, Wheeling, W.Va.

Come learn how to enhance your STEM lessons and increase their relevance to African-American women.



### CSI for Small Fry: Classroom Science Investigations That Encourage Science Processes (Gen)

(Preschool–Middle Level/Informal) 202A, Convention Center

**Danae' E. Wirth** ([dwirth@elkhart.k12.in.us](mailto:dwirth@elkhart.k12.in.us)) and **Susan E. Disch**, Encouraging Technology and Hands-On Science, Elkhart, Ind.

Learn to use high-interest forensic-type science investigations to promote higher level thinking and process skills.



### Using LabQuest2 with iPads in Modeling Instruction (Gen)

(High School/Supervision) 207A, Convention Center

**Scott Ragan** and **Angela C. Gard**, North Carolina State University, Raleigh

Modeling instruction cultivates teachers as experts on the effective use of technology for guided inquiry. Students learn to analyze data to develop coherent scientific models in physics, chemistry, and biology.

### Hands-On Nature of Science (Bio)

(Elementary–Middle Level) 208, Convention Center

**Rajlakshmi Ghosh** ([rgghosh2@kent.edu](mailto:rgghosh2@kent.edu)), Kent State University, Kent, Ohio

In this interactive workshop, we will model and share several hands-on activities, discussion prompts, and resources designed to explore nature of science designed for elementary-grade students.

### From Simple Circuits to Introductory Robotics (Phys)

(Elementary) 216A, Convention Center

**Gianna Colson** ([gianna.colson@gmail.com](mailto:gianna.colson@gmail.com)), Dominguez Elementary School, La Feria, Tex.

Teach your students how to build and when to use a simple, series and parallel circuit.

### Effective Implementation Strategies of Formative Assessment for the Science Specialist (Gen)

(Elementary–Middle Level) 217A, Convention Center

**Luis J. Arroyo** ([larroyo2@boston.k12.ma.us](mailto:larroyo2@boston.k12.ma.us)), Taylor Elementary School, Mattapan, Mass.

Join us as we demonstrate quick, effective, and meaningful strategies for implementing formative assessments as science specialists in the Boston public schools.

### Stop—Look—Listen: Science Investigations for Elementary Students (Gen)

(Preschool–Elementary) 217D, Convention Center

**Dee Mock** ([mock@bcm.edu](mailto:mock@bcm.edu)) and **Michael Vu** ([mv12@bcm.edu](mailto:mv12@bcm.edu)), Baylor College of Medicine, Houston, Tex.

Young children are naturally inquisitive and unintimidated by science. Investigate our curriculum on basic needs, living and nonliving, resources, and the environment—it's ready for your classroom.

### NESTA Session: Our Changing Planet (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.

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

This NESTA workshop introduces 18 free online activities and videos about changes in the Earth system, including three activities we will do together. Handouts!

### Inquiry, Activated! (Gen)

(General) Lone Star Ballroom C, Grand Hyatt

**Cathy K. Northcutt** ([cathy.k.northcutt@wmich.edu](mailto:cathy.k.northcutt@wmich.edu)) and **Renee Schwartz** ([r.schwartz@wmich.edu](mailto:r.schwartz@wmich.edu)), Western Michigan University, Kalamazoo

Engage in inquiry through two activities that can be used with all levels and content areas. First, participants will use scientific inquiry to make observations and predictions using model cubes as evidence. Then in a multiple-step process, participants will observe bone structures and make predictions as to the type of organism they have found.

### Kinesthetic Science: Bodies (and Minds) in Motion (Gen)

(General) Lone Star Ballroom D, Grand Hyatt

**Cody Sandifer** ([csandifer@towson.edu](mailto:csandifer@towson.edu)), Towson University, Towson, Md.

Celebrate diversity and different modes of learning by participating in kinesthetic activities that can help your students better understand physics, chemistry, and astronomy.

### Bioenergy: Make Gas from Grass in the Classroom (Gen)

(General) *Presidio A/B, Grand Hyatt*  
**D. Leith Nye** and **John M. Greenler** ([jgreenler@glbrc.wisc.edu](mailto:jgreenler@glbrc.wisc.edu)), University of Wisconsin–Madison

Walk away with kernels of knowledge and simple, research-informed techniques to convert cellulosic biomass sources such as grass, sawdust, and corn stover into ethanol biofuels.

### Using Cooperative Table Groups in Science (Gen)

(General) *Republic B, Grand Hyatt*  
**Vicki M. Massey** ([gvmassey@cox.net](mailto:gvmassey@cox.net)), NSTA Director, District XIV, Mesa, Ariz.

Skills for the 21st century and the new English language arts standards require students to communicate and collaborate more than they have ever done in the past. Find out how to seat students in cooperative groups and use management skills to be successful.

### Teacher Researcher Day Session: How Teacher Research Changed Our Teaching and Students' Learning (Gen)

(General) *Texas Ballroom A/B, Group 2, Grand Hyatt*  
**Deborah Roberts–Harris** ([drober02@unm.edu](mailto:drober02@unm.edu)), University of New Mexico, Albuquerque

Join me as I share how I began the year learning about teacher research and how, as a result, my teaching was transformed.

### NSTA Press® Session: Authors Share Favorite Lessons from Teaching Science Through Trade Books (Gen)

(Elementary) *Texas Ballroom D, Grand Hyatt*  
**Christine A. Royce** ([caroyce@aol.com](mailto:caroyce@aol.com)), Shippensburg University, Shippensburg, Pa.

**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 *Science & Children's "Teaching Through Trade Books"* column as they share some favorite trade book–inspired lessons featured in their new book.

### Expedition Earth and Beyond—Using Earth for Planetary Comparisons (Earth)

(Elementary–High School) *Travis C/D, Grand Hyatt*  
**Paige V. Graff** ([paige.v.graff@nasa.gov](mailto:paige.v.graff@nasa.gov)), Jacobs ESCG/NASA Johnson Space Center, Houston, Tex.

Work with images of Earth and other planets to learn about and understand geologic processes that have sculpted the surface of Earth and other worlds.



### ChemVlab+: A Virtual Laboratory for Connecting Chemistry Concepts and Procedures (Chem)

(High School) *Alamo Salon A, Marriott Riverwalk*  
**Jodi Davenport** ([jdavenport@wested.org](mailto:jdavenport@wested.org)) and **Matt D. Silberglitt** ([msilber@wested.org](mailto:msilber@wested.org)), WestEd, Oakland, Calif.

Learn about new online virtual chemistry lab activities that provide authentic learning environments with real-time coaching and immediate feedback. Explore activities freely available for use in high school chemistry classrooms!

### “Identifying” CSI Chemistry: Drugs, DNA, and Fingerprints (Chem)

(High School) *Alamo Salon C, Marriott Riverwalk*  
**Alexis Bizzaro** ([alexis.bizzaro@gmail.com](mailto:alexis.bizzaro@gmail.com)), Franklin Towne Charter High School, Philadelphia, Pa.

**Diane Welsch** ([dwelsch@ridleysd.org](mailto:dwelsch@ridleysd.org)) and **Chrissy Wilson** ([cwilson@ridleysd.org](mailto:cwilson@ridleysd.org)), Ridley High School, Folsom, Pa.

Engage your students in learning chemistry and biochemistry through the use of a crime scene. Unknown over-the-counter drugs will be analyzed and identified using presumptive color tests. Gel electrophoresis will be used to teach the chemistry behind DNA fingerprinting identification. Fingerprints can be visualized using various chemical techniques.

### Middle School Medicine (Bio)

(Middle Level–High School) *Alamo Salon D, Marriott Riverwalk*  
**Julie A. Boyk** ([julie.horner@msichicago.org](mailto:julie.horner@msichicago.org)), **Leslie M. Sadowski-Fugitt** ([leslie.sadowski-fugitt@msichicago.org](mailto:leslie.sadowski-fugitt@msichicago.org)), and **Lindsey Travis** ([lindsey.travis@msichicago.org](mailto:lindsey.travis@msichicago.org)), Museum of Science and Industry, Chicago, Ill.

This hands-on workshop integrates medical procedures and technology within a middle school and high school curriculum.

## 2:00–3:30 PM Exhibitor Workshops

### Outer Space, Tornadoes, and the Pacific Garbage Patch! Free K–12 Resources and Best Practices (Gen)

(General) 006B, Convention Center

Sponsor: Pearson

**Walter Rodriguez**, Pearson, Boston, Mass.

**Rob Nelson**, Untamed Science, Oregon, Wis.

Join the Online Learning Exchange team as we cover best practices on how to integrate exciting open educational resources in your classroom alongside paid resources to better teaching and learning. We'll give you access to our free resources on *OLEcommunity.com* as well as free 30-day trial access to our Online Learning Exchange platform.

### 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.

### Shake Up Your Lessons with Standard Deviants Online—Two Weirdos Show You How (Earth)

(Grades 6–12) 007B, Convention Center

Sponsor: Cerebellum Corp.

**Sam Genovese** (*sdahelp@cerebellum.com*) and **Kelly Egan** (*sdahelp@cerebellum.com*), Cerebellum Corp., San Francisco, Calif.

Interested in growing a third teaching arm? Approaching the core curriculum with some humor? Standard Deviants Accelerate is a new online teaching supplement designed to help teachers with instruction, assessment, and differentiation. Join us to learn how to seamlessly and easily integrate Standard Deviants Accelerate into your classroom and existing lesson plans.

### Bringing Real Neuroscience (Spiking Neurons!) into Your Classroom (Bio)

(Grades 5–College) 007D, Convention Center

Sponsor: Backyard Brains, Inc.

**Timothy Marzullo** (*info@backyardbrains.com*), Backyard Brains, Inc., Ann Arbor, Mich.

Want to show your students the real electrical activity of muscles and neurons? Curious about how remote-control cockroaches work and the physiology of reaction times and arm wrestling? During our workshop, you will learn—via live demos—how to bring neuroscience to your classroom.

### AAAS Science NetLinks: An Incredible Resource for Teachers and Students...and It's Free! (Gen)

(Grades K–12) 008A, Convention Center

Sponsor: AAAS Science NetLinks

**Suzanne Thurston**, AAAS Science NetLinks, Washington, D.C.

Looking for free science resources? *Sciencenetlinks.com* is the best place to find lesson plans, podcasts, interactives, blog posts, mobile apps, and current science news. Produced by AAAS, this award-winning website provides engaging, thoughtful, and dynamic resources that can enhance instruction and provide support in all disciplines of science.

### Journeys Toward Conservation with Julie Scardina (Env)

(General) 008B, Convention Center

Sponsor: SeaWorld Parks and Entertainment

**Julie Scardina**, Sea World/Busch Gardens, San Diego, Calif.

SeaWorld and Busch Gardens have been at the forefront of conservation efforts locally, nationally, and globally for nearly 50 years. Join Julie Scardina and some special animal ambassadors as she shares stories about conservation efforts in the field and success stories from home. Learn how you and your students can make a difference in your own school yards and neighborhoods.

# 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

**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. 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!

**Plate Tectonics Made Fun (Earth)**

(Grades 6–8)

103A, Convention Center

Sponsor: Texas Christian University Idea Factory

**Cedric James** (*c.o.james@tcu.edu*) and **Eric Simanek** (*e.simanek@tcu.edu*), Texas Christian University Idea Factory, Fort Worth

The Pangea Mat and Cutter is a kinesthetic tool linked to cyberlearning space that supports teaching plate tectonics across grade levels. Covering the elements on the Texas Essential Knowledge and Skills (TEKS) list, the tool accelerates discussions of the scientific evidence underlying the theory and allows students to create physical models. The tool uses quick response (QR) codes that allow access to data sets to refine the model. Participants take home a free tool. Visit [www.tcuideafactory.org](http://www.tcuideafactory.org) for more information.

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

(Bio)

(Grades 9–12)

204B, Convention Center

Sponsor: Houghton Mifflin Harcourt

**Steve Nowicki**, Duke University, Durham, N.C.

Who doesn’t like birds? Scientists certainly do, and, as a result, birds have been at the forefront of cutting-edge science for years. How can you use both the latest research findings and just plain fun facts to engage and motivate your science students? Join Steve Nowicki, author of *Holt McDougal Biology*, as he takes you on an energetic flight through avian science, illustrating the many ways you can bring science to life through simple demonstrations and hands-on activities. Come prepared to participate!

**STEM Curriculum—Moving Beyond the Acronym and into Classroom Practice (Gen)**

(Grades K–12)

205, Convention Center

Sponsor: McGraw-Hill Education

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

The main goal of STEM teaching and learning is to increase student engagement, deepen their understanding, raise achievement, and help them see the relevancy in what they are learning. But where do we begin? It requires integration. Is all integration the same? Are there different approaches? Are there different levels of integration? We will address these questions and provide a scaffolding of how to go about designing STEM curriculum in your classroom or district.

**Discovery Education and the iPad: Learning Gone Mobile (Gen)**

(Grades K–12)

209, Convention Center

Sponsor: Discovery Education

**Brad Fountain**, Discovery Education, Silver Spring, Md.

Intrigued by this latest touch-based technology? Wondering how these new devices are reshaping the learning landscape of our schools? Join us as we explore techniques for building a mobile learning toolkit powered by Discovery Education content. We’ll provide the latest updates for accessing Discovery Education content on mobile devices as we shift our students’ focus from consuming content to creating content on the iPad.

**Advanced Physics with Vernier (Phys)**

(Grades 9–College)

210A, Convention Center

Sponsor: Vernier Software & Technology

**Verle Walters** (*info@vernier.com*) and **David L. Vernier** (*info@vernier.com*), Vernier Software & Technology, Beaverton, Ore.

Get hands-on experience with our new physics curriculum for college, AP, and IB physics courses. Go beyond verification labs by using inquiry techniques to emphasize the exploration of phenomena and make sense of observations. Use advanced data collection and analysis to explore quantitative relationships between variables.

### Environmental and Earth Science with Vernier (Gen)

(Grades 7–College)

210B, Convention Center

Sponsor: Vernier Software & Technology

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

**Rick Rutland**, Five Star Education Solutions, LLC, San Antonio, Tex.

Learn how to use Vernier technology to study environmental science and Earth science in the field or in your classroom. Investigations covering a variety of topics from our *Investigating Environmental Science through Inquiry* and *Earth Science with Vernier* lab books will be performed using LabQuest 2 and sensors.

### Environmental Science: Exploring Ecosystems and Interdependent Relationships (Env)

(Grades 7–12)

211, Convention Center

Sponsor: Ward's Science

**Tim Montondo**, Ward's Science, Rochester, N.Y.

Examine a real-life example of pollution's effect on an organism and its habitat with this interactive workshop. You'll investigate water pollution using digital data collection, analyze the impact of pollution, and suggest a solution—all following the framework of NGSS as addressed in the standard of Interdependent Relationships in Ecosystems.

### Astronomy Education—Changing the Rules (Earth) (General)

214C, Convention Center

Sponsor: Spitz, Inc.

**David Bradstreet** ([dbradstr@eastern.edu](mailto:dbradstr@eastern.edu)), Eastern University, St. Davids, Pa.

Computerized astronomy simulation allows teachers to easily alter how objects in space behave. By making a “counterfactual universe,” we invite students to think creatively about understood space science concepts. A new curriculum series, created by Dr. David Bradstreet, uses astronomy simulation to break astronomical laws using our own moon, planets, and orbital behaviors. This universe of educational “artificial” will be shown in a series of lesson examples—originally created for planetarium teaching—that can be taught in a classroom setting.



### Real-World Science: NBC, NSF, and USPTO Videos You Can Use in Your Classroom (Gen)

(Grades 6–12)

217C, Convention Center

Sponsor: National Science Foundation

**Mark Miano**, NBC News/NBC Learn, Washington, D.C.  
**Jorge Valdes**, U.S. Patent & Trademark Office, Alexandria, Va.

Understanding how the science content students learn in our classes connects to their everyday lives is challenging, given time constraints and equipment limitations. NBC Learn, the education arm of NBC News; the NSF; and the United States Patent and Trademark Office (USPTO) have partnered to offer a new video collection—the *Science of Innovation*—that highlights the creative process of developing ideas into useful products and processes.

### 2:00–4:00 PM Meeting

#### NSTA Council Roundtable

(By Invitation Only)

Bowie A, Grand Hyatt

2:00–4:00 PM Presentation

SESSION 1



**AoA Session: Walking the Talk—How to Proceed with the Next Generation Science Standards (Gen)**

(Supervision/Administration) Bonham D, Grand Hyatt

**Cherry C. Brewton** (*cbrewton@georgiasouthern.edu*), AMSE Affiliate Representative, Statesboro, Ga.

**Margaret Glass** (*mglass@astc.org*), ASTC Affiliate Representative, and Association of Science-Technology Centers, Washington, D.C.

**John W. Tillotson** (*jwtillot@syr.edu*), ASTE President, and Syracuse University, Syracuse, N.Y.

**Barbara Tharp** (*bthrp@bcm.edu*), CESI President, and Baylor College of Medicine, Houston, Tex.

**Deborah Hanuscin** (*hanuscind@missouri.edu*), NARST Affiliate Representative, and University of Missouri, Columbia

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

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

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

**Patricia Simmons** (*patricia\_simmons@ncsu.edu*), NSTA Retiring President, and North Carolina State University, Raleigh

How do the NRC *Framework* and the highly anticipated Next Generation Science Standards affect different professional science education organizations and their members? What will the impacts be at the state level for teaching practice and professional development? Join representatives of the nine NSTA affiliate organizations to share thoughts and challenges on this current topic in science education.

2:00–6:00 PM Short Course

**Explore the World Beneath Your Feet Using Modern Technologies to Learn About Plate Tectonics and Earthquakes (SC-19)**

(Middle Level—High School)

La Reina, Hilton

Tickets Required: \$49

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

**John Taber** (*taber@iris.edu*), IRIS, Washington, D.C.

**Nancy West** (*nancywwest@gmail.com*), Quarter Dome, Fort Collins, Colo.

For description, see Volume 1, page 63.

2:00–4:00 PM Workshop

**Informal Science Day Share-a-Thon (Gen)**

(General) Ballroom B, Convention Center

**Candace J. Lutzow-Felling** (*cjl6b@virginia.edu*), NSTA Director, Informal Science, and The State Arboretum of Virginia, Boyce

**Emily Brown** and **Elizabeth Mulkerrin** (*elizabethm@omahazoo.com*), Omaha's Henry Doorly Zoo® and Aquarium, Omaha, Neb.

**Lisa DeRado** (*birdsleugh@cornell.edu*), BirdSleuth, Cornell Lab of Ornithology, Cornell University, Ithaca, N.Y.

**James Eggers** (*jegggers@batcon.org*), Bat Conservation International, Austin, Tex.

**Janice Harvey** (*jharvey@gemini.edu*), Gemini Observatory, Hilo, Hawaii

**Carla Johns** (*carla.j.johns@jpl.nasa.gov*), NASA Jet Propulsion Laboratory, Pasadena, Calif.

**Brian Kruse** (*bkruse@astrosociety.org*), Astronomical Society of the Pacific, San Francisco, Calif.

**Karen Maher** (*kmaher@fs.fed.us*), Mendenhall Glacier Visitor Center, Juneau, Alaska

**Minna Paul** (*mpaul@sazoo.org*), San Antonio Zoo, San Antonio, Tex.

**Kay Stone** (*stonemk@auburn.edu*), Auburn University, Auburn, Ala.

**Brad Tanner**, Mote Marine Laboratory, Sarasota, Fla.

**Traci Wierman** (*twierman@berkeley.edu*), The Lawrence Hall of Science, University of California, Berkeley

Come to the Informal Science Share-a-Thon, where informal science educators showcase their programs and resources, and share ideas with the science education community.



**2:30–4:00 PM Exhibitor Workshop**

**WindWise Science Curriculum (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.

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.

**3:00–4:30 PM Exhibitor Workshop**

**NOAA’s Climate Stewards Education Project (CSEP) Part II: What Works, What Doesn’t, and How to Tell the Difference (Earth)**

(Grades 6–12) 214A, Convention Center

Sponsor: NOAA

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

Join facilitated discussion groups and hear directly from peers about how they introduced climate change science and active environmental stewardship to their students and communities. Educators will share experiences of what has and has not worked, why, and how you can incorporate a solid evaluation component into your project.

**3:30–4:30 PM Featured Presentation**

**Blended Learning Cycle (Gen)**

(General) Grand Ballroom C1, Convention Center



**Paul Andersen**, Science Teacher, Bozeman High School, Bozeman, Mont.

President: Donna Wise, Strand Leader, NSTA San Antonio National Conference, and Wise Consulting, Flint, Tex.

A “Tech Junkie,” Paul Andersen sees technology—not as a gimmick—but as a way to improve learning. Paul uses technology and guided inquiry to differentiate instruction for his students. Podcasts of his lectures on biology, chemistry, physics, and Earth science have been viewed millions of times by students around the world. Currently, he is working on a 60-part series on the Next Generation Science Standards.

*For the last 19 years, Paul has been teaching science in Montana. For the first half of his career, he taught all the science classes at a small rural school in northern Montana. Currently, he is a science teacher and technology mentor at Bozeman High School.*

*Paul encourages other teachers to try out new technologies in their classrooms, e.g. using the school district’s Moodle website, Paul posts video lectures, flash cards, and sample tests. Innovations like these are some of the reasons, he was named the Montana Teacher of the Year and was a finalist for National Teacher of the Year. Learn more about Paul and watch some of his videos at [www.bozemanscience.com](http://www.bozemanscience.com).*

**3:30–4:30 PM Meeting**

**NSTA Chapter and Associated Groups Roundtable**

Presidio C, Grand Hyatt

Are you a volunteer leader or executive director of an NSTA chapter or associated group? Attend this networking session to learn more about what NSTA is doing to support your organization, share information, and network with other stakeholders.



### 3:30–4:30 PM Presentations

#### SESSION 1

##### Tracking Water from Space: Analyzing and Interpreting Data Using Visualizations and Scientific Data Sets (Earth)

(Middle Level) 003A, Convention Center  
**Dave Randle** (*drandle@amnh.org*), American Museum of Natural History, New York, N.Y.  
NASA's Gravity Recovery and Climate Experiment (GRACE) mission tracks changes in total water storage using two satellites that have been orbiting Earth for seven years. Explore ways to use data visualizations and scientific data sets to teach about climate change.

#### SESSION 2



##### Engaging Science Instruction for Special Needs Students (Gen)

(Elementary–High School) 201, Convention Center  
**Nichole R. Thomas** (*vvnthomas@mdeca.org*), Valley View High School, Germantown, Ohio  
**Michele P. Hodson** (*vvmhodson@mdeca.org*) and **Amanda W. Phillips** (*vvaphillips@mdeca.org*), Valley View Junior High School, Farmersville, Ohio  
Looking for innovative ways to engage special needs students in the science standards? Topics include inquiry, movement activities, accommodations, and differentiation. Handouts you can use right away!

#### SESSION 3



##### Exploring and Understanding the New Science Framework and Common Core State Standards (Bio)

(Elementary–Middle Level) 202B, Convention Center  
**Kevin J. Niemi** (*kjniemi@wisc.edu*), University of Wisconsin–Madison  
**Deb Kneser** (*dkneser@cesa6.org*), CESA 6, Oshkosh, Wis.  
Join us for a discussion centered on relevant strategies and approaches for addressing the science and English language arts standards.

#### SESSION 4



##### iPads Go Outdoors: Young Students Become Citizen Scientists (Env)

(Preschool–Elementary) 207A, Convention Center  
**Kimber Hershberger** (*khl12@scasd.org*), **Judi J. Kur** (*jjk11@scasd.org*), and **Cheryl Isola** (*cai11@scasd.org*), Radio Park Elementary School, State College, Pa.  
K–3 students use iPads to document seasonal changes in their school yard. Using videos, notebooks, and KLEW

(Know, Learning, Evidence, Wonder) charts, we'll share how students observe nature and record evidence.

#### SESSION 5

##### Engendering Inquiry and Teaching for Transferal (Gen)

(Elementary–Middle Level) 216B, Convention Center  
**William J. Sumrall** (*sumrall@olemiss.edu*) and **Kristen M. Sumrall** (*kmcurry@olemiss.edu*), The University of Mississippi, University, Miss.  
Moving students to doing full inquiry is the primary presentation goal. Through engendering inquiry and teaching for transferal, creating motivated lifelong learners is possible. Handouts!

#### SESSION 6

##### Geocaching to Develop Environmental Literacy (Gen)

(General) Bonham C, Grand Hyatt  
**Kathleen M. Gorski** (*kmgoriski@concentric.net*), Wilbraham & Monson Academy, Wilbraham, Mass.  
Geo- and Earth caching are combined with other technology tools and programs to improve children's understanding of the outdoors.

#### SESSION 7

##### Profession Sessions: Classroom Connections to STEM Careers (Gen)

(General) Crockett A, Grand Hyatt  
**Marguerite Sognier** (*masognie@utmb.edu*), The University of Texas Medical Branch at Galveston  
Connect with real STEM professionals online to learn what they do, why they chose to do it, and the impact of their educational experiences.

#### SESSION 8

##### Cooperative Learning: English Language Learners Develop and Teach Science Lessons (Gen)

(Elementary–High School) Crockett B, Grand Hyatt  
**Katie Hutchison** (*khutchison@usd116.org*), Urbana High School, Urbana, Ill.  
**Shalonda Carr** (*scarr@usd116.org*), Martin Luther King Jr. Elementary School, Urbana, Ill.  
Discussion centers on how to incorporate technology, scientific knowledge, and language usage tasks to develop a performance-based assessment for English language learners.

**SESSION 9** (two presentations)*(General)**Crockett C, Grand Hyatt***Though This May Be Science—There Is Method in It** (Gen)

**Kenneth W. Carlson** (*kcarlson@shawnee.edu*) and **Loretta W. Harvey** (*lharvey@shawnee.edu*), Shawnee State University, Portsmouth, Ohio

What needs to be taught in science methods classes? Hear the responses of science teachers and preservice teacher candidates as to how their methods classes have prepared them to deal with teaching science and what things need to be emphasized to a greater degree. Hear how methods classes prepare candidates to teach in a safe environment.

**Let Your Voice Be Heard** (Gen)

**Justin D. Brosnahan** (*brosnahan.science@gmail.com*), Potomac Middle School, Dumfries, Va.

Don't let public policy influence your teaching; influence policy instead. Learn how to get involved in political discourse and let your voice be heard.

**SESSION 10****Active Student Learning Portfolios—Not Your Typical Portfolio!** (Gen)*(General)**Crockett D, Grand Hyatt*

**Jewlana D. Smith-Hunter** (*jewlana05@aol.com*), Seaborn Lee Elementary School, College Park, Ga.

Are you looking for an alternative effective assessment method? You will be able to implement this highly functional student-centered portfolio in as little as 1-2-3.

**SESSION 11****Simple Machine Junkyard Cars** (Phys)*(Middle Level)**Lone Star Ballroom B, Grand Hyatt*

**Chris Herald** (*cherald76@gmail.com*), Eisenhower Middle School, Manhattan, Kans.

Building mini-junkyard vehicles is a great way to allow students to problem solve through a hands-on STEM project. All designs include three simple machines.

**SESSION 12****21st-Century Skills and Math Instruction: A Happy Marriage** (Gen)*(General)**Lone Star Ballroom C, Grand Hyatt*

**Helen Soule**, Partnership for 21st Century Skills, Washington, D.C.

**Michael Kaspar** (*mkaspar@nea.org*), National Education Association, Washington, D.C.

Join the Partnership for 21st Century Skills and the National Education Association to explore ways educators can use a new, exciting P21 math map as a classroom resource.

**SESSION 13****The Internet Science and Technology Fair (ISTF): STEM Integration** (Gen)*(General)**Lone Star Ballroom E, Grand Hyatt*

**Robert M. Everett** (*robert.everett@ucf.edu*), University of Central Florida, Orlando

Elementary, middle school, and high school teachers—come find out about the Internet Science and Technology Fair and how it relates to STEM.

**SESSION 14** **NSTA Press® Session: Inquiring Scientists, Inquiring Readers: Using Nonfiction Text Sets in Scientific Inquiry, Grades 3–5** (Gen)*(Elementary)**Mission A, Grand Hyatt*

**Jessica Fries-Gaither** (*jfriesgaither@gmail.com*), Columbus School for Girls, Columbus, Ohio

**Terry Shiverdecker** (*tshiverdecker.1@gmail.com*), Columbus, Ohio

Get to know inquiring scientists and inquiring readers through an inquiry experience integrating science and literacy. Learn how this powerful approach can work in your classroom.

**SESSION 15****IB4E: Preparing Elementary Teachers to Use Investigation Before Explanation** (Gen)*(College)**Republic A, Grand Hyatt*

**Gail H. Marshall** (*gmarshall@westga.edu*) and **Judy R. Cox** (*jcox@westga.edu*), University of West Georgia, Carrollton

Join us for a discussion of a model for preparation of elementary teachers to use IB4E through their own involvement in scientific inquiry and peer teaching.

SESSION 16

**Are Your Students Ready for the International Student Carbon Footprint Challenge (ISCFC)? (Env)**

(High School–College/Informal) *Seguin A, Grand Hyatt*

**Pamela J. Miller** (*pam.miller@stanford.edu*), Hopkins Marine Station, Stanford University, Pacific Grove, Calif.

**Geraldine Fauville** (*geraldine.fauville@loven.gu.se*), University of Gothenburg, Fiskebäckskil, Sweden

Students use our ISCFC calculator—specifically designed for students—to measure their carbon impact. Classes around the world share data and participate in international discussions using the Einstein social learning network to envision solutions.

SESSION 17

**Teacher Researcher Day Session: How to “Biotech” Your Secondary School Science Class: Strategies for Implementation and Assessment Using Action Research (Gen)**

(Middle Level–High School) *Texas Blrm. A/B, Group 1, Grand Hyatt*

**Marianne B. Barnes** (*mbarnes@unf.edu*) and **Lehman W. Barnes** (*lbarnes@unf.edu*), University of North Florida, Jacksonville

**Houda Darwiche** (*houdad@cpet.ufl.edu*), University of Florida, Gainesville

Receive an overview on a biomedical sciences program for secondary science teachers. Action research promoted transfer of teacher learning to classrooms and assessment of student learning.

SESSION 18

**Teacher Researcher Day Session: Exploring the Integration of Mathematics and Science (Gen)**

(General) *Texas Ballroom A/B, Group 2, Grand Hyatt*

**Carlos López Leiva**, The University of New Mexico, Albuquerque

Engage in professional development activities and a discussion about perspectives on using an integrated problem-based mathematics and science approach for diverse learners.

SESSION 19

**Teacher Researcher Day Session: Action Research on Innovative Methods: Accountability Groups; Flipped Lessons (Gen)**

(High School) *Texas Ballroom A/B, Group 3, Grand Hyatt*

**Lauren Deppe**, Fort Zumwalt North High School, O’Fallon, Mo.

Prsident: Amanda M. Gunning (*amgunning@optonline.net*), Mercy College, Dobbs Ferry, N.Y.

Two teachers share their experiences and methods for implementing two innovative teaching methods—accountability groups and flipped lessons—while studying student learning.

SESSION 20

**Teacher Researcher Day Session: Beating the Challenges of Climate Literacy (Earth)**

(General) *Texas Ballroom A/B, Group 4, Grand Hyatt*

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

The complexities of Earth’s climate can be understood using multiple representations. Discuss research on how to assist learners with interpreting data representations.

SESSION 21 (two presentations)

(General) *Texas Ballroom A/B, Group 5, Grand Hyatt*

**Teacher Researcher Day Session: Implementing National EE Curriculum Training into Methods Courses (Env)**

**Jeremy A. Ervin** (*jeremy.ervin@stockton.edu*), The Richard Stockton College of New Jersey, Galloway

Join me as I share research on successfully implementing National Environmental Education Training (Project Learning Tree, Project Wild, Project Wild Aquatic, and Project WET) in an education college methods course.

**Teacher Researcher Day Session: Creating Communities of Collaboration (Gen)**

**Deborah Roberts-Harris** (*drober02@unm.edu*), University of New Mexico, Albuquerque

As a new university faculty member, creating communities of collaboration with others is essential—and I’m learning to be creative!

## SESSION 22

**NSTA Press® Session: Designing Effective Science Instruction with the Next Generation Science Standards (Gen)***(General)* *Texas Ballroom D, Grand Hyatt***Anne Tweed** (*atweed@mcrel.org*), 2004–2005 NSTA President, and McREL, Denver, Colo.

Using a coherent framework can help teachers design lessons aligned with the Next Generation Science Standards and prepare students for tomorrow's workforce. Learn this C-U-E framework—identifying important Content, developing student Understanding, and creating a positive learning Environment.

## SESSION 23

**NSELA Session: No Child Left Behind in the Inclusive Science Classroom: Successful Accommodation and Modification Strategies for Children with Unique Needs (Gen)***(Preschool–Elementary)* *Travis A, Grand Hyatt***Eunyoung Lee** (*eunyounglee@my.unt.edu*) and **David Wojnowski** (*wojnowskidavid@gmail.com*), University of North Texas, Denton

Early childhood and elementary teachers, join us to learn effective instructional strategies to accommodate and modify your science lessons for children with special needs while recognizing their strengths as well as areas in need of improvement within an inclusive classroom setting.

## SESSION 24

**Bring Your Middle School Labs into the 21st Century (Gen)***(Middle Level)* *Travis B, Grand Hyatt***Taylor M. Holloway** and **Scot Oschman**, Ridgecrest Intermediate School, Rancho Palos Verdes, Calif.

Learn how to transform your favorite labs by infusing them with 21st-century skills such as critical thinking, collaboration, and technology skills.

## SESSION 25

**Designing Project-based Science Units: Keys for Success (Gen)***(Middle Level–High School/Supv.)* *Conf. Room 11, Marriott Rivercenter***Gail Dickinson** (*dickinson@txstate.edu*), Texas State University–San Marcos

Examine key practices that enhance successful implementation of project-based science units.

## SESSION 26

**Managing Science Fairs in the Classroom (Gen)***(General)* *Salon K, Marriott Rivercenter***JoEllen Schuleman**, P.S. 134M Henrietta Szold, New York, N.Y.

For many of our students, participating in the science fair is a challenge. Gone are the days of home-based projects and, increasingly, the classroom teacher is left to provide the support formerly given by parents. Learn how to easily manage a classroom full of projects.

## SESSION 27

**From Education to Exhibitions—How the Use of an Educational Laboratory in a Museum Exhibition Space Leads to a Deeper Understanding of Science for All Ages (Gen)***(General)* *Salon L, Marriott Rivercenter***Nick Martinez** (*nmartinez@amnh.org*), American Museum of Natural History, New York, N.Y.

Learn how the Sackler Educational Laboratory at the American Museum of Natural History is impacting science education for New York City secondary schoolchildren through interactive lab sessions.

## SESSION 28

**Climate Change: STEM Project-based Inquiry Modules (Gen)***(Middle Level–High School)* *Salon M, Marriott Rivercenter***Jaclyn Austin** (*jaclyn\_austin@hcpss.org*), Howard County Public School System, Ellicott City, Md.**Sarah Q. Pappalardo** (*sarah\_pappalardo@hcpss.org*), Dunloggin Middle School, Ellicott City, Md.

President: Naté Hall, Howard County Public School System, Ellicott City, Md.

Through a National Commission on Teaching and America's Future (NCTAF) grant, middle schools have tackled climate change! Encounter ways to integrate disciplines, engage scientists and educators, and deliver project-based STEM inquiry modules.

## SESSION 29

**Cyberlearning: Bringing the Science Classroom Closer to STEM (Bio)***(High School)* *Alamo Salon F, Marriott Riverwalk***Gwendolyn Jefferson** (*gjeffers@rialto.k12.ca.us*), Wilmer Amina Carter High School, Rialto, Calif.

Discover ways to effectively use technology with the Vocabulary, Assignments, Projects, and Labs (VAPL) scaffolding method that uses the concepts of STEM. See a paperless classroom use technology to motivate and engage all students.

### 3:30–4:30 PM Workshops

#### NASA’s Engineer a Satellite (Earth)

(Middle Level–High School/Informal) 001A, Convention Center  
**Ginger J. Butcher** ([ginger.butcher-1@nasa.gov](mailto:ginger.butcher-1@nasa.gov)), Sigma Space, Greenbelt, Md.

Students construct their own satellite model while learning about the various sensors and subsystems required to operate a NASA Earth-observing satellite.

#### Clear Skies Ahead: Clearing Up Confusion on Clouds (Earth)

(Preschool–Middle Level/Informal) 001B, Convention Center  
**Tina J. Cartwright** ([tina.cartwright@marshall.edu](mailto:tina.cartwright@marshall.edu)), Marshall University, Huntington, W.Va.

**Katie McDilda** ([kmcdilda@wvstateu.edu](mailto:kmcdilda@wvstateu.edu)), West Virginia State University, Institute

Does teaching about clouds make you feel ominous and overcast? By incorporating classifications and simple dichotomous keys, your confusion over clouds will evaporate away!

#### Take a CosmoQuest Adventure in Solar System Geology! (Earth)

(Elementary) 002, Convention Center

**Kathy Costello** ([kacoste@siue.edu](mailto:kacoste@siue.edu)) and **E.J. Reilly** ([ejreilly@charter.net](mailto:ejreilly@charter.net)) and Southern Illinois University, Edwardsville

Take your class on inquiry-based adventures to explore interplanetary geology! NASA space probe data can engage your students in standards-based activities to get them excited about doing real science!

#### Planets—More Than Memorizing Factoids! (Earth)

(General) 101A, Convention Center

**Alice (Jill) Black**, Missouri State University, Springfield  
There’s also their motion, orbits, scale models, comparisons to Earth, how astronomers know about them, history, and Nature of Science (NOS)! Join me and engage in three hands-on activities.

#### Growing Science Achievement with the Junior Master Gardener Program (Env)

(Elementary) 202A, Convention Center



**Lisa Whittlesey**, Junior Master Gardener, College Station, Tex.

The Junior Master Gardener program showcases hands-on garden activities that empower teachers to use plants and the garden environment for students to participate in the scientific process of collection and observation. Make mod-

els of science equipment like insect aspirators and complete activities highlighting basic gardening, plant parts/processes, and growing techniques. Leave with activities you can use next week.

#### Health and Nutrition in the Garden with Junior Master Gardener Program (Env)

(Elementary) 208, Convention Center

**Caren Walton**, Junior Master Gardener, College Station, Tex.

We invite you to attend this Junior Master Gardener session and cultivate an awareness of how gardening can be used as a tool to educate diverse children and families about the importance of healthy and active lifestyles.

#### Successful Science Activities for the Early Childhood Classroom (Gen)

(Preschool–Elementary) 215, Convention Center

**Michelle R. Cardenas**, Hillcrest Elementary School, Austin, Tex.

**Violetta F. Lien** ([vl10@txstate.edu](mailto:vl10@txstate.edu)), Texas State University–San Marcos, Round Rock

Join us as we introduce successful science activities for early childhood bilingual students that integrate cooking, art, language arts, math, and social studies to teach basic science concepts.

#### Inquiry and Patterns of Change: Forces and Motion (Phys)

(Elementary) 216A, Convention Center

**Marianne C. Phillips** ([marianne.phillips@tamusa.tamus.edu](mailto:marianne.phillips@tamusa.tamus.edu)), Texas A&M University, San Antonio

Come join the fun! This workshop will engage you in hands-on/minds-on activities as you learn how to design inquiries for all students. Materials and handouts provided.

#### Square Foot Gardening: STEM and Sustainability (Gen)

(Elementary–Middle Level) 217A, Convention Center

**Stephanie Selznick** ([sselznick@boston.k12.ma.us](mailto:sselznick@boston.k12.ma.us)), Curley K–8 School, Jamaica Plain, Mass.

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

Engage students in real-world STEM activities as you involve them and volunteers with “How-To” handouts and prizes. Science links to math, reading, writing, engineering, and more.

**Science Workstations “DO MATTER” (Gen)***(Preschool–Elementary) 217D, Convention Center***Glenda Trevino** (*gtrevino@houstonisd.org*), Ed White Elementary School, Houston, Tex.**Jessica D. Taylor**, Dodson Montessori Elementary School, Houston, Tex.**Emily Jankowski** (*ekleiner@houstonisd.org*), Ashford Primary School, Houston, Tex.

Explore engaging science investigations that use Physical Science 5E (Engage, Explore, Explain, Elaborate, and Evaluate) model lessons. Workstations and time management will be incorporated throughout this workshop.

**NESTA Session: National Earth Science Teachers Association Rock and Mineral Raffle (Earth)***(General) Ballroom A, Convention Center***Kimberly Warschaw** (*kimberly.warschaw@apsva.us*), Wakefield High School, Arlington, Va.**Roberta M. Johnson** (*rmjohnsn@nestanet.org*), NESTA and University at Albany, Boulder, Colo.**Ardis Herrold**, National Earth Science Teachers Association, Plymouth, Mich.

NESTA offers more than 50 specimens to choose from and a chance to win display-quality specimens of rocks, minerals, fossils, and other Earth science–related materials.

**NMLSTA Session: Exploring Engineering Applications of Evaporation and Condensation in Middle School Science (Chem)***(Middle Level) Lone Star Ballroom F, Grand Hyatt***James H. Kessler** (*jhkessler@acs.org*), American Chemical Society, Washington, D.C.**Patty McGinnis** (*pattymcginnis1@gmail.com*), NSTA Director, Middle Level Science Teaching, and Arcola Intermediate School, Eagleville, Pa.

Explore evaporation and condensation on the molecular level and design experiments to see how heating and cooling affect the rate of these processes. We’ll discuss engineering applications of evaporation and condensation to solve real-world problems.

**Using Case Study Analysis as a Tool for Differentiating Science Instruction for Students with Disabilities****(Gen)***(Elementary–High School) Republic B, Grand Hyatt***Gregory J. Borman**, The City College of New York, N.Y.**Derek Ramdass** (*dramdas@schools.nyc.gov*), PS 4K, Brooklyn, N.Y.**Lionel Callender** (*lcallen4@schools.nyc.gov*), New York City Dept. of Education, Floral Park, N.Y.

President: Compton Mahase, Fieldston High School, Bronx, N.Y.

Analyze a variety of case studies in small groups to help identify effective strategies for differentiating science instruction for students with disabilities.

**Measuring Forces, Speed, Velocity, and Acceleration of Flying Things (Phys)***(Elementary–High School) Salon B, Marriott Rivercenter***Edward P. Donovan** (*scieddie4@aol.com*), University of South Carolina Upstate, Spartanburg**Sharon L. Donovan**, St. Paul the Apostle Catholic School, Spartanburg, S.C.

Using flying things constructed during this workshop, explore the forces that affect flight and also measure the speed, velocity, and acceleration.

**Motion and Its Sidekicks: Velocity, Acceleration, Energy, Work, and Efficiency (Phys)***(Elementary–High School) Salon C, Marriott Rivercenter***Michael H. Suckley** (*dr.suckley@sciencescene.com*), Macomb Community College, Warren, Mich.**Paul A. Klozik** (*paklozik@wowway.com*), The MAPs Co., Fraser, Mich.

STEM-ify your students with activities investigating motion’s sidekicks and the laws of energy using Hot Wheels® and a modified stopwatch. All participants receive an activity handout and the first 35 also receive entire kits containing workshop materials.

**Flying Blood: Using STEM-based Forensic Trajectory Analysis of Blood Stains to Reconstruct a Crime! (Gen)***(Middle Level–High School) Salon D, Marriott Rivercenter***Michael J. Lazaroff** (*mjvlazaroff@gmail.com*), Staples High School, Westport, Conn.

Perform a forensic reconstruction of a crime scene based on the measurement of blood stains and the calculation of the trajectory of the blood.

**Chemistry as Fun and Games** (Chem)  
(High School) Alamo Salon A, Marriott Riverwalk  
**Michael P. Howe** ([mhowe01@me.com](mailto:mhowe01@me.com)), **Brad Krone**, **Sarah Falkoff** ([sarahfalkoff@claytonschools.net](mailto:sarahfalkoff@claytonschools.net)), and **Doug Verby** ([verby@clayton.k12.mo.us](mailto:verby@clayton.k12.mo.us)), Clayton High School, Clayton, Mo. Experience Nomenclature Football, Ion Poker, Electron Battleship, and more as you consider increasing student involvement and adding variety to your teaching style! People Demos, too!

**4:00–4:30 PM Presentation**

**SESSION 1**  
**Minute to Win It! Science Edition** (Chem)  
(Middle Level–High School) Alamo Salon B, Marriott Riverwalk  
**Stephanie L. Townsend** ([townsendstephanie0@mcsk12.net](mailto:townsendstephanie0@mcsk12.net)), Wooddale High School, Memphis, Tenn.  
You want assessments, you've got them! This innovative presentation poses assessment techniques modeled after a popular game show. Students will have a minute to perform and explain hands-on challenges based on physical science concepts.

**4:00–5:30 PM Reception**

**American Modeling Teachers Association Reception**  
Alamo Salon E, Marriott Riverwalk  
Visit <http://modelinginstruction.org> for information.

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**4:00–5:30 PM Exhibitor Workshops**

**Build the Scaffolding for 21st-Century Skills** (Gen)  
(Grades K–12) 006B, Convention Center  
Sponsor: Pearson  
**Karen L. Ostlund**, NSTA President, and Retired Professor, The University of Texas at Austin  
This session is designed to increase participants' knowledge of and expertise in the implementation of scaffolded inquiry (directed to guided to open inquiry) in order to help all students achieve academic success. Just as scaffolding provides the structure and support needed to construct a building, scaffolded inquiry provides essential support to help students construct the knowledge and skills needed for student success in conducting open inquiry. Learn how students progress through the continuum of inquiry (directed to guided to open inquiry), moving from teacher-directed to teacher-facilitated to student-directed inquiries for a continuous deepening of understanding of the skills and knowledge fundamental to conducting inquiry.

**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.

**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!

**Differentiating Instruction in Today's Chemistry Classroom (Chem)***(Grades 9–12)**204B, Convention Center*

Sponsor: Houghton Mifflin Harcourt

**Dave Kowal**, Houghton Mifflin Harcourt, Delafield, Wis. Take a close look at the students in your chemistry class today. These young adults enter our classes with a highly diversified set of skills and needs. This workshop will explore cutting-edge resources and strategies to help you reach all chemistry learners. Participants will experience interactive reading strategies, problem-solving support resources, and unique presentation tools that address various student-learning styles.

**Everyday Engineering—Experience the Excitement (Gen)***(Grades 3–8)**205, Convention Center*

Sponsor: McGraw-Hill Education

**Richard H. Moyer**, University of Michigan–Dearborn This workshop will model the integration of simple hands-on investigations that get students to develop the habits of using

the design process and applying science concepts—based on the best seller available at the NSTA Science Store!

**High School Biology—Digging Deeper Than Dissection (Bio)***(Grades 9–12)**211, Convention Center*

Sponsor: Ward's Science

**Janet Holliday**, VWR Education, Rochester, N.Y.

Go beyond the traditional to exciting new specimens with modern preparations that take today's students, standards, and safety regulations into account. Complete a formaldehyde-free dissection and then take your lesson deeper with a comparison to new Ward's Digital Slides. Learn and share best practices from our biology team.

**4:30–5:30 PM Exhibitor Workshops****Renewable Power, Vernier, and KidWind Gear****(Phys)***(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.

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.

**Discover Your Changing World with NOAA: Preview New Hands-On Climate Change Activities—Official Rollout! (Earth)***(Grades 5–12)**214A, Convention Center*

Sponsor: NOAA

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

NOAA has just produced a series of informal activities aimed at increasing climate literacy through active hands-on engagement. Come preview these fun activities at the formal rollout, and try them for yourself. Door prizes will be distributed—you must be present to win!

**5:00–5:30 PM Presentations****SESSION 1****Scaffolding Online Data to Improve Students' Understanding of Local Tides (Earth)***(Middle Level–College)**101A, Convention Center*

**Jeff D. Thomas** ([thomasjed@ccsu.edu](mailto:thomasjed@ccsu.edu)), Central Connecticut State University, New Britain

This three-part activity uses scaffolds in the inquiry process and NOAA's Tidal and Current online data in order for students to investigate local tidal cycles.

**SESSION 2****Teacher, Could We Try This in Class? (Gen)***(General)**Crockett B, Grand Hyatt*

**Kathleen M. Gorski** ([kmgorski@concentric.net](mailto:kmgorski@concentric.net)), Wilbraham & Monson Academy, Wilbraham, Mass.

Hear how hoax or pseudoscience videos can engender great practical discussions about the nature of science.

**5:00–6:00 PM Meeting****NESTA Annual Meeting***Ballroom A, Convention Center*

Find out what NESTA has been up to. Help plan for the future and share your thoughts on directions for NESTA. Attendance is open! Visit [www.nestanet.org](http://www.nestanet.org) for more information.

## 5:00–6:00 PM Presentations

### SESSION 1

#### **Dark Skies Not Required: Astronomical Observing from Anywhere (Earth)**

(Informal Education) 003A, Convention Center

**Christina Pease**, American Museum of Natural History, New York, N.Y.

Even under bright city skies, stars (and much more) are viewable! See how to connect your students to the night sky from any location.

### SESSION 2

#### **Implementing an Early Childhood Science Curriculum: Teacher Decisions and How They Affect Students' Skills and Attitudes (Gen)**

(Preschool) 101B, Convention Center

**Ellen M. Shamas-Brandt** ([lightsun764@aol.com](mailto:lightsun764@aol.com)), Littleton Public Schools, Centennial, Colo.

Join this session to learn how two early childhood teachers implemented a science curriculum, examining how their choices affected their students' process skills and attitudes.

### SESSION 3



#### **Science Camp: An Effective High-Stakes Test Intervention (Gen)**

(General) 201, Convention Center

**Julie Jackson** ([jj32@txstate.edu](mailto:jj32@txstate.edu)), Texas State University, San Marcos

This “how to” session will supply you with the information needed to organize and facilitate a Science Camp intervention at your school.

### SESSION 4

#### **Inspiring Achievement Through Rigorous, Innovative, and Authentic Experiences (Gen)**

(Elementary–Middle Level) 215, Convention Center

**Allison Silvaggio** ([allison.m.silvaggio@adams12.org](mailto:allison.m.silvaggio@adams12.org)) and **Jenny M. Tennant** ([jeannine.m.tennant@adams12.org](mailto:jeannine.m.tennant@adams12.org)), STEM Magnet Lab School, Northglenn, Colo.

**Robert Payo** ([robert.payo@dmns.org](mailto:robert.payo@dmns.org)), Denver Museum of Nature & Science, Denver, Colo.

Gain a deeper understanding of how to provide authentic STEM-based experiences using science standards, excursions, and technology. Join us for a memorable hands-on activity; resources provided.

### SESSION 5 (two presentations)

(Elementary–Middle Level) 216B, Convention Center

#### **SMART STEM: Ways to Use Interactive Technology in a Student-centered STEM Classroom (Gen)**

**David M. Effron**, Starling Middle School, Columbus, Ohio  
Plan rigorous Problem-Based Learning units that include the SMARTBoard and response systems (clickers) to engage all STEM learners.

#### **Using Design Briefs to Bring Engineering into STEM Education (Gen)**

**Rebecca Monhardt**, Loras College, Dubuque, Iowa  
**Leigh C. Monhardt** ([monhardt1@uwplatt.edu](mailto:monhardt1@uwplatt.edu)), University of Wisconsin–Platteville

Infuse engineering into your elementary or middle school classroom through the use of design briefs.

### SESSION 6

#### **It Is Easy Being Green (Env)**

(General) Bonham C, Grand Hyatt

**Pat Pierce** ([sciencelady@earthlink.net](mailto:sciencelady@earthlink.net)), South Carolina Virtual Charter School, Myrtle Beach

**Cindy Lilly** ([cilly001@horrycountyschools.net](mailto:cilly001@horrycountyschools.net)), Ocean Bay Middle School, Myrtle Beach, S.C.

At no cost, turn your school into a “Green Machine” while building scientific background and content, and using safe scientific practices and equipment with your students.

### SESSION 7

#### **The Science Behind Advanced Coursework in High School (Gen)**

(General) Crockett A, Grand Hyatt

**Gerhard Sonnert** ([gsonnert@cfa.harvard.edu](mailto:gsonnert@cfa.harvard.edu)) and **Philip M. Sadler** ([psadler@cfa.harvard.edu](mailto:psadler@cfa.harvard.edu)), Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

We investigated the effects of taking STEM AP courses on students' intentions to pursue a STEM career and on their performance in college STEM courses.

### SESSION 8

#### **It's About Time: Success for the “Time-challenged” Student (Gen)**

(General) Crockett D, Grand Hyatt

**Bonnie B. Nelson** ([bonnie.nelson@apsva.us](mailto:bonnie.nelson@apsva.us)) and **Kaitlyn Ruvel**, Wakefield High School, Arlington, Va.

Don't delay. Join us as we present current research on procrastination and strategies to help all students (including those with special needs) develop self-efficacy and promote academic achievement.

**SESSION 9**

**Meeting the Needs of All Science Students Through Differentiated Instruction (Gen)**

(Elementary–High School) Lone Star Ballroom D, Grand Hyatt  
**Brenda Turgeon**, Purdue University Calumet, Hammond, Ind.

Presider: Gary Ketterling ([gary.ketterling@ycsu.edu](mailto:gary.ketterling@ycsu.edu)), Valley City State University, Valley City, N.Dak.

Discover how well-designed 5E (Engage, Explore, Explain, Elaborate, and Evaluate) learning cycles differentiate instruction. Learn how to strategically plan lessons and embed effective strategies to meet the needs of all learners. Hand-outs and resources!

**SESSION 10**

**Project-based Science: Tips for Success (Gen)**

(Middle Level) Travis B, Grand Hyatt  
**Mary C. Whaley** ([mwhaley@mbayaq.org](mailto:mwhaley@mbayaq.org)), Monterey Bay Aquarium, Monterey, Calif.

Join Monterey Bay Aquarium educators in discussing resources available for project-based science. Experience tricks and tools for classroom and project management and examine sample projects.

**SESSION 11**

**Making a Difference...One Piece of Trash at a Time (Gen)**

(General) Conference Room 11, Marriott Rivercenter  
**Kelly D. White** ([kwhite@sdsu.org](mailto:kwhite@sdsu.org)), St. David's School, Raleigh, N.C.

**Natalie Johnson**, Urban Waters Federal Partnership, Michigan City, Ind.

Learn how to organize a trash cleanup, and show your students and parents how to change their community for the better.



*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.*



**SESSION 12**

**Increasing Inquiry and Engagement with Forensics (Gen)**

(High School) Salon D, Marriott Rivercenter

**Kristen L. Kohli** (*kristen@wakingdream.net*), Estrella Foot-hills High School, Goodyear, Ariz.

Many low-cost activities, ideas, and resources will be shared as I discuss how we designed and implemented what has become a highly popular forensics course.

**SESSION 13**

**Diversity in Science (Gen)**

(High School) Salon J, Marriott Rivercenter

**Dana Burgess-Peeples** (*peeplesd@fultonschools.org*), **Tracy L. Joyner**, and **Tiffany Mays** (*mayst@fultonschools.org*), Banneker High School, College Park, Ga.

Help diverse high school learners thrive academically in your science classroom by using a variety of differentiated practices and instructional styles as we move through the Response to Intervention (RTI) Academic model.

**SESSION 14**

**Making Science Fairs a Fun and Achievable Process for All Students (Gen)**

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

**Yajaira B. Fuentes-Tauber** (*yfuentes-tauber@hotmail.com*), Brownsville High School, Brownsville, Tex.

Presider: Ryan Tauber, Rivera High School, Brownsville, Tex.

Promote student participation and positive experiences in science fairs through the use of timelines, expectations awareness, and technology to facilitate completion and participation in competition.

**SESSION 15**

**More Lessons from *The Teen Parent Academy: Alternative School Strategies That Work* (Gen)**

(General) Salon L, Marriott Rivercenter

**Diane D. Walker** (*dianewalker2005@gmail.com*), New Mexico Highlands University, Rio Rancho

Join the author of *The Teen Parent Academy* for a conversation on how young parents and other students need a science education that meets their diverse needs.

**SESSION 16**

**Ocean for Life: An Initiative to Increase Cultural Understanding Through Ocean Science (Gen)**

(High School/Informal Ed) Salon M, Marriott Rivercenter

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

Ocean for Life is an ocean science program for multicultural teens to discover marine science, conservation, cultural understanding, and how the ocean connects us all.

**SESSION 17**

**Exploring Birds and Buds: Citizen Science for the School Yard (Bio)**

(Informal Education) Alamo Salon F, Marriott Riverwalk

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

**Sandra Henderson**, National Ecological Observatory Network, Boulder, Colo.

Motivate your students by taking them outside to learn science through simple observations of the birds and plants in your community. In this session, you'll practice citizen science skills and get handouts you can use with your students right away.

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**5:00–6:00 PM Workshops**

**Gadgets, Gizmos, and Contraptions: Engineering on the Moon (Earth)**

(Elementary–High School) 001A, Convention Center

**Angelo A. Casaburi**, NASA Johnson Space Center, Houston, Tex.

Design and build hands-on engineering design challenges related to NASA's Lunar Reconnaissance Orbiter and NASA's Lunar Crater Observation and Sensing Satellite mission to the Moon.

**From Earth to the Hubble Deep Field: Exploring the Scale of the Cosmos (Earth)**

(General) 001B, Convention Center

**Brian Kruse** and **Greg Schultz** (*gschultz@astrosociety.org*), Astronomical Society of the Pacific, San Francisco, Calif.

Experience activities taking students from the Earth-Moon system through the solar system and out to the distant realm of the galaxies.

### Using Engaging, Inquiry-based Hands-On Activities to Teach Students About the Water Cycle! (Earth)

(Elementary/Informal Ed) 002, Convention Center

**Dorian W. Janney** ([dorian.w.janney@nasa.gov](mailto:dorian.w.janney@nasa.gov)), NASA Goddard Space Flight Center, Greenbelt, Md.

Spritz up your science lessons. Come learn how to teach your elementary school students about the water cycle using NASA materials and fun-filled hands-on activities that are aligned to the Next Generation Science Standards!

### ✓ The Mystery of the Mummy Brothers (Gen)

(Middle Level) 202B, Convention Center

**Sally Wall**, Clear Creek ISD, Houston, Tex.

**Brenda Weiser** ([weiser@uhcl.edu](mailto:weiser@uhcl.edu)), University of Houston–Clear Lake, Houston, Tex.

How do you prepare students for a cumulative science test? Students work through a “Mummy Mystery” addressing middle school standards in a problem-based unit.



### Incorporating STEM Research with Technology Inquiry in Low Socioeconomic Classrooms (Gen)

(Middle Level–High School) 207A, Convention Center

**Sarah P. Radencic** ([spr67@msstate.edu](mailto:spr67@msstate.edu)), Mississippi State University, Mississippi State, Miss.

**Deborah Pounders** ([poundersd@columbus.k12.ms.us](mailto:poundersd@columbus.k12.ms.us)), Columbus Middle School, Columbus, Miss.

**Nathan DuFour** ([dufourj@columbus.k12.ms.us](mailto:dufourj@columbus.k12.ms.us)), Columbus High School, Columbus, Miss.

Presider: Sarah P. Radencic

Experience science and mathematics lessons developed for grades 7–12 incorporating STEM research through the use of technology from GPS units, handheld weather stations, and digital microscopes.

### The End of the Food Chain: An Experience in Extinction! (Bio)

(Elementary) 208, Convention Center

**David T. Crowther** ([crowther@unr.edu](mailto:crowther@unr.edu)), University of Nevada, Reno

**Tammi J. Crowther**, Rollon Melton Elementary School, Reno, Nev.

Food webs/food chains/trophic pyramids and the transfer of energy and energy flow through these systems will be explored in a very basic and engaging manner.

### Creative Expressions to Support Science Learning (Gen)

(Elementary–Middle Level) 217A, Convention Center

**Sandra K. Enger** ([engers@uah.edu](mailto:engers@uah.edu)), The University of Alabama in Huntsville

Join us for this hands-on workshop and walk away with ideas for using origami, tessellations, drawing, and writing to support and enrich science content.

### The Inquiry Approach: What Does Inquiry Look Like and What Is My Role as a Teacher? (Gen)

(Preschool) 217D, Convention Center

**Colleen Incandela** ([cincandela@adlerplanetarium.org](mailto:cincandela@adlerplanetarium.org)) and **Elizabeth Stockslager**, Adler Planetarium, Chicago, Ill.

Explore the process of inquiry in preschool classroom settings. Discover ways to empower your young students through inquiry.

### Science, Math, and Nature of Science: Modeling Density and Buoyancy in a Scientific Inquiry-based Integrated Science and Math Activity (Gen)

(General) Presidio B, Grand Hyatt

**Huseyin Colak**, Northeastern Illinois University, Chicago

**Erdal Tatar**, Illinois Institute of Technology, Chicago

Deepen your students’ knowledge of the concepts of density and buoyancy by making a model of a submarine that sinks and floats.

### Engage from Day 1 with Science Olympiad (Gen)

(Middle Level) Republic B, Grand Hyatt

**Kelly Price** ([price\\_kel@yahoo.com](mailto:price_kel@yahoo.com)), Forsyth County Schools, Cumming, Ga.

Get students moving and thinking from day one of your science class. Science Olympiad can be used for instruction as well as competition with active STEM experiences.



### NSTA Press® Session: Linking Science, Math, and Art Instruction (Gen)

(Elementary–Middle Level) Texas Ballroom D, Grand Hyatt

**John Eichinger** ([jeichin@calstatela.edu](mailto:jeichin@calstatela.edu)), California State University, Los Angeles

Join me and engage in several K–8 classroom-friendly inquiry activities taken from my two NSTA Press books: *Activities Linking Science With Math, K–4*, and *Activities Linking Science With Math, 4–8*.

**Intriguing Animals That Slither, Slide, Run, Hide, and Musk** (Env)

(General) Salon B, Marriott Rivercenter  
**Melony H. Allen** (*mhallen@uncg.edu*), The University of North Carolina at Greensboro

**Mary Ash** (*mary.ash@unp.edu*), The University of North Carolina at Pembroke

The Herp Project engages students of all ages in fieldwork and research projects. Many activities can be done on school grounds and in K–12 classes.

**Intelligent Designing: Using Engineering Design to Create an Environment for Inquiry** (Phys)

(Middle Level–High School) Salon C, Marriott Rivercenter  
**Robert D. Powell** (*robert@clcstlouis.org*), Challenger Learning Center–St. Louis, Ferguson, Mo.

Discover some unique interdisciplinary activities to engage students of all levels. Explore how to use rockets to help students learn multiple concepts and topics, including force, energy, math, and more.

**Biotechnology: Making Biodiesel in the Chemistry Classroom** (Chem)

(High School) Alamo Salon A, Marriott Riverwalk  
**Sara Rouse** (*srouse7@gmail.com*), Noble Academy Cleveland, Euclid, Ohio

**Gary Holliday** (*gholliday@uakron.edu*) and **Karen Plaster** (*kbp9@uakron.edu*), The University of Akron, Ohio

Pump up your science classroom with this workshop about alternative fuels and learn how to make your own biodiesel in your high school classroom!

**Thar She Blows! Introducing Marine Mammals to Your Class** (Bio)

(Informal Education) Alamo Salon D, Marriott Riverwalk  
**Carl J. Carranza** (*carl.carranza@lacity.org*), Cabrillo Marine Aquarium, San Pedro, Calif.

Want to learn more about whales and dolphins? Come find out about *all* marine mammals and get some activities to take back to your class. Free whale curriculum!

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**5:30–6:00 PM Presentation**

**SESSION 1**

**Have You Flipped? It'll Give You More Time for Practice, Experiments, Demos, and Group Projects** (Chem)

(Middle Level–High School) Alamo Salon B, Marriott Riverwalk  
**Monica M. Bowman** (*mbowman@ladueschools.net*), Ladue Horton Watkins High School, St. Louis, Mo.

Using existing technology and a dedicated team of teachers, we have flipped the chemistry classroom and, in the process, increased the fun.

**7:00–8:15 PM President's Reception**

(Tickets Required: \$65) M-10 Salon E, Marriott Rivercenter

Join us for this reception and enjoy heavy hors d'oeuvres, a pasta station, cheese display, and assorted desserts as well as dinner music and a cash bar. Also included is reserved seating at the President's Evening Featured Presentation by David Hanson (in Salon I) from 8:30 to 9:30 PM.

The menu includes profiteroles with ham; lobster salad; mini Chicken Wellington, Firecracker Shrimp, Boursin® cheese mushrooms, cobb salad, a cheese display, vegetable crudite, and assorted desserts.

Evening/cocktail attire suggested.

Please note that the President's Mixer with DJ and cash bar will follow the President's Evening Featured Presentation from 9:45 PM to 12 Midnight in Salon E.

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

## 8:30–9:30 PM President’s Evening Featured Presentation

### Androids in Education: How Humanlike Robots Can Help Students Learn and Teachers Teach (Gen)

(General)

Salon I, Marriott Rivercenter



**David Hanson** ([david@hansonrobotics.com](mailto:david@hansonrobotics.com)), CEO/Chief Scientist/Chairperson, Hanson Robotics, and CTO/Manager, Hanson RoboKind and Intelligent Bots, LLC, Plano, Tex.

Presider: Karen L. Ostlund, NSTA President, and Retired Professor, The University of Texas at Austin

Androids are finally here—walking, talking humanoid robots with feelings, intelligence, and personality, bundled with software for education in STEM. Recent surges in technology progress make such intelligent robots possible, and studies show that these robots capture children’s imagination. Hanson RoboKind transforms these robots into a classroom product with a curriculum that allows teachers to engage their students in technology, computer programming, and other skills. Moreover, this work is built on an open platform that enables teachers, students, and curriculum developers to explore new frontiers of their own, on one of the world’s most sophisticated robots. Join David as he also discusses the broader trend of robots and intelligent agents as tools for teaching, and how these tools can transform the classroom in coming years.

*Creating a socially intelligent robot that may even have a place in the human family is one of Dr. David Hanson’s goals. Labeled a “genius” by both PC Magazine and WIRED, David is the founder and CEO of Hanson Robotics—a company that aims to create robots as socially adept as any human being. He has invented or co-invented numerous technologies, including patented lipid-bilayer nanotech for naturalistic skin, expressive face mechanisms, and neurocognitive-inspired software systems for machine cognition.*

*By emulating human bio-systems, from cognition to locomotion to social expression, David seeks to unlock mysteries of human nature and yield machines that are creatively brilliant, truly conscious, and friends with us. Toward this end, in 2009 he founded the nonprofit Apollo Mind Initiative dedicated to realizing friendly genius machines by the year 2029.*

## 9:45 PM–12 Midnight Mixer

President’s Mixer

Salon E, Marriott Rivercenter

DJ and Cash Bar



## A Festival of Award-winning Film Classics and Inspiring Legends, Part III

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 and Friday evening sessions featuring cinematic jewels and the creative use of video technology to inform, inspire, motivate, entertain, and provoke thought.



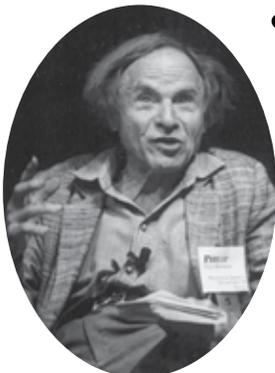
The screenings will be interspersed with commentary, discussion, and some live demonstrations.

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:



Chemistry with **Lee Marek** and **David Letterman**

- *The Ring of Truth* with **Philip Morrison** • *Inherit the Wind* (excerpt) as it relates to **Edward J. Larson's** *Summer for the Gods* • *Evolution* (animation) • *Full House* with **Stephen Jay Gould** and **Charlie Rose** • *Evolution: Fossils, Genes and Mousetraps* with **Kenneth R. Miller** • *The Pleasure of Finding Things Out* with **Richard Feynman**



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.



- *The Love Life of the Octopus, Sea Urchins, Sea Ballerinas*, and other films by French filmmaker-scientist-inventor **Jean Painleve** • *The Secret Life of Plankton* with marine biologist **Tierney Thys** • Surprise in a Mirror with **Verne Rockcastle**



- *Microcosmos* excerpts • Million to One

- *King Kong* (excerpt) as it relates to **J.B.S.**



- **Haldane's** famous essay • *The Invisible World* including the remarkable work of **Harold**



- **E. Edgerton** • striking footage of bird behaviors from the Cornell Lab of Ornithology

- *Snowflake Bentley; In the Small, Small Pond; Over the Meadow; Time of Wonder; Dem Bones; and This Land Is Your Land* from **Mort Schindel** and the

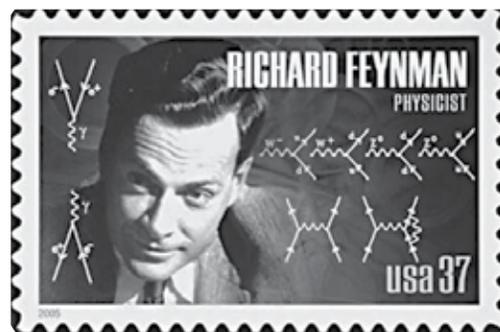


- renowned Weston Woods Studio •

- Jearl Walker** in conversation with **Johnny Carson** • Physics of Toys with **Julius Sumner Miller**



- a dozen choice internet sites for great science videos





*Photo courtesy of Jeff Brimont, San Antonio Zoo*

**7:00–9:00 AM Breakfast**

**NSTA Life Members' Buffet Breakfast (M-11)**

(Tickets Required: \$50)

*Bowie B/C, Grand Hyatt*

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. Activities and door prizes, too!

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Saturday. Please note that tickets are available to NSTA Life Members only.



**8:00–9:00 AM Presentation**

**SESSION 1** (two presentations)

(Middle Level–High School)

*003A, Convention Center*

**Connecting Students Virtually: Experience with the GLOBE Program's "From Learning to Research Project" (Earth)**

**Julie S. Malmberg** (*malmberg@globe.gov*), **Gary Randolph** (*randolph@globe.gov*), **Jessica N. Mackaro** (*jmackaro@globe.gov*), **Sarah Tessendorf** (*saraht@globe.gov*), and **Kristin Wegner** (*kwegner@globe.gov*), The GLOBE Program, Boulder, Colo.

GLOBE stands for Global Learning and Observations to Benefit the Environment. One aspect of The GLOBE Program's "From Learning to Research Project" was connecting students, teachers, and scientists virtually. Students were able to share questions, data, experiences, and projects (including a virtual conference) through the two years of this project.

**Leverage Online Maps to Teach Common Core Concepts in Earth Science (Earth)**

**Roger T. Palmer** (*roger.gisetc@gmail.com*), Bishop Dunne Catholic School, Dallas, Tex.

Online maps enable free interactive explorations across the Earth sciences—from rocks, mountain building, plate tectonics, weather, climate, erosion, soils, topography, and groundwater to oceanography!

**SESSION 2**

**Effectively Evaluating Student Achievement and Interest in Middle School Science Classes (Earth)**

(Middle Level–High School/Supv.) *003B, Convention Center*

**Dorian W. Janney** (*dorian.w.janney@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

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

Hear how middle school educators integrated NASA-related materials into their curricula and participated in a quasi-experimental study to determine the impact on their students' learning.

**SESSION 3**

**Strategies for Including Culture and Community in Science Education (Env)**

(Elementary–High School) *006C, Convention Center*

**Marilyn Jane Sigman** (*msigman@alaska.edu*) and **Robin A. Dublin** (*robindublin@coseealaska.net*), University of Alaska Fairbanks, Anchorage

Innovative strategies from the Centers for Ocean Sciences Education Excellence of Alaska (COSEE-AK) blend culturally relevant knowledge and community expertise into teaching about the ocean and climate change through science fairs, professional development, and place-based activities.

SESSION 4

**Meeting the Core Curriculum Standards: Grappling with Grackles Graphing!** (Gen)

(Elementary–Middle Level) 101B, Convention Center

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

Have your students struggled with making or interpreting graphs? In the BirdSleuth program, we encourage kids to collect and organize data about the birds that they see. You'll learn about free online resources that will help your students create appropriate graphs that allow meaningful conclusions. Stop in and discover great ways to connect science, literacy, and math!

SESSION 5

**Innovative Hands-On and Modeling Strategies Generate Synergy Between Science and Language with ELLs: Lessons Learned** (Gen)

(Preschool–Elementary) 102B, Convention Center

**Judy Reinhartz** (*jreinhartz@utep.edu*), The University of Texas at El Paso

**Adriana Alvarez** (*adriana.alvarez@colorado.edu*), University of Colorado, Boulder

Hands-on, language-rich science strategies demonstrate the synergy between science and language that resulted in statistically significant English language learners' science and reading scores on state-mandated tests.

SESSION 6

✓ **You Said It, But Did They Get It?** (Gen)

(Elementary) 202B, Convention Center

**Gelyn R. Cornell** (*gelyn.cornell@aliefisd.net*), Alief ISD, Houston, Tex.

**Joan Henington**, Youngblood Intermediate School, Houston, Tex.

Discover how to effectively use formative assessments to check for understanding and to improve student learning.

SESSION 7

**“Lettuce” Show You How to Garden with Young Children** (Bio)

(General) 204A, Convention Center

**Crystal L. Young** (*youngprekteacher@sbcglobal.net*), Sunset Valley Elementary School, Austin, Tex.

**Diana L. McMillan** (*mcmillandiana@gmail.com*), The University of Texas at Austin/Austin ISD

Cultivate children's natural curiosity with nature by learning how to set up a garden area and discover available resources to help get you started.

SESSION 8

 **NASA's Goldstone Apple Valley Radio Telescope Program** (Phys)

(Middle Level–High School/Informal) 207A, Convention Center

**Shannon L. McConnell**, NASA Jet Propulsion Laboratory, Pasadena, Calif.

Join NASA as we demonstrate how students can participate in radio science observations.

SESSION 9

**American Society for Microbiology (ASM) and NASA: Microbes and Spaceflight** (Bio)

(Middle Level–College) 207B, Convention Center

**Duane L. Pierson** (*duane.l.pierson@nasa.gov*), NASA Johnson Space Center, Houston, Tex.

President: Dave Westenberg (*djwesten@mst.edu*), Missouri University of Science and Technology, Rolla

Stimulate interest in microbes. Learn how NASA scientists study the impact of microbes on spaceflight, what they have learned, and how to protect astronauts.

SESSION 10

**Research, Inquire, Explore—A World of Animals** (Bio)

(Preschool–Elementary) 208, Convention Center

**Angie Seeley** (*angie.seeley@trussvillecityschools.com*) and **Michelle Miskelley** (*michelle.miskelley@trussvillecityschools.com*), Paine Primary School, Trussville, Ala.

Understanding the main animal groups provides a strong foundation for scientific learning. Discover how students explore the biology of animals using reading, math, and science.

SESSION 11

**PhET Interactive Simulations for Development of Student Science Practice** (Gen)

(Middle Level–College) 211, Convention Center

**Trish Loeblein** (*patricia.loeblein@colorado.edu*), University of Colorado, Boulder

I'll share strategies using PhET Interactive Simulations from the University of Colorado. PhET offers free online research-based, award-winning simulations and lessons specifically designed from research.

SESSION 12

**Conducting Scientific “Conversations” with the Natural World: A Powerful Strategy for Learning Science (Gen)**

(Elementary–Middle Level) 212A, Convention Center

**Rebecca E. Dyasi**, Long Island University, Brooklyn, N.Y.  
**Hubert M. Dyasi**, Professor Emeritus, City College of City University of New York, N.Y.

Experience a tested elemental professional development model that effectively builds educators’ confidence and capacity to successfully engage K–8 students in productive inquiry-based science investigations.

SESSION 13

**What ACT’s National Curriculum Survey Tells Us Is Being Taught in Science at Grades 3–12 (and What College Educators Say Should Be Taught) (Gen)**

(General) 212B, Convention Center

**R. Brian Hamilton** ([brian.hamilton@act.org](mailto:brian.hamilton@act.org)) **Stephanie L. Stratton** ([stephanie.stratton@act.org](mailto:stephanie.stratton@act.org)), and **Jennifer M. Seary**, ACT, Inc., Iowa City, Iowa

We’ll share results of ACT’s unique comprehensive survey of grades 3–12 and post-secondary educators and how these results relate to the Next Generation Science Standards.

SESSION 14

**Immersing Teachers and Students in Scientific Inquiry at the LIGO Science Education Center (Phys)**

(Elementary–Middle Level) 216A, Convention Center

**Kathy D. Holt** ([kholt@ligo-la.caltech.edu](mailto:kholt@ligo-la.caltech.edu)), LIGO Livingston Observatory, Livingston, La.

**Amber L. Stuver** ([stuver@ligo-la.caltech.edu](mailto:stuver@ligo-la.caltech.edu)), LIGO Science Education Center, Livingston, La.

Learn how to use inquiry-based outreach methods to explain complex concepts as well as create an environment that enables students and teachers to learn science.

SESSION 15

**Using Games to Formatively Assess Students’ Conceptual Understanding (Chem)**

(Middle Level–High School) 216B, Convention Center

**Karen D. Jacobs** ([karen.d.jacobs@aliefisd.net](mailto:karen.d.jacobs@aliefisd.net)), Alief ISD, Houston, Tex.

Engagement through competition is what is needed in today’s classroom to captivate students’ attention and determine student conceptual mastery!

**8:00–9:00 AM Workshops**

**NASA’s “Our Solar System Through the Eyes of Scientists” (Earth)**

(Elementary) 001B, Convention Center

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

Explore NASA’s new inquiry-based science and language arts curriculum with biographies, science notebooks, hands-on activities, and demonstrations. Learn about ice, volcanoes, moons, and more.

**Bringing Astronomy Activities and Science Content to Girls Locally and Nationally: A Girl Scout and NIRCcam Collaboration (Earth)**

(Elementary–Middle Level) 002, Convention Center

**Michelle Higgins** ([mhiggins@girlscoutsoaz.org](mailto:mhiggins@girlscoutsoaz.org)) and **Larry A. Lebofsky** ([lebofsky@lpl.arizona.edu](mailto:lebofsky@lpl.arizona.edu)), Girl Scouts of Southern Arizona, Tucson

NIRCcam stands for Near Infrared Camera. Engage in solar system and constellation hands-on activities for grades 4–8 students developed through a Girl Scout/NASA Infrared Telescope collaboration that aligns with national standards.

**Rocks Are Rockin’ in the Elementary Classroom (Earth)**

(Elementary) 006A, 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 show you how easy it is to teach rocks using inquiry-based activities.

**Using Scientific Field Campaigns to Learn About Weather and Climate (Env)**

(Middle Level–High School) 006B, Convention Center

**Becca Hatheway** ([hatheway@ucar.edu](mailto:hatheway@ucar.edu)), UCAR, Boulder, Colo.

**Alison Rockwell** ([rockwell@ucar.edu](mailto:rockwell@ucar.edu)), NCAR, Boulder, Colo.

Scientists conduct large-scale field campaigns in order to collect data about weather and climate. Learn about current field campaigns and engage in related hands-on activities.

**New Horizons: The Little Spacecraft That Could** (Earth)

(Elementary–High School) 101A, Convention Center  
**Julie E. Taylor** (*julie\_taylor@eee.org*), Adelanto (Calif.) School District  
Come investigate NASA's New Horizons Mission, which is designed to help us understand the worlds at the edge of our solar system.

**After-School Engineering or Engineers Don't Just Drive Trains** (Gen)

(Elementary–Middle Level) 102A, Convention Center  
**Barbara Tharp** (*bthrp@bcm.edu*), CESI President, and Baylor College of Medicine, Houston, Tex.  
**Greg Vogt** (*vogt@bcm.edu*) and **Michael Vu** (*mv12@bcm.edu*), Baylor College of Medicine, Houston, Tex.  
Introduce students to careers in engineering as they follow the design cycle to create the most loopy mini-roller coaster or the fastest flyer.



**Scribble-Bots** (Gen)

(Elementary–Middle Level) 202A, Convention Center  
**Olga V. Garcia** (*olgaluitin@me.com*), Our Lady of the Lake University, San Antonio, Tex.  
**Sandra Martinez Crawford** (*scrawf3@neisd.net*), Regency Place Elementary School, San Antonio, Tex.  
Presider: Diana Larson, Our Lady of the Lake University, San Antonio, Tex.  
Using markers, foam board, and a motor, construct a “scribble-bot” that incorporates science process skills, force and motion, and complete circuits.

**Body Systems: Hands-On Activities** (Bio)

(Middle Level–High School) 206A, Convention Center  
**Amanda Bayes** (*bayesam@lisd.net*) and **Demona Shipman** (*shipmand@lisd.net*), Flower Mound High School, Flower Mound, Tex.  
Anatomy and Physiology and Biology Teachers! Get ready for group activities, hands-on manipulatives, projects for your students to do at home, and easy free apps and crossword programs! We want to share what we do with you!

**Nuts, Pasta, and Goldfish...Oh My!** (Bio)

(Middle Level–High School) 209, Convention Center  
**Alejandra Guzman** (*asalazarguzman@gmail.com*), Bellaire High School, Stafford, Tex.  
Discover how to use common household items such as hardware, dried pasta, and edible goldfish crackers to teach engaging and meaningful lessons on evolution.

**Teacher-made Documentaries: Experience the Fine Art of Story-Teaching Through Documentary Production** (Gen)

(Middle Level–College) 210B, Convention Center  
**Bradley McLain** (*bradley.mclain@ucdenver.edu*), University of Colorado, Denver

This workshop combines hands-on experience creating video shorts using HD cameras and editing software with a rich discussion of the art and psychology of narrative for constructing knowledge and making it personally relevant and meaningful.

**STEM Starters** (Gen)

(General) 214A, Convention Center  
**Katelyn Wamsted** (*katelyn@girlstart.org*), Girlstart, Austin, Tex.  
**Sarah Carter**, Twin Cities Public Television, St. Paul, Minn.  
Girlstart and *SciGirls* bring you quick and easy STEM ice-breakers, all of which can be done in 10 minutes or less!

**Meaningful Assessment in Science That Impacts Learning** (Gen)

(General) 214B, Convention Center  
**DJ West** (*djwest78@gmail.com*), Schoolcraft College, Livonia, Mich.

The UbD Continuum of Assessment can function throughout the instructional cycle to provide important information about student understanding and mastery of the big ideas of science.

**Teaching the “E” with the “STM”: Integrating Engineering into Elementary School Curricula** (Gen)

(Elementary–Middle Level/Supv.) 214D, Convention Center  
**Kris Swanson** and **Sue Baillie**, Poinciana Elementary STEM Magnet School, Boynton Beach, Fla.

See how teachers at Poinciana Elementary STEM Magnet School are integrating engineering projects into their curricula using materials ranging from popsicle sticks to 3-D printers.

**Score a Winning Classroom** (Chem)

(General) 215, Convention Center  
**Christina Eisenhut** and **Margaret Armstrong**, Texas Tech University, Lubbock

Tired of the same old games? Put a new and exciting spin on popular games that can make assessment fun and engaging for students.

**More “Invisible” Physics (Phys)**

(High School) 217A, Convention Center

**Eric W. Schwartz** (*eschwartz\_56@hotmail.com*), Grace King High School, New Orleans, La.

**Brittany Stanford**, Power House High School, Chicago, Ill.

Help students build understanding of abstract concepts in physics through activities that clarify topics that are notoriously difficult, both to teach and to learn.



**Effective Strategies for Enhancing Science Learning for Diverse Students (Gen)**

(Elementary) 217B, Convention Center

**Marianne C. Phillips** (*marianne.phillips@tamusa.tamus.edu*), Texas A&M University, San Antonio

Come join the fun! Let’s create tools you can use to differentiate instruction and provide for the diversity of students’ needs.

**Fostering Writing Through Hands-On Engineering (Gen)**

(Elementary) 217D, Convention Center

**Jody Hilton** (*jomihill@aim.com*), Christopher Avenue Community School, Brooklyn, N.Y.

**Cindi Van Petten** (*cin155@aol.com*), **Angula P. Bumbury-Camacho** (*angula99@hotmail.com*), and **Shawndel Stewart**, P.S. 005 Dr. Ronald McNair, Brooklyn, N.Y.

Inspire students to write so they can document their inventions! Learn to make a wind-up toy or balloon car, and then create an instruction manual.

**9:30–10:00 AM Presentation**

**SESSION 1**

**Teaching with Tablets (Gen)**

(General) 214B, Convention Center

**Carla Romney** (*romney@bu.edu*), Boston University School of Medicine, Boston, Mass.

Emphasis will be placed on the use of tablets (such as the iPad) and tablet PCs in STEM teaching.

**9:30–10:30 AM Presentations**

**SESSION 1**

**NASA’s INSPIRE Project (Earth)**

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

**Jim H. Gerard**, Oklahoma State University NASA Education Projects, Kennedy Space Center, Fla.

NASA’s INSPIRE stands for Interdisciplinary National Science Project Incorporating Research and Education Experience. The INSPIRE Online Learning Community provides STEM learning through the use of innovative technologies and enhances the development of students’ scientific and engineering practices as well as fosters the development of scientific literacy.

**SESSION 2**

**The AIAA STEM K–12 Educator Academy (Earth)**

(General) 003B, Convention Center

**Edgar A. Bering** (*eabering@uh.edu*), University of Houston, Tex.

Learn about the American Institute of Aeronautics and Astronautics and their STEM Curriculum Modules for K–12 students. This curriculum is free for K–12 teachers.

**SESSION 3**

**Conceptual Connections: Integrating Science and Social Studies (Gen)**

(Elementary) 102B, Convention Center

**Debbie Traynor**, **Lillian Fernandez**, **Barbara Parisher**, and **Nancy Kreth**, Northside ISD, San Antonio, Tex.

Take a journey across standards in an integrated science and social studies concept-based curriculum that engages students in scientific and historical inquiry.

**SESSION 4**

✓ **Science as Inquiry: Linking Instruction with Assessment (Bio)**

(Middle Level–High School) 202B, Convention Center

**Becky Landa** (*blanda@saisd.net*), **Lisa Y. Soll** (*lsoll@saisd.net*), and **Luz Zoch** (*lzoch@saisd.net*), San Antonio (Tex.) ISD

Experience how the new Texas science standards and testing system have impacted a change in how we think about, do, and assess science instruction in secondary classroom.

SESSION 5

**Genetics: A Dime a Dozen (Bio)**

(Middle Level–College) 204A, Convention Center

**Neil Lamb** ([nlamb@hudsonalpha.com](mailto:nlamb@hudsonalpha.com)), HudsonAlpha Institute for Biotechnology, Huntsville, Ala.

Want to include cutting-edge genetic research in your class? See the top 10 discoveries of 2012 presented in student-friendly language and correlated to national standards.

SESSION 6



**Google Earth in the Classroom (Earth)**

(General) 207A, Convention Center

**Wendy E. Van Norden** ([wvannorden@hw.com](mailto:wvannorden@hw.com)), Harvard-Westlake School, Studio City, Calif.

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

Join us for an introduction of basic uses of Goggle Earth. We'll demonstrate various techniques, including adding placemarks, pictures, overlays, polygons, and embedding videos. Examples of Earth Science Google Earth exercises will be highlighted.

SESSION 7

**Penguins—Not So Black and White! (Bio)**

(Preschool–Elementary) 208, Convention Center

**Laura J. Wettersten** ([lwettersten@shwschool.org](mailto:lwettersten@shwschool.org)) and

**Katie M. Stock** ([kstock@shwschool.org](mailto:kstock@shwschool.org)), Sacred Heart School, Winnetka, Ill.

Primary teachers, join us and gain hands-on ideas for teaching students about the exciting lives of penguins!

SESSION 8

**Zap Your Classroom with Technology (Gen)**

(Elementary–Middle Level) 210B, Convention Center

**Lucy Sennett** ([lucy.sennett@waldenu.edu](mailto:lucy.sennett@waldenu.edu)), Walden University, Brandon, Miss.

Walk away with free technology tools that can enhance your instruction with words, visuals, audio input, and humor.

SESSION 9

**Integration of Elementary Science and Math Through Investigations in an Outdoor Classroom (Gen)**

(Elementary/College) 212A, Convention Center

**Gail H. Marshall** ([gmarshall@westga.edu](mailto:gmarshall@westga.edu)), **Judy R. Cox** ([jcox@westga.edu](mailto:jcox@westga.edu)), and **Jill Drake** ([jdrake@westga.edu](mailto:jdrake@westga.edu)), University of West Georgia, Carrollton

Hear about a variety of outdoor activities designed to help preservice elementary teachers integrate science and math into inquiry investigations.

SESSION 10

**The 2011 NAEP-TIMSS Linking Study: Understanding Science Achievement in the U.S. and Around the World (Gen)**

(General) 212B, Convention Center

**Taslina Rahman**, National Center for Education Statistics, Washington, D.C.

Are U.S. students keeping up internationally? Learn about a Department of Education study that allows states to benchmark their students' science performance—domestically and abroad.

SESSION 11

**Family Science Nights and Field Trips (Gen)**

(Middle Level/Informal Education) 213A, Convention Center

**Jay Holmes**, American Museum of Natural History, New York, N.Y.

Family Science Night allows teachers, students, families, and the whole community to learn science together.

SESSION 12

**Modeling Inquiry Activities for Middle School Science Classrooms (Chem)**

(Elementary–Middle Level) 216A, Convention Center

**Angi Shelton** ([angi@temple.edu](mailto:angi@temple.edu)), Virginia Beach, Va.

**Uma Natarajan** ([umanat@temple.edu](mailto:umanat@temple.edu)), Temple University, Philadelphia, Pa.

Join us for an inquiry activity on “Mystery Liquids,” designed for middle grade students, as we share our professional development experiences from an ongoing assessment project.

SESSION 13

**Survival Is Not Enough: Your First Years as a Chemistry Teacher (Chem)**

(Middle Level–High School) 216B, Convention Center

**Kenneth R. Owens** ([kowens@smtexas.org](mailto:kowens@smtexas.org)), St. Mark's School of Texas, Dallas

A successful chemistry teacher has to start out doing a few things right; catching up is hard. Come hear about one teacher's mistakes and improvements over 17 years of experience.

SESSION 14

**Fabulous Physics—with Cheap Stuff! (Phys)**

(Middle Level–High School) 217A, Convention Center

**Al W. Guenther**, Retired Educator, Palos Verdes Estates, Calif.

Experience an exciting hour of attention-grabbing, often discrepant demonstrations designed to arouse curiosity, stimulate the inquiry process, and enhance concept construction. Pick up illustrated handouts so you can do these demos with your students.

**9:30–10:30 AM Workshops**

**JetStream: An Online School for Weather (Earth)**  
(*Informal Education*) 001A, Convention Center

**Dennis Cain** ([dennis.cain@noaa.gov](mailto:dennis.cain@noaa.gov)), National Weather Service, Fort Worth, Tex.

Join me for an overview of a National Weather Service online resource for learning the basic how's and why's of weather. JetStream includes lesson plans/activities for the classroom.

**NASA's Ready-to-Go Solar Energy and Solar Science Activities for the K–5 Classroom (Earth)**

(*Elementary*) 001B, Convention Center

**Ruth Paglierani** ([ruthp@ssl.berkeley.edu](mailto:ruthp@ssl.berkeley.edu)), University of California, Berkeley

Brighten your classroom teaching—solar energy and solar science make a dynamic combination for young learners. Use fun hands-on activities integrating literacy and math to explore our amazing Sun.

**Newton's Laws Through Rocketry (Earth)**

(*Elementary–Middle Level*) 002, Convention Center

**Jennifer Becerra** ([jenniferbecerra@nisd.net](mailto:jenniferbecerra@nisd.net)) and **Angela Turner**, Northside ISD, San Antonio, Tex.

Presenter: Julie Blazek, Briscoe Middle School, San Antonio, Tex.

Teach Newton's laws of motion with rocketry using hands-on lessons. Integrate technology, learn about NASA rocketry resources, and win your own classroom rocket launcher.

**I Love Rocks: Lessons for Young Children (Earth)**

(*Preschool–Elementary*) 006A, Convention Center

**Robert Williams**, BLOCKS Project, The University of Texas, Belmont

Learn the many ways that you can study rocks with young children...and for little cost.

**Stretch Their Thinking: Science Extension Lessons (Gen)**

(*General*) 006C, Convention Center

**Jennifer A. Gates**, Cobb County Schools, Smyrna, Ga.

Learn how to extend science lessons in the classroom. From high-achieving early finishers to English language learners, all benefit from stretching their thinking. Take away great ideas and a CD of materials, resources, and lesson plans.

**Earth Science Models—Scale or Functional? (Earth)**  
(*General*) 101A, Convention Center

**Alice (Jill) Black**, Missouri State University, Springfield  
Scale—a framework crosscutting concept—is vital for understanding many concepts. Join me and engage in math-based astronomy, geology, and meteorology hands-on activities involving scale and functional models.

**Igniting Students' Interest in STEM Careers (Gen)**  
(*Elementary–Middle Level*) 102A, Convention Center

**Leesa Hubbard** ([leesa@sallyrides.com](mailto:leesa@sallyrides.com)), Teacher in Residence, Sally Ride Science, San Diego, Calif.

Leave this workshop empowered to help your students' view of science careers become exciting and relevant! Learn simple strategies to blend with your current teaching practices.

**Coyote vs. Road Runner: Why Acme Anvils Aren't Needed (Bio)**

(*General*) 205, Convention Center

**Christina R. Cid** ([ccid@austin.utexas.edu](mailto:ccid@austin.utexas.edu)) and **Laura M. Naski** ([lauramn@austin.utexas.edu](mailto:lauramn@austin.utexas.edu)), The University of Texas at Austin

Wonder how animals thrive on eating toxic prey or why horned lizards have horns? Investigate adaptations and food webs using a specimen- and inquiry-based approach.

**Minds On, Bodies On! Teaching Biology Is a Whole-Body Experience (Bio)**

(*High School*) 206B, Convention Center

**Patsy L. Jones** ([patsy.jones@husd.org](mailto:patsy.jones@husd.org)), Higley High School, Gilbert, Ariz.

Teaching complex biological concepts is easy with these interactive lessons that involve both mind and body. Get them out of their desks and learning biology!

**Engaging Students with Science: Implementing the 5E Model (Gen)**

(*Elementary–High School*) 211, Convention Center

**Deanna Lankford**, University of Missouri, Columbia

Undergraduate science education students share lessons they converted into the 5E (Engage, Explore, Explain, Elaborate, and Evaluate) instructional format. Get great ideas and sample 5E lessons at this share-a-thon.

**Integrating Scientific Research into K–12 STEM Education (Gen)**

(Elementary–High School) 214A, Convention Center

**Julia Dobish** ([julia.dobish@vanderbilt.edu](mailto:julia.dobish@vanderbilt.edu)), **Kimberly Mulligan** ([kimberly.x.mulligan@vanderbilt.edu](mailto:kimberly.x.mulligan@vanderbilt.edu)), and **Sydika McKissic** ([sydika.mckissic@vanderbilt.edu](mailto:sydika.mckissic@vanderbilt.edu)), Vanderbilt University, Nashville, Tenn.

**Greta Knudson**, Bailey STEM Magnet Middle School, Nashville, Tenn.

Presider: Jeannie Tuschl, Vanderbilt University, Nashville, Tenn.

Scientists and classroom teachers share their experiences and expertise in stimulating interest in STEM subjects for K–12 students in urban schools through hands-on examples.

**Incorporating Engineering in K–12 Science (Gen)**

(Elementary–High School) 214D, Convention Center

**Debbie K. Jackson** and **Nigamanth Sridhar** ([n.sridhar1@csuohio.edu](mailto:n.sridhar1@csuohio.edu)), Cleveland State University, Cleveland, Ohio

Experience several activities that have been taught by teachers and presented at the Engineering Education Summer Conference.

**Building Scientific Curiosity, Content Knowledge, and Inquiry Skills Through Investigations of Simple Electric Circuits (Phys)**

(General) 217B, Convention Center

**Eleanor W. Close**, Texas State University–San Marcos  
**Sara Torres** ([sara.torres@smcisd.net](mailto:sara.torres@smcisd.net)), Travis Elementary School, San Marcos, Tex.

Spark learning in your science classroom! Join us as we investigate electric circuits to build content knowledge, experience an appropriate structure for inquiry-based lessons, and discuss integration of science and literacy.

**Sci-a-grams (Gen)**

(Elementary) 217D, Convention Center

**Al Camacho**, P.S. 42, Claremont Community School, Bronx, N.Y.

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

**Travis Sloane** ([tsloane@schools.nyc.gov](mailto:tsloane@schools.nyc.gov)), East Side Elementary School, New York, N.Y.

Diagrams are fundamental in science, but many students claim they can't draw. Learn simple hands-on techniques for overcoming drawing anxiety in teachers and students.

**11:00 AM–12 Noon Presentations**

**SESSION 1**

**Addressing Next Generation Science Standards Through Innovative Global Science Inquiry (Earth)**

(Middle Level) 003A, Convention Center

**Walter S. Smith** ([walter.smith@ttu.edu](mailto:walter.smith@ttu.edu)), Texas Tech University, Lubbock

Presider: Jacque Garcia, Eagle Mountain-Saginaw ISD, Fort Worth, Tex.

Discover how to involve grades 4–8 students in NGSS-based, internationally collaborative-free science inquiry through the World MOON Project. Participation requires only eyes and the internet.

**SESSION 2**

**NASA's SOFIA, Cosmic Evolution, and Airborne Astronomy Ambassadors (Earth)**

(Middle Level–College) 003B, Convention Center

**Dana E. Backman** ([dbackman@sofia.usra.edu](mailto:dbackman@sofia.usra.edu)), NASA Ames Research Center, Moffett Field, Calif.

SOFIA stands for the Stratospheric Observatory for Infrared Astronomy. Join me for the latest findings from NASA's SOFIA airborne observatory, hands-on demonstrations with lesson plans about infrared light, and free NASA resources.

**SESSION 3**

**Citizen Science: Systems Academy for Young Scientists (SAYS) (Env)**

(General) 006B, Convention Center

**Elizabeth Pate** ([elizabeth.pate@utsa.edu](mailto:elizabeth.pate@utsa.edu)), The University of Texas at San Antonio

**Deborah J. Tippins** ([dtippins@uga.edu](mailto:dtippins@uga.edu)), University of Georgia, Athens

Discover how to create a summer enrichment citizen science program for diverse intermediate-grade students focused on systems thinking, robotics, watershed science, and petroleum engineering.

**SESSION 4**

**Flying on SOFIA with the Airborne Astronomy Ambassadors Program (Earth)**

*(General)* 101A, Convention Center  
**David V. Black** (*elementsunearted@gmail.com*), Walden School of Liberal Arts, Provo, Utah

Now you, too, can be an astronomer as you fly on the SOFIA, (the Stratospheric Observatory for Infrared Astronomy). As an Airborne Astronomy Ambassador, you will partner with a team of astronomers and fly aboard the SOFIA aircraft, a 747SP jet carrying a 2.5 meter infrared telescope to altitudes above 41,000 feet. Hear firsthand accounts and learn how you can apply for this amazing opportunity.

**SESSION 5**

**Science Investigations—A to Z (Gen)**

*(Elementary–Middle Level)* 101B, Convention Center  
**Crystal L. Marsh** and **Marsha S. Wallace** (*marshwall@hotmail.com*), Salk School of Science, New York, N.Y.

If planning and implementing science investigations seems like a daunting task, this session will show you a simple way to scaffold it for your students.

**SESSION 6**

**Science Integrated Stations in the Library (SISL) (Gen)**

*(Elementary)* 102B, Convention Center  
**Faye Hagerty**, Northside ISD, San Antonio, Tex.

**Kent F. Page**, Peggy Carnahan Elementary School, San Antonio, Tex.

Science stations integrated with literacy in the library? District and campus librarians will co-present on the use of innovative and successful library/science model lesson

plans about change over time, fossil and fossil fuel formation, erosion, deposition, and the transfer of energy through food chains and webs. Return to your campus with lessons ready for use by your upper elementary teaching teams.

**SESSION 7**



**Using PhET Simulations to Teach Introductory Physics (Phys)**

*(Middle Level–High School)* 207A, Convention Center  
**Paul Williams**, Austin Community College, Austin, Tex.

PhET stands for the Physics Education Technology Project. Research indicates PhET simulations can be an effective resource for teaching physics. Come hear how to effectively integrate free PhET simulations into your classroom.

**SESSION 8**

**Engineering for All: Pipeline Programs for Underserved Communities (Phys)**

*(General)* 207B, Convention Center

**Paige Teamey**, Iridescent, Los Angeles, Calif.  
 Learn about Iridescent’s experience building a STEM pipeline of programs in underserved communities: from “Little Engineers and Parents” to “High School Explainers.”

**SESSION 9**

**Science Sleuths: How Seventh Graders and Kindergartners Can Engage in Meaningful Inquiry (Gen)**

*(General)* 212B, Convention Center

**Christina M. Ryan** and **Pamela Schwartz** (*pshwartz@cpsd.us*), Cambridgeport School, Cambridge, Mass.

Science Sleuths is a partnership between kindergartners and seventh-graders to practice inquiry skills and to engage in meaningful scientific research through a mentorship format.

**11:00 AM–12 Noon Workshops**



**NSTA Press® Session: Teaching and Learning Biology Through Scientific Argumentation (Bio)**

*(Middle Level–High School)* Presidio B, Grand Hyatt San Antonio  
**Sharon Schleig** (*sshleig@purdue.edu*), Purdue University Calumet, Hammond, Ind.

**Victor Sampson** (*victor.sampson@gmail.com*), Florida State University, Tallahassee

Come away with some innovative ways to help diverse populations of middle school and high school students learn more about and from scientific argumentation in biology.

**Stellar Classification (Earth)**

*(High School–College/Informal)* 001A, Convention Center

**Donna L. Young** (*donna@aavso.org*), NASA/SAO/CXC, Bullhead City, Ariz.

Use spectra of different types of stars to investigate how the study of spectra provides scientists with information about stellar properties, processes, and evolutionary history.

**Spinning Around Earth, Moon, and Sun (Earth)**  
(Elementary) 001B, Convention Center

**Roberto Jose Dominguez** (*rdomingu@houstonisd.org*), Wharton K–8 Dual Language Academy, Houston, Tex.  
We will present engaging hands-on activities related to cyclical events involving the Earth, Moon, and Sun.

**Scale Models in Astronomy (Earth)**  
(Elementary) 002, Convention Center

**Mary Kay Hemenway** (*marykay@astro.as.utexas.edu*), Retired Educator, Austin, Tex.

Perform hands-on activities involving scale models from the solar system to galaxies. Receive a printed copy of the NASA-supported StarDate “The Solar System.”

**Astronomy: A Trip Through the Solar System in Activities (Earth)**

(Elementary–High School) 006A, Convention Center

**Debra S. Hardy** (*debra.hardy@krumisd.net*), Krum High School, Krum, Tex.

Discover easy hands-on activities you can use to take your students of all ages on a trip through the solar system.

**You’re Never Too Old, or Too Young, to Enjoy a Good Review! (Gen)**

(General) 006C, Convention Center

**Bradley B. Lanier** (*lanier.brad@wintonwoods.org*), Academy of Global Studies at Winton Woods High School, Cincinnati, Ohio

Walk away with several exciting and proven review techniques from a master teacher of 19 years who has successfully implemented these review activities at the elementary, middle school, high school, and university levels in a variety of socioeconomic situations (from an elite private school to the poorest school in the state and several others in between).

**Engage with Engineering Using Science Olympiad Activities (Gen)**

(Elementary) 202A, Convention Center

**Kelly R. Price** (*price\_kel@yahoo.com*), Forsyth County Schools, Cumming, Ga.

Presider: Jessica Jetton, Forsyth County Schools, Cumming, Ga.

Elementary students are natural engineers. See how Science Olympiad can serve as a resource for engineering design challenges.

**Teaching Biology with Graphic Organizers, Foldits, and Sign Language (Bio)**

(General) 205, Convention Center

**Rachael E. Guillen**, Pleasanton High School, Pleasanton, Tex.

Discover new biology teaching techniques! Receive a full year’s worth of teaching tools along with helpful suggestions for mixing up direct teaching moments.

**Student Pattern Finding Through Biology Labs and Literacy Probes (Bio)**

(High School) 206A, Convention Center

**Karen D. Jacobs** (*karen.d.jacobs@aliefisd.net*), Alief ISD, Houston, Tex.

**Krystal M. Davis** (*krystal.m.davis@aliefisd.net*), Hastings Ninth Grade Center, Houston, Tex.

Emphasis will be placed on the diverse needs of all learners within the biology classroom through the use of labs and literacy probes.

**Digital Resources from the HudsonAlpha Institute for Biotechnology (Bio)**

(Middle Level–High School) 206B, Convention Center

**Jennifer Carden** and **Madelene Loftin** (*mloftin@hudsonalpha.com*), HudsonAlpha Institute for Biotechnology, Huntsville, Ala.

Imagine students using their smartphones to study cells and to see science as a process. During this hands-on workshop, participants will use laptops and tablets to investigate these free digital resources.

**Combining Engineering and Ecology (Env)**

(Elementary–Middle Level) 208, Convention Center

**John T. Pappas**, Carleton Washburne School, Winnetka, Ill.

**Kerry Maxwell**, Alcott High School, Chicago, Ill.

Find out how we work with inner city and suburban students to enhance their knowledge of ecology through engineering activities.

**Evolution Inquiry and Modeling in AP Biology with BioQUEST (Bio)**

*(High School–College)* 209, Convention Center

**Kristin P. Jenkins**, BioQUEST, Madison, Wis.

BioQUEST stands for Quality Undergraduate Education Simulations and Tools in Biology. Join us as we explore the new AP Biology Framework’s Big Idea of Evolution, the AP Biology lab on mathematical modeling: Hardy-Weinberg, and online resources for inquiry.

**Mentor–Mentee Dialogues: Fostering the Development of Beginning Science Teachers of Diverse Students (Gen)**

*(General)* 211, Convention Center

**Sissy S. Wong** (*sissywong@uh.edu*), University of Houston, Tex.

**Irasema Ortega** (*iortega2@uaa.alaska.edu*), University of Alaska, Anchorage

Emphasis will be placed on assisting mentors in identifying mentees’ beliefs about diverse students and progress toward more student-centered practices.

**STREAM: A Science, Technology, Literacy Integration Model (Gen)**

*(Elementary–Middle Level/Supv.)* 214A, Convention Center

**Samantha Messier** (*samantha.messier@bvsd.org*) and **Stephanie Schroeder** (*stephanie.schroeder@bvsd.org*), Boulder Valley School District, Boulder, Colo.

Join us as we discuss a successful model for using iPads in K–8 classrooms to support both literacy and science. The emphasis will be on apps that support student creation of content that demonstrates thinking.

**What Do Engineers Really Do? How Is Engineering Different from Science and How Does That Change My Teaching Practice? (Gen)**

*(General)* 214D, Convention Center

**Ann P. McMahon** (*annpmcmahon@gmail.com*), K–12 Engineering Educator, St. Louis, Mo.

Discover how engineering is fundamentally different from science and how that affects classroom instruction. This session is presented by an engineer who is also a K–12 science educator.

**Mix It Up with Chemistry Games! (Chem)**

*(High School)* 216A, Convention Center

**Marguerite Shaffer**, Texas Tech University and Bastrop (Tex.) ISD

Tired of the same old games? Put a new and exciting spin on popular games that can make assessment fun and engaging for students.

**Bringing STEM Activities into Your Classroom (Gen)**

*(Preschool–Elementary)* 217D, Convention Center

**Amy U. Banks** (*abanks@mail.hockaday.org*), The Hockaday School, Dallas, Tex.

This hands-on workshop will present fun and challenging STEM activities that are appropriate for preK–4 classrooms.

**11:30 AM–12 Noon Presentation**

**SESSION 1**

**Using Technology in the Classroom (Bio)**

*(General)* 204A, Convention Center

**Lacey Huffling** (*ldhuffli@uncg.edu*), The University of North Carolina at Greensboro

Two teachers have adapted their classrooms to be centers of collaboration, engagement, instant feedback, easy data analysis, and rapid grading. Come learn more!

# 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 Luncheon 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



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### Saturday, April 13

NSTA/AMSE George Washington Carver Breakfast

By Invitation Only

Salon A, Marriott Rivercenter ..... 7:00–9:00 AM

NSTA Past Presidents' Breakfast

By Invitation Only

Lone Star Ballroom A, Grand Hyatt ..... 7:30–8:15 AM

Science in the Community Breakfast (M-6) (*Sponsored in part by DuPont Office of Education*)

(Tickets Required: \$15)

Ballroom B, Convention Center ..... 7:30–9:00 AM

NSTA Recommends Reviewer/Publisher Coffee

By Invitation Only

Presidio C, Grand Hyatt ..... 8:00–9:00 AM

Shell Science Teaching Award Judging Panel Meeting

By Invitation Only

Conf. Room 10, Marriott Rivercenter ..... 8:30–10:30 AM

American Modeling Teachers Association Meeting

Bonham, Marriott Riverwalk ..... 9:00 AM–4:00 PM

NSTA International Lounge

Republic C, Grand Hyatt ..... 9:00 AM–5:00 PM

NSTA Student Chapter Showcase and Lounge

Executive Assembly, Conv. Center ..... 11:00 AM–3:00 PM

NSTA/SCST College Luncheon (M-7)

(Tickets Required: \$60)

Bonham E, Grand Hyatt ..... 12 Noon–1:30 PM

AMSE Past Presidents Meeting

By Invitation Only

Conf. Room 10, Marriott Rivercenter ... 12 Noon–1:30 PM

CESI/NSTA Elementary Science Luncheon (M-8)

(Tickets Required: \$60)

Lone Star Ballroom A, Grand Hyatt ..... 12 Noon–2:00 PM

Aerospace Educators Luncheon (M-9) (*Sponsored in part by Northrop Grumman Foundation*)

(Tickets Required: \$60)

Salon E, Marriott Rivercenter ..... 12 Noon–2:00 PM

NSTA Council Roundtable

By Invitation Only

Bowie A, Grand Hyatt ..... 2:00–4:00 PM

NSTA Chapter and Associated Groups Roundtable

Presidio C, Grand Hyatt ..... 3:30–4:30 PM

American Modeling Teachers Association Reception

Alamo Salon E, Marriott Riverwalk ..... 4:00–5:30 PM

NESTA Annual Meeting

Ballroom A, Convention Center ..... 5:00–6:00 PM

President's Reception (M-10)

(Tickets Required: \$65)

Salon E, Marriott Rivercenter ..... 7:00–8:15 PM

President's Mixer

DJ and Cash Bar

Salon E, Marriott Rivercenter ..... 9:45 PM–12 Midnight

### Sunday, April 14

NSTA Life Members' Buffet Breakfast (M-11)

(Tickets Required: \$50)

Bowie B/C, Grand Hyatt ..... 7:00–9:00 AM

# Index of Exhibitor Workshops

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## AAAS Science NetLinks (Booth #1200)

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Saturday, April 13	2:00–3:30 PM	008A, Conv. Center	AAAS Science NetLinks: An Incredible Resource for Teachers and Students...and It's Free! (p. 78)
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## Aldon Corp. (Booth #639)

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Saturday, April 13	8:00–9:30 AM	008A, Conv. Center	Chemi-paloosa: Demonstrations and Hands-On Activities That Really Get a Reaction! (p. 26)
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## American Federation of Teachers (Booth #2039)

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Saturday, April 13	12 Noon–1:30 PM	008B, Conv. Center	Share My Lesson: Free K–12 Resources Developed by Teachers for Teachers (p. 56)
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## Backyard Brains, Inc. (Booth #2041)

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Saturday, April 13	12 Noon–1:30 PM	007D, Conv. Center	Bringing Real Neuroscience (Spiking Neurons!) into Your Classroom (p. 56)
Saturday, April 13	2:00–3:30 PM	007D, Conv. Center	Bringing Real Neuroscience (Spiking Neurons!) into Your Classroom (p. 78)

## Bio-Rad Laboratories (Booth #825)

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Saturday, April 13	8:00–9:30 AM	217B, Conv. Center	Finding Funds for Biotech: A Grant-writing Workshop (p. 28)
Saturday, April 13	10:00–11:00 AM	217B, Conv. Center	Science, Fashion, and Fun! Genes in a Bottle™ Kit (p. 40)

## Carolina Biological Supply (Booth #404)

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Saturday, April 13	8:00–9:30 AM	206B, Conv. Center	GEMS® Sequences: Scientific Argumentation and the Common Core (p. 27)
Saturday, April 13	8:00–9:30 AM	207B, Conv. Center	Genetics with <i>Drosophila</i> (p. 27)
Saturday, April 13	10:00–11:30 AM	008B, Conv. Center	The Basics of Flipped Learning, Getting Started: A Panel Discussion of Experts (p. 42)
Saturday, April 13	10:00–11:30 AM	207B, Conv. Center	Strawberry DNA and Molecular Models (p. 43)
Saturday, April 13	10:00–11:30 AM	206B, Conv. Center	Connecting Water Quality and Soil Properties Concepts in Your Science Labs (p. 43)
Saturday, April 13	12 Noon–1:30 PM	207B, Conv. Center	Introduction to Wisconsin Fast Plants® (p. 57)
Saturday, April 13	12 Noon–1:30 PM	206A, Conv. Center	Elements for Success: Exploring Carolina Chemistry (p. 57)

## Cerebellum Corp. (Booth #1244)

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Saturday, April 13	2:00–3:30 PM	007B, Conv. Center	Shake Up Your Lessons with Standard Deviants Online—Two Weirdos Show You How (p. 78)
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## Discovery Education (Booth #1135)

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Saturday, April 13	8:00–9:30 AM	209, Conv. Center	The Dirty Job of Teaching Just Got Easier with Discovery High School Science Techbook (p. 27)
Saturday, April 13	10:00–11:30 AM	209, Conv. Center	Common Practices That Get to the CORE of Great Instruction Using Discovery Education Science Techbooks (p. 43)
Saturday, April 13	12 Noon–1:30 PM	209, Conv. Center	Discovery Education Science Techbook—Myths Busted (p. 57)
Saturday, April 13	2:00–3:30 PM	209, Conv. Center	Discovery Education and the iPad—Learning Gone Mobile (p. 80)

## Edusmart Science (Booth #1037)

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Saturday, April 13	10:00–11:30 AM	007B, Conv. Center	The Effective Integration of Standards-based Instruction and STEM Project Based Learning (p. 41)
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## FDA Center for Food Safety and Applied Nutrition (Booth #1036)

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Saturday, April 13	10:00–11:30 AM	006A, Conv. Center	FDA Food Science Workshop for Middle School (p. 40)
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## **Flinn Scientific, Inc. (Booth #726)**

Saturday, April 13	10:00–11:30 AM	103A, Conv. Center	Promote Inquiry Using Chemistry Demonstrations from Flinn (p. 42)
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## **Houghton Mifflin Harcourt (Booth #1526)**

Saturday, April 13	8:00–9:30 AM	204B, Conv. Center	Misconception Mania: Exciting and Engaging Ways to Address Common Misunderstandings in K–8 Science (p. 26)
Saturday, April 13	10:00–11:30 AM	204B, Conv. Center	Extra, Extra! Read All About It! Taking Biology from the News to the Classroom (p. 43)
Saturday, April 13	12 Noon–1:30 PM	204B, Conv. Center	Meeting the Needs of Today’s Physics Students (p. 57)
Saturday, April 13	2:00–3:30 PM	204B, Conv. Center	From Big Bird to Bird Brains—How Fun with Our Feathered Friends Helps Students Learn Science (p. 80)
Saturday, April 13	4:00–5:30 PM	204B, Conv. Center	Differentiating Instruction in Today’s Chemistry Classroom (p. 91)

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## **K’NEX Education (Booth #1102)**

Saturday, April 13	8:00–9:30 AM	102B, Conv. Center	DNA Replication and Transcription—No More Gumdrops and Toothpicks! (p. 26)
Saturday, April 13	10:00–11:30 AM	102B, Conv. Center	Bring the Excitement of Hands-On Learning to Your Middle School Classroom! (p. 42)
Saturday, April 13	12 Noon–1:30 PM	102B, Conv. Center	It’s Off to the Races with K’NEX® Education’s Forces, Energy, and Motion Set! (p. 56)
Saturday, April 13	2:00–3:30 PM	102B, Conv. Center	Go Green and Bring STEM Concepts to Life with the K’NEX® Education Renewable Energy Set! (p. 80)
Saturday, April 13	4:00–5:30 PM	102B, Conv. Center	Bring Simple Machine Concepts to Life with Real-World Models! (p. 90)

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## **KidWind Project (Booth #1826)**

Saturday, April 13	8:00–9:30 AM	007C, Conv. Center	Wind Energy for K–4 (p. 24)
Saturday, April 13	10:00–11:30 AM	007C, Conv. Center	Solar Energy—Hands On! (p. 41)
Saturday, April 13	12 Noon–2:00 PM	007C, Conv. Center	Wind-energized Classroom (p. 59)
Saturday, April 13	2:30–4:00 PM	007C, Conv. Center	WindWise Science Curriculum (p. 83)
Saturday, April 13	4:30–5:30 PM	007C, Conv. Center	Renewable Power, Vernier, and KidWind Gear (p. 91)

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## **LAB-AIDS, Inc. (Booth #1216)**

Saturday, April 13	8:00–9:30 AM	203A, Conv. Center	The Full Course (p. 26)
Saturday, April 13	10:00–11:30 AM	203A, Conv. Center	The Changing Earth (p. 42)
Saturday, April 13	12 Noon–1:30 PM	203A, Conv. Center	Hot Bulbs: Investigating Energy Efficiency (p. 56)

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## **LaMotte Co. (Booth #526)**

Saturday, April 13	8:00–9:30 AM	006A, Conv. Center	AP Environmental Water Quality Assessment Curriculum (p. 24)
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## **LEGO Education (Booth #805)**

Saturday, April 13	8:00–9:30 AM	007A, Conv. Center	Introducing Simple Machines into the Elementary Classroom with LEGO® Bricks (p. 24)
Saturday, April 13	10:00–11:30 AM	007A, Conv. Center	Enhancing the Elementary Classroom Through Robotics (p. 40)
Saturday, April 13	12 Noon–1:30 PM	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Getting Started (p. 56)
Saturday, April 13	2:00–3:30 PM	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Advancing Your Program (p. 78)
Saturday, April 13	4:00–5:30 PM	007A, Conv. Center	Machines and Mechanisms in the Classroom and Beyond (p. 90)

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## McGraw-Hill Education (Booth #705)

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Saturday, April 13	8:00–9:30 AM	205, Conv. Center	Teaching Science with Toys and Treats (p. 27)
Saturday, April 13	10:00–11:30 AM	205, Conv. Center	Teaching Science with Toys and Treats (p. 43)
Saturday, April 13	12 Noon–1:30 PM	205, Conv. Center	I See What You Mean! Developing Visual Literacy (p. 57)
Saturday, April 13	2:00–3:30 PM	205, Conv. Center	STEM Curriculum—Moving Beyond the Acronym and into Classroom Practice (p. 80)
Saturday, April 13	4:00–5:30 PM	205, Conv. Center	Everyday Engineering—Experience the Excitement (p. 91)

## National Geographic Education (Booth #242)

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Saturday, April 13	10:00–11:30 AM	007D, Conv. Center	Dive into Exploration (p. 41)
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## National Science Foundation (Booth #432)

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Saturday, April 13	10:00–11:30 AM	217C, Conv. Center	Real-World Science: NBC, NSF, and USPTO Videos You Can Use in Your Classroom (p. 44)
Saturday, April 13	2:00–3:30 PM	217C, Conv. Center	Real-World Science: NBC, NSF, and USPTO Videos You Can Use in Your Classroom (p. 81)

## NOAA (Booth #103)

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Saturday, April 13	8:00–9:00 AM	214A, Conv. Center	Update on Climate Education and the Next Generation Science Standards (p. 24)
Saturday, April 13	9:00–10:30 AM	214A, Conv. Center	Lessons from Antarctica: Scientists Showcase Polar Ice Cores and Discuss Climate Research and Engineering (p. 30)
Saturday, April 13	11:30 AM–12:30 PM	214A, Conv. Center	Lunch with Climate Scientists and Education Specialists—Bring Your Own Lunch! (p. 55)
Saturday, April 13	1:30–3:00 PM	214A, Conv. Center	NOAA's Climate Stewards Education Project (CSEP) Part I: Affecting Change Through Education, Collaboration, and Action (p. 69)
Saturday, April 13	3:00–4:30 PM	214A, Conv. Center	NOAA's Climate Stewards Education Project (CSEP) Part II: What Works, What Doesn't, and How to Tell the Difference (p. 83)
Saturday, April 13	4:30–5:30 PM	214A, Conv. Center	Discover Your Changing World with NOAA: Preview New Hands-On Climate Change Activities—Official Rollout! (p. 91)

## Pearson (Booth #200)

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Saturday, April 13	8:00–9:30 AM	006B, Conv. Center	Engaging Students in the Science Classroom (p. 24)
Saturday, April 13	10:00–11:30 AM	006B, Conv. Center	New Tools, New Insights, and New Ways of Understanding Science with <i>Miller &amp; Levine Biology</i> (p. 40)
Saturday, April 13	12 Noon–1:30 PM	006B, Conv. Center	English Language Learners in the Science Class: Integrating Language and Science Learning (p. 56)
Saturday, April 13	2:00–3:30 PM	006B, Conv. Center	Outer Space, Tornadoes, and the Pacific Garbage Patch! Free K–12 Resources and Best Practices (p. 78)
Saturday, April 13	4:00–5:30 PM	006B, Conv. Center	Build the Scaffolding for 21st-Century Skills (p. 90)

## Perimeter Institute for Theoretical Physics (Booth #1002)

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Saturday, April 13	10:00–11:30 AM	212B, Conv. Center	Perimeter Institute: Hands-On Wave-Particle Duality (p. 44)
Saturday, April 13	12 Noon–1:30 PM	212B, Conv. Center	Perimeter Institute: Curved Space-time in the Classroom (p. 58)

## RCSB Protein Data Bank (Booth #1544)

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Saturday, April 13	12 Noon–1:30 PM	214C, Conv. Center	Exploring Proteins and Nucleic Acids at the PDB (p. 58)
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## Sangari Active Science (Booth #534)

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Saturday, April 13	8:00–9:30 AM	204A, Conv. Center	IQWST Tablet Edition: Blending the Effectiveness of Learning-by-Doing with the Power of Connected Mobile Technology (p. 26)
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## Science First®/STARLAB® (Booth #1500)

Saturday, April 13 10:30–11:00 AM Booth #1500, Exhibit Hall Location, Location—Finding Your Way Around the Sky (p. 45)

## Scientific Minds, LLC (Booth #1142)

Saturday, April 13 8:00–9:30 AM 008B, Conv. Center Is Biology a Foreign Language? (p. 26)

## SeaWorld Parks and Entertainment (Booth #1606)

Saturday, April 13 2:00–3:30 PM 008B, Conv. Center Journeys Toward Conservation with Julie Scardina (p. 78)

## Society for Neuroscience (Booth #1400)

Saturday, April 13 12 Noon–1:30 PM 214B, Conv. Center Brain, Behavior, and the Senses in the Next Generation Science Standards (p. 58)

## Southern Methodist University, Caruth Institute for Engineering Education (Booth #1305)

Saturday, April 13 10:00–11:30 AM 214B, Conv. Center *Kids Ahead*, *STEM-Works*, and CSI Camps: Websites and Activities to Support Your Classes (p. 44)

## SparkFun Electronics (Booth #1735)

Saturday, April 13 8:00–9:30 AM 212B, Conv. Center Unleashing Your Students' Inner Inventor—Robots, Video Games, and DIY! (p. 28)

## Spitz, Inc. (Booth #2125)

Saturday, April 13 10:00–11:30 AM 214C, Conv. Center Astronomy Meets U.S. History! (p. 44)  
 Saturday, April 13 2:00–3:30 PM 214C, Conv. Center Astronomy Education—Changing the Rules (p. 81)

## Texas Christian University (Booth #1842)

Saturday, April 13 2:00–3:30 PM 103A, Conv. Center Plate Tectonics Made Fun (p. 80)

## TruGreen's MyBotanicPlanet.com (Booth #1433)

Saturday, April 13 10:00–11:30 AM 204A, Conv. Center Making Science Fun: *MyBotanicPlanet.com* (p. 42)

## U.S. Forest Service (Booth #1936)

Saturday, April 13 10:30–11:30 AM 214A, Conv. Center Bringing Climate Education Closer to Home: U.S. Forest Service Climate Change Education Resources (p. 45)  
 Saturday, April 13 12:30–1:30 PM 214A, Conv. Center ClimateChangeLIVE! Webcasts and Education Resources to Bring Climate Change Education to Your Classroom (p. 66)

## Vernier Software & Technology (Booth #100)

Saturday, April 13 8:00–9:30 AM 210B, Conv. Center Using iPad and Vernier Technology to Enhance Inquiry-based Learning (p. 28)  
 Saturday, April 13 8:00–9:30 AM 210A, Conv. Center Inquiry-based Chemistry with Vernier (p. 28)  
 Saturday, April 13 10:00–11:30 AM 210A, Conv. Center Inquiry-based Biology with Vernier (p. 43)  
 Saturday, April 13 10:00–11:30 AM 210B, Conv. Center Advanced Chemistry with Vernier (p. 43)  
 Saturday, April 13 12 Noon–1:30 PM 210B, Conv. Center Advanced Biology and Biotechnology with Vernier (p. 57)  
 Saturday, April 13 12 Noon–1:30 PM 210A, Conv. Center *Physics with Vernier* (p. 57)  
 Saturday, April 13 2:00–3:30 PM 210A, Conv. Center Advanced Physics with Vernier (p. 80)  
 Saturday, April 13 2:00–3:30 PM 210B, Conv. Center Environmental and Earth Science with Vernier (p. 81)

## W.H. Freeman of Bedford, Freeman & Worth (BFW) Publishers (Booth #934)

Saturday, April 13 8:00–9:30 AM 007D, Conv. Center *Living By Chemistry*: What Shape Is That Smell? (p. 26)

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## Ward's Science (Booth #1316)

Saturday, April 13	8:00–9:30 AM	211, Conv. Center	Middle School Science: Core Concepts Osmosis Lesson (p. 28)
Saturday, April 13	10:00–11:30 AM	211, Conv. Center	Middle School Science: Core Concepts Density Lesson (p. 43)
Saturday, April 13	12 Noon–1:30 PM	211, Conv. Center	Building Readiness in Science: Grades 3–5 (p. 57)
Saturday, April 13	2:00–3:30 PM	211, Conv. Center	Environmental Science: Exploring Ecosystems and Interdependent Relationships (p. 81)
Saturday, April 13	4:00–5:30 PM	211, Conv. Center	High School Biology—Digging Deeper Than Dissection (p. 91)

## WhiteBox Learning (Booth #626)

Saturday, April 13	10:00–11:30 AM	008A, Conv. Center	The “E” in STEM—Connect the Virtual to the Physical (p. 42)
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## WoWiWe Instruction Co. (Booth #1817)

Saturday, April 13	12 Noon–1:30 PM	007B, Conv. Center	Virtual Cell (p. 56)
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## Schedule at a Glance

G = General	M = Middle School	S = Supervision/Administration	T = Teacher Preparation
P = Preschool	H = High School	I = Informal Education	
E = Elementary	C = College	R = Research	

### Biology/Life Science: Saturday

8:00–9:00 AM	E	208, Conv. Center	Literature Lab (p. 14)
8:00–9:00 AM	H–C	201, Conv. Center	Addressing the Unique Needs of Diverse Learners in Introductory Biology Curricula, Particularly Those with Learning Disabilities (p. 14)
8:00–9:00 AM	M	Travis C/D, Grand Hyatt	Genetics for Middle School (p. 22)
8:00–9:00 AM	H	Bonham B, Grand Hyatt	DuPont Session: DuPont Presents “Natural Selection and Antibiotic-resistant Bacteria” (p. 22)
8:00–9:00 AM	M–H	Alamo Salon D, Marr. Riverwalk	Adding Inquiry and Student Understanding of Photosynthesis (p. 24)
8:00–9:00 AM	H	Alamo Salon F, Marr. Riverwalk	Five Practices for Orchestrating Productive Science Discussions (p. 18)
8:00–9:30 AM	5–12	102B, Conv. Center	DNA Replication and Transcription—No More Gumdrops and Toothpicks! (p. 26)
8:00–9:30 AM	6–8	203A, Conv. Center	The Full Course (p. 26)
8:00–9:30 AM	9–12	207B, Conv. Center	Genetics with <i>Drosophila</i> (p. 27)
8:00–9:30 AM	5–8	211, Conv. Center	Middle School Science: Core Concepts Osmosis Lesson (p. 28)
8:00–9:30 AM	8–12	008B, Conv. Center	Is Biology a Foreign Language? (p. 26)
8:00–9:30 AM	9–12	217B, Conv. Center	Finding Funds for Biotech: A Grant-writing Workshop (p. 28)
8:00 AM–12 Noon	C	Bowie B, Grand Hyatt	NSTA/SCST Symposium: Using Biotechnology as an Interdisciplinary STEM Education Teaching Strategy (p. 29)
9:30–10:30 AM	H	Alamo Salon F, Marr. Riverwalk	Menhaden: A Window into STEM (p. 37)
9:30–10:30 AM	H–C	Seguin A, Grand Hyatt	Genetics Gets Personal: Teaching the Ethical, Legal, and Social Issues in Personal Genetics (p. 36)
9:30–10:30 AM	M–H	Alamo Salon D, Marr. Riverwalk	How to Weigh Your Pterosaur (p. 39)
9:30–10:30 AM	G	Salon K, Marr. Rivercenter	AMSE Session: Science Education Equity Discoveries (SEEDs): Discussions About Social Justice Education Enactment for Next Generation Special Populations (p. 37)
9:30–10:30 AM	E	202B, Conv. Center	Whoooo Knew? Assessment Strategies for Inquiry Science (p. 38)
9:30–10:30 AM	G	Alamo Salon E, Marr. Riverwalk	Kids Learning Life Science in a Virtual World (p. 37)
10:00–11:00 AM	6–C	217B, Conv. Center	Science, Fashion, and Fun! Genes in a Bottle™ Kit (p. 40)
10:00–11:30 AM	K–5	204A, Conv. Center	Making Science Fun: <i>MyBotanicPlanet.com</i> (p. 42)
10:00–11:30 AM	9–C	210A, Conv. Center	Inquiry-based Biology with Vernier (p. 43)
10:00–11:30 AM	6–8	006A, Conv. Center	FDA Food Science Workshop for Middle School (p. 40)
10:00–11:30 AM	9–12	207B, Conv. Center	Strawberry DNA and Molecular Models (p. 43)
10:00–11:30 AM	9–12	204B, Conv. Center	Extra, Extra! Read All About It! Taking Biology from the News to the Classroom (p. 43)
10:00–11:30 AM	9–12	006B, Conv. Center	New Tools, New Insights, and New Ways of Understanding Science with <i>Miller &amp; Levine Biology</i> (p. 40)
10:30 AM–12 Noon	G	Grand Blrm. C3, Conv. Center	Research in Practice (p. 46)
11:00 AM–12 Noon	G	Grand Blrm. C1, Conv. Center	A Lifetime of Nature and Photography Education (p. 46)
11:00 AM–12 Noon	E–H	Alamo Salon E, Marr. Riverwalk	Scaffolding Inquiry in the Classroom Through the Use of Model Organisms ( <i>Daphnia magna</i> ) (p. 51)
11:00 AM–12 Noon	M–H	Alamo Salon F, Marr. Riverwalk	DNA—5Es, Models, and Biotech (p. 51)
11:00 AM–12 Noon	G	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Uncovering K–12 Students’ (and Teachers’) Ideas on Life Science (p. 50)
11:00 AM–12 Noon	G	Alamo Salon C, Marr. Riverwalk	Using Science as a Tool for Reading and Writing Instruction (p. 54)
11:00 AM–12 Noon	M–H	Alamo Salon D, Marr. Riverwalk	Making Connections with Planaria! (p. 54)
11:00 AM–12 Noon	E	208, Conv. Center	Feed the Octopus (p. 47)
12 Noon–1:30 PM	5–C	007D, Conv. Center	Bringing Real Neuroscience (Spiking Neurons!) into Your Classroom (p. 56)
12 Noon–1:30 PM	9–C	007B, Conv. Center	Virtual Cell (p. 56)
12 Noon–1:30 PM	7–C	214C, Conv. Center	Exploring Proteins and Nucleic Acids at the PDB (p. 58)
12 Noon–1:30 PM	9–C	210B, Conv. Center	Advanced Biology and Biotechnology with Vernier (p. 57)
12 Noon–1:30 PM	K–12	207B, Conv. Center	Introduction to Wisconsin Fast Plants® (p. 57)

## Schedule at a Glance Biology/Life Science, cont.

12 Noon–1:30 PM	6–C	214B, Conv. Center	Brain, Behavior, and the Senses in the Next Generation Science Standards (p. 58)
12:30–1:30 PM	M–H	Alamo Salon D, Marr. Riverwalk	Of Sperm and Saliva...Using Forensic Enzymology to Teach Biology and Forensics! (p. 66)
12:30–1:30 PM	H–C	Seguin A, Grand Hyatt	An In-Country Ecotour: A “Pumped-Up Field Trip” or an Indicator of Behavioral Change? (p. 62)
12:30–1:30 PM	G	Alamo Salon E, Marr. Riverwalk	Powerful and Free Simulations for Biology Teaching (p. 63)
12:30–1:30 PM	H	Alamo Salon F, Marr. Riverwalk	Science and Engineering: What’s the Difference and Why Should We Care? (p. 63)
12:30–1:30 PM	M–C	Alamo Salon C, Marr. Riverwalk	Incorporating the Claim, Evidence, and Reasoning Framework into an Engaging Computer Game and Project-based Science Curriculum Unit (p. 66)
2:00–3:00 PM	H/S	Alamo Salon F, Marr. Riverwalk	Infusing Engineering as a Practice and as Context (p. 74)
2:00–3:00 PM	E–M	208, Conv. Center	Hands-On Nature of Science (p. 76)
2:00–3:00 PM	M–H	Alamo Salon D, Marr. Riverwalk	Middle School Medicine (p. 77)
2:00–3:30 PM	5–C	007D, Conv. Center	Bringing Real Neuroscience (Spiking Neurons!) into Your Classroom (p. 78)
2:00–3:30 PM	9–12	204B, Conv. Center	From Big Bird to Bird Brains—How Fun with Our Feathered Friends Helps Students Learn Science (p. 80)
3:30–4:30 PM	E–M	202B, Conv. Center	Exploring and Understanding the New Science Framework and Common Core Standards (p. 84)
3:30–4:30 PM	H	Alamo Salon F, Marr. Riverwalk	Cyberlearning: Bringing the Science Classroom Closer to STEM (p. 87)
4:00–5:30 PM	7–12	211, Conv. Center	High School Biology—Digging Deeper Than Dissection (p. 91)
5:00–6:00 PM	E	208, Conv. Center	The End of the Food Chain: An Experience in Extinction! (p. 95)
5:00–6:00 PM	I	Alamo Salon F, Marr. Riverwalk	Exploring Birds and Buds: Citizen Science for the School Yard (p. 94)
5:00–6:00 PM	I	Alamo Salon D, Marr. Riverwalk	Thar She Blows! Introducing Marine Mammals to Your Class (p. 96)

### Biology/Life Science: Sunday

8:00–9:00 AM	M–H	209, Conv. Center	Nuts, Pasta, and Goldfish...Oh My! (p. 104)
8:00–9:00 AM	M–C	207B, Conv. Center	American Society for Microbiology (ASM) and NASA: Microbes and Spaceflight (p. 102)
8:00–9:00 AM	G	204A, Conv. Center	“Lettuce” Show You How to Garden with Young Children (p. 102)
8:00–9:00 AM	M–H	206A, Conv. Center	Body Systems: Hands-On Activities (p. 104)
8:00–9:00 AM	P–E	208, Conv. Center	Research, Inquire, Explore—A World of Animals (p. 102)
9:30–10:30 AM	H	206B, Conv. Center	Minds On, Bodies On! Teaching Biology Is a Whole-Body Experience (p. 107)
9:30–10:30 AM	P–E	208, Conv. Center	Penguins—Not So Black and White! (p. 106)
9:30–10:30 AM	M–C	204A, Conv. Center	Genetics: A Dime a Dozen (p. 106)
9:30–10:30 AM	G	205, Conv. Center	Coyote vs. Road Runner: Why Acme Anvils Aren’t Needed (p. 107)
9:30–10:30 AM	M–H	202B, Conv. Center	Science as Inquiry: Linking Instruction with Assessment (p. 105)
11:00 AM–12 Noon	H	206A, Conv. Center	Student Pattern Finding Through Biology Labs and Literacy Probes (p. 110)
11:00 AM–12 Noon	H–C	209, Conv. Center	Evolution Inquiry and Modeling in AP Biology with BioQUEST (p. 111)
11:00 AM–12 Noon	M–H	206B, Conv. Center	Digital Resources from the HudsonAlpha Institute for Biotechnology (p. 110)
11:00 AM–12 Noon	M–H	Presidio B, Grand Hyatt	NSTA Press® Session: Teaching and Learning Biology Through Scientific Argumentation (p. 109)
11:00 AM–12 Noon	G	205, Conv. Center	Teaching Biology with Graphic Organizers, Foldits, and Sign Language (p. 110)
11:30 AM–12 Noon	G	204A, Conv. Center	Using Technology in the Classroom (p. 111)

### Chemistry/Physical Science: Saturday

8:00–9:00 AM	M–C	Alamo Salon B, Marr. Riverwalk	Lotions, Potions, and Scrubs: Polymer Science in Cosmetics (p. 18)
8:00–9:00 AM	H–C	Lone Star Blrm. B, Grand Hyatt	Lost in Translation: Exploring Protein Synthesis with Physical Models (p. 22)
8:00–9:30 AM	7–C	008A, Conv. Center	Chemi-paloosa: Demonstrations and Hands-On Activities That Really Get a Reaction! (p. 26)
8:00–9:30 AM	9–12	007D, Conv. Center	<i>Living By Chemistry</i> : What Shape Is That Smell? (p. 26)
8:00–9:30 AM	9–C	210A, Conv. Center	Inquiry-based Chemistry with Vernier (p. 28)

## Schedule at a Glance Chemistry/Physical Science, cont.

9:30–10:30 AM	M–H	Travis, Marr. Riverwalk	Bioplastics: Going from Synthetic to Natural Polymers (p. 37)
9:30–10:30 AM	M–C	Alamo Salon A, Marr. Riverwalk	Simple to Sublime—Four Labs That Reveal Big Science (p. 39)
9:30–10:30 AM	G	Lone Star Blrm. B, Grand Hyatt	NSTA Press® Session: Whole Class Inquiry, The Story Continues (p. 35)
10:00–11:30 AM	9–C	210B, Conv. Center	Advanced Chemistry with Vernier (p. 43)
10:00–11:30 AM	9–12	103A, Conv. Center	Promote Inquiry Using Chemistry Demonstrations from Flinn (p. 42)
11:00 AM–12 Noon	H	Alamo Salon B, Marr. Riverwalk	All It Takes Is a Little Data! (p. 51)
11:00 AM–12 Noon	H	Travis, Marr. Riverwalk	Incorporating the Common Core State Standards (CCSS) for Reading and Writing into Introductory Chemistry (p. 51)
12 Noon–1:30 PM	9–12	206A, Conv. Center	Elements for Success: Exploring Carolina Chemistry (p. 57)
12:30–1:30 PM	E	216A, Conv. Center	Inquiry in Action: Investigating Matter Through Inquiry (p. 64)
12:30–1:30 PM	H–C/S	Republic A, Grand Hyatt	Enhancing Formal Assessment Through Ubiquitous Presenter and Process-Oriented Guided Inquiry Learning (POGIL) (p. 62)
12:30–1:30 PM	H	Travis, Marr. Riverwalk	Enhancing Chemistry Activities to Develop Scientific and Engineering Practices (p. 63)
12:30–1:30 PM	H–C	Lone Star Blrm. B, Grand Hyatt	Understanding the Revised AP Chemistry Course: Science Practices for AP Chemistry (p. 65)
12:30–1:30 PM	H	Alamo Salon B, Marr. Riverwalk	Building Up the Skills for Stoichiometry from Day One (p. 63)
12:30–1:30 PM	H	Alamo Salon A, Marr. Riverwalk	Polymer Activities for High School Chemistry Teachers (p. 66)
2:00–3:00 PM	H	Alamo Salon A, Marr. Riverwalk	ChemVlab+: A Virtual Laboratory for Connecting Chemistry Concepts and Procedures (p. 77)
2:00–3:00 PM	H/S	Travis, Marr. Riverwalk	Engaging Students in Chemistry Outside the Classroom: A Look at ChemClub (p. 74)
2:00–3:00 PM	M–C	Alamo Salon B, Marr. Riverwalk	Powerful and Free Molecular Simulations for Chemistry Teaching (p. 74)
2:00–3:00 PM	H	Alamo Salon C, Marr. Riverwalk	“Identifying” CSI Chemistry: Drugs, DNA, and Fingerprints (p. 77)
3:30–4:30 PM	H	Alamo Salon A, Marr. Riverwalk	Chemistry as Fun and Games (p. 90)
3:30–4:30 PM	M	Lone Star Blrm. F, Grand Hyatt	NMLSTA Session: Exploring Engineering Applications of Evaporation and Condensation in Middle School Science (p. 89)
4:00–4:30 PM	M–H	Alamo Salon B, Marr. Riverwalk	Minute to Win It! Science Edition (p. 90)
4:00–5:30 PM	9–12	204B, Conv. Center	Differentiating Instruction in Today’s Chemistry Classroom (p. 91)
5:00–6:00 PM	H	Alamo Salon A, Marr. Riverwalk	Biotechnology: Making Biodiesel in the Chemistry Classroom (p. 96)
5:30–6:00 PM	M–H	Alamo Salon B, Marr. Riverwalk	Have You Flipped? It’ll Give You More Time for Practice, Experiments, Demos, and Group Projects (p. 96)

### Chemistry/Physical Science: Sunday

8:00–9:00 AM	G	215, Conv. Center	Score a Winning Classroom (p. 104)
8:00–9:00 AM	M–H	216B, Conv. Center	Using Games to Formatively Assess Students’ Conceptual Understanding (p. 103)
9:30–10:30 AM	E–M	216A, Conv. Center	Modeling Inquiry Activities for Middle School Science Classroom (p. 106)
9:30–10:30 AM	M–H	216B, Conv. Center	Survival Is Not Enough: Your First Years as a Chemistry Teacher (p. 106)
11:00 AM–12 Noon	H	216A, Conv. Center	Mix It Up with Chemistry Games! (p. 111)

### Earth/Space Science: Saturday

8:00–9:00 AM	E–H	Blrm. A, Conv. Center	NESTA Session: Activities in Earth System Science (p. 20)
8:00–9:00 AM	P–E	001B, Conv. Center	Engaging Elementary Students in Earth System Science (p. 19)
8:00–9:00 AM	G	101A, Conv. Center	Under Pressure: Activities Promoting an Understanding of Air Pressure and Other Atmospheric Processes That Create Severe Weather (p. 20)
8:00–9:00 AM	M	003A, Conv. Center	Sun Study with NASA (p. 14)
8:00–9:00 AM	E	002, Conv. Center	Weathering and Erosion for Elementary Teachers (p. 20)
8:00–9:00 AM	6–12	214A, Conv. Center	Update on Climate Education and the Next Generation Science Standards (p. 24)
9:00–10:30 AM	6–12	214A, Conv. Center	Lessons from Antarctica: Scientists Showcase Polar Ice Cores and Discuss Climate Research and Engineering (p. 30)

## Schedule at a Glance Earth/Space Science, cont.

9:30–10:30 AM	E	001A, Conv. Center	NASA’s “Reading, Writing & Rings”: Using Saturn to Teach Science and Language Arts (p. 38)
9:30–10:30 AM	I	213B, Conv. Center	Using a Human Orrery to Address Prior Knowledge About the Solar System (p. 38)
9:30–10:30 AM	G	101A, Conv. Center	The Art of Scientific Data (p. 32)
9:30–10:30 AM	E–H	Blrm. A, Conv. Center	NESTA Session: Exploring Planetary Science and Astronomy—What Would Galileo Do? (p. 39)
9:30–10:30 AM	I	001B, Conv. Center	Family Astronomy: The Panel (p. 38)
9:30–10:30 AM	M–H	003A, Conv. Center	Beyond the Slinky: Sequencing Activities, Earthquake Visualizations, and Demonstrations to Enhance Student Learning of Seismic Waves (p. 32)
10:00–11:30 AM	5–C	214C, Conv. Center	Astronomy Meets U.S. History! (p. 44)
10:00–11:30 AM	6–8	203A, Conv. Center	The Changing Earth (p. 42)
10:30–11:00 AM	K–4	Booth #1500, Exh. Hall	Location, Location—Finding Your Way Around the Sky (p. 45)
11:00 AM–12 Noon	G	Blrm. B, Group 1, Conv. Center	Informal Science Day Session: What’s a Planet and Why Is Pluto Not in the Planet Club Anymore? (p. 53)
11:00 AM–12 Noon	G	101A, Conv. Center	Grounding Science with Soil (p. 52)
11:00 AM–12 Noon	P	001B, Conv. Center	Let’s Grow Together (p. 52)
11:00 AM–12 Noon	G	001A, Conv. Center	Astronomy for Teachers (p. 52)
11:00 AM–12 Noon	E–H	Blrm. A, Conv. Center	NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon (p. 53)
11:00 AM–12 Noon	E–M	003A, Conv. Center	Aerospace Adventurers: Launching an After-school Aviation and Space Enrichment Program (p. 47)
11:00 AM–12 Noon	G	207A, Conv. Center	Climate Models: Everything You Ever Wanted to Know, Ask, and Teach (p. 52)
11:00 AM–12 Noon	E	002, Conv. Center	Building Vocabulary for Elementary Earth Science (p. 52)
12:30–1:30 PM	E	002, Conv. Center	Weathering Ways and Just Chalk It Up to Weathering (p. 64)
12:30–1:30 PM	I	003A, Conv. Center	Using Online Resources to Teach About Climate Change (p. 60)
12:30–1:30 PM	M–H	001B, Conv. Center	Rockets—Experimenting with Projectile Flight (p. 64)
12:30–1:30 PM	I	Blrm. A, Conv. Center	NESTA Session: NESTA Advances in Earth and Space Science Lunchtime Lecture (p. 59)
1:30–3:00 PM	6–12	214A, Conv. Center	NOAA’s Climate Stewards Education Project (CSEP) Part I: Affecting Change Through Education, Collaboration, and Action (p. 69)
2:00–3:00 PM	I	001B, Conv. Center	Engaging Students with NASA’s MAVEN Mission (p. 75)
2:00–3:00 PM	M–H	Blrm. A, Conv. Center	NESTA Session: Our Changing Planet (p. 76)
2:00–3:00 PM	E–M	002, Conv. Center	Earth Processes: Inquiries into Change (p. 75)
2:00–3:00 PM	E–H	001A, Conv. Center	An Active Sun: Solar Flares and Coronal Mass Ejections (p. 75)
2:00–3:00 PM	M–H/I	101A, Conv. Center	Journey to the Edge of the Solar System (p. 75)
2:00–3:00 PM	E–H	Travis C/D, Grand Hyatt	Expedition Earth and Beyond—Using Earth for Planetary Comparisons (p. 77)
2:00–3:00 PM	M–H	003A, Conv. Center	Using Kites to Collect Atmospheric Data and Do Remote Sensing (p. 70)
2:00–3:00 PM	H–C/I	Lone Star Blrm. B, Grand Hyatt	Sunscope (p. 71)
2:00–3:30 PM	G	214C, Conv. Center	Astronomy Education—Changing the Rules (p. 81)
2:00–3:30 PM	6–12	007B, Conv. Center	Shake Up Your Lessons with Standard Deviants Online—Two Weirdos Show You How (p. 78)
2:00–3:30 PM	6–8	103A, Conv. Center	Plate Tectonics Made Fun (p. 80)
3:00–4:30 PM	6–12	214A, Conv. Center	NOAA’s Climate Stewards Education Project (CSEP) Part II: What Works, What Doesn’t, and How to Tell the Difference (p. 83)
3:30–4:30 PM	E	002, Conv. Center	Take a CosmoQuest Adventure in Solar System Geology! (p. 88)
3:30–4:30 PM	M	003A, Conv. Center	Tracking Water from Space: Analyzing and Interpreting Data Using Visualizations and Scientific Data Sets (p. 84)
3:30–4:30 PM	G	Blrm. A, Conv. Center	NESTA Session: National Earth Science Teachers Association Rock and Mineral Raffle (p. 89)
3:30–4:30 PM	P–M/I	001B, Conv. Center	Clear Skies Ahead: Clearing Up Confusion on Clouds (p. 88)
3:30–4:30 PM	G	101A, Conv. Center	Planets—More Than Memorizing Factoids! (p. 88)
3:30–4:30 PM	G	Tex. Blrm. A/B, Gr 4, Gr. Hyatt	Teacher Researcher Day Session: Beating the Challenges of Climate Literacy (p. 86)
3:30–4:30 PM	M–H/I	001A, Conv. Center	NASA’s Engineer a Satellite (p. 88)

## Schedule at a Glance Earth/Space Science, cont.

4:30–5:30 PM	5–12	214A, Conv. Center	Discover Your Changing World with NOAA: Preview New Hands-On Climate Change Activities—Official Rollout! (p. 91)
5:00–5:30 PM	M–C	101A, Conv. Center	Scaffolding Online Data to Improve Students’ Understanding of Local Tides (p. 91)
5:00–6:00 PM	E/I	002, Conv. Center	Using Engaging, Inquiry-based Hands-On Activities to Teach Students About the Water Cycle! (p. 95)
5:00–6:00 PM	E–H	001A, Conv. Center	Gadgets, Gizmos, and Contraptions: Engineering on the Moon (p. 94)
5:00–6:00 PM	G	001B, Conv. Center	From Earth to the Hubble Deep Field: Exploring the Scale of the Cosmos (p. 94)

### Earth/Space Science: Sunday

8:00–9:00 AM	E	006A, Conv. Center	Rocks Are Rockin’ in the Elementary Classroom (p. 103)
8:00–9:00 AM	E	001B, Conv. Center	NASA’s “Our Solar System Through the Eyes of Scientists (p. 103)
8:00–9:00 AM	M–H	003A, Conv. Center	Connecting Students Virtually: Experience with the GLOBE Program’s From Learning to Research Project (p. 101)
8:00–9:00 AM	M–H	003A, Conv. Center	Leverage Online Maps to Teach Common Core Concepts in Earth Science (p. 101)
8:00–9:00 AM	E–H	101A, Conv. Center	New Horizons: The Little Spacecraft That Could (p. 104)
8:00–9:00 AM	M–H/S	003B, Conv. Center	Effectively Evaluating Student Achievement and Interest in Middle School Science Classes (p. 101)
8:00–9:00 AM	E–M	002, Conv. Center	Bringing Astronomy Activities and Science Content to Girls Locally and Nationally: A Girl Scout and NIRCcam Collaboration (p. 103)
9:30–10:30 AM	G	101A, Conv. Center	Earth Science Models—Scale or Functional? (p. 107)
9:30–10:30 AM	G	003B, Conv. Center	The AIAA STEM K–12 Educator Academy (p. 105)
9:30–10:30 AM	E–M	002, Conv. Center	Newton’s Laws Through Rocketry (p. 107)
9:30–10:30 AM	E	001B, Conv. Center	NASA’s Ready-to-Go Solar Energy and Solar Science Activities for the K–5 Classroom (p. 107)
9:30–10:30 AM	M–H	003A, Conv. Center	NASA’s INSPIRE Project (p. 105)
9:30–10:30 AM	G	207A, Conv. Center	Google Earth in the Classroom (p. 106)
9:30–10:30 AM	P–E	006A, Conv. Center	I Love Rocks: Lessons for Young Children (p. 107)
9:30–10:30 AM	I	001A, Conv. Center	JetStream: An Online School for Weather (p. 107)
11:00 AM–12 Noon	E–H	006A, Conv. Center	Astronomy: A Trip Through the Solar System in Activities (p. 110)
11:00 AM–12 Noon	E	001B, Conv. Center	Spinning Around Earth, Moon, and Sun (p. 110)
11:00 AM–12 Noon	H–C/I	001A, Conv. Center	Stellar Classification (p. 109)
11:00 AM–12 Noon	E	002, Conv. Center	Scale Models in Astronomy (p. 110)
11:00 AM–12 Noon	M–C	003B, Conv. Center	NASA’s SOFIA, Cosmic Evolution, and Airborne Astronomy Ambassadors (p. 108)
11:00 AM–12 Noon	G	101A, Conv. Center	Flying on SOFIA with the Airborne Astronomy Ambassadors Program (p. 109)
11:00 AM–12 Noon	M	003A, Conv. Center	Addressing Next Generation Science Standards Through Innovative Global Science Inquiry (p. 108)

### Environmental Science: Saturday

8:00–8:30 AM	E	202A, Conv. Center	Climate Change...on Our Playground? (p. 14)
8:00–9:00 AM	G	Crockett A, Grand Hyatt	Data in the Classroom—Investigate Earth Processes Using Real Data (p. 16)
8:00–9:00 AM	H–C/I	Seguin A, Grand Hyatt	Bad Acid: Engaging Students in an Inquiry-based Online Ocean Acidification Study (p. 17)
8:00–9:00 AM	M	Lone Star Blrm. E, Grand Hyatt	A Whiteboard Isn’t a Clean Slate! (p. 16)
8:00–9:30 AM	9–12	006A, Conv. Center	AP Environmental Water Quality Assessment Curriculum (p. 24)
10:00–11:30 AM	9–12	206B, Conv. Center	Connecting Water Quality and Soil Properties Concepts in Your Science Labs (p. 43)
10:30–11:30 AM	6–12	214A, Conv. Center	Bringing Climate Education Closer to Home: U.S. Forest Service Climate Change Education Resources (p. 45)

## Schedule at a Glance Environmental Science, cont.

11:00 AM–12 Noon	M–H	Bonham C, Grand Hyatt	Students Assessing Their Local Air Quality: A Mini-Unit (p. 48)
11:00 AM–12 Noon	H	Bonham C, Grand Hyatt	Good Energy Policy? Bad for the Environment? Neither/Both? You Decide! (p. 48)
11:00 AM–12 Noon	P	201, Conv. Center	Developing Inquiry with Young Learners: Outdoor Explorations with Diverse Audiences (p. 47)
11:30 AM–12:30 PM	6–12	214A, Conv. Center	Lunch with Climate Scientists and Education Specialists—Bring Your Own Lunch! (p. 55)
12:30–1:30 PM	6–12	214A, Conv. Center	ClimateChangeLIVE! Webcasts and Education Resources to Bring Climate Change Education to Your Classroom (p. 66)
12:30–1:30 PM	E	208, Conv. Center	The Outdoor Study Area: An Integrated Learning Activity (p. 64)
12:30–1:30 PM	E	202A, Conv. Center	Into the Woods for Environmental Literacy (p. 64)
12:30–1:30 PM	M–H	Tex. Blrm. A/B, Gr 5, Gr Hyatt	Teacher Researcher Day Session: Google Earth, ImageJ, and GIS: Tools to Investigate and Communicate About Environmental Change (p. 62)
2:00–2:30 PM	M–H	Bonham C, Grand Hyatt	Using Birds to Teach About Science (p. 69)
2:00–3:30 PM	G	008B, Conv. Center	Journeys Toward Conservation with Julie Scardina (p. 78)
2:00–3:30 PM	7–12	211, Conv. Center	Environmental Science: Exploring Ecosystems and Interdependent Relationships (p. 81)
3:30–4:30 PM	H–C/I	Seguin A, Grand Hyatt	Are Your Students Ready for the International Student Carbon Footprint Challenge (ISCFC)? (p. 86)
3:30–4:30 PM	C/S	Tex. Blrm. A/B, Gr 5, Gr Hyatt	Teacher Researcher Day Session: Implementing National EE Curriculum Training into Methods Courses (p. 86)
3:30–4:30 PM	P–E	207A, Conv. Center	iPads Go Outdoors: Young Students Become Citizen Scientists (p. 84)
3:30–4:30 PM	E	202A, Conv. Center	Growing Science Achievement with the Junior Master Gardener Program (p. 88)
3:30–4:30 PM	E	208, Conv. Center	Health and Nutrition in the Garden with Junior Master Gardener Program (p. 88)
5:00–6:00 PM	G	Salon B, Marr. Rivercenter	Intriguing Animals That Slither, Slide, Run, Hide, and Musk (p. 96)
5:00–6:00 PM	G	Bonham C, Grand Hyatt	It Is Easy Being Green (p. 92)

### Environmental Science: Sunday

8:00–9:00 AM	M–H	006B, Conv. Center	Using Scientific Field Campaigns to Learn About Weather and Climate (p. 103)
8:00–9:00 AM	E–H	006–C Conv. Center	Strategies for Including Culture and Community in Science Education (p. 101)
11:00 AM–12 Noon	G	006B, Conv. Center	Citizen Science: Systems Academy for Young Scientists (SAYS) (p. 108)
11:00 AM–12 Noon	E–M	208, Conv. Center	Combining Engineering and Ecology (p. 110)

### Integrated/General: Saturday

8:00–9:00 AM	G	Salon C, Marr. Rivercenter	Bringing EARTH to STEM Education and the Next Generation Science Standards (p. 23)
8:00–9:00 AM	G	Salon J, Marr. Rivercenter	The Power of the Prepared Environment (p. 18)
8:00–9:00 AM	E–M	217A, Conv. Center	What Does Technology Have to Do with Problem-Based Learning? (p. 20)
8:00–9:00 AM	M	Travis B, Grand Hyatt	Using GPS Units to Connect the Classroom to the Students' World (p. 18)
8:00–9:00 AM	E	217D, Conv. Center	Visual Vocabulary (p. 20)
8:00–9:00 AM	P–E	101B, Conv. Center	The Truth About Spiders Is Not What You Think! (p. 14)
8:00–9:00 AM	P–E	213B, Conv. Center	Oobleck, Slime, and Dancing Spaghetti: Using Children's Literature to Enhance Your Science Curriculum (p. 20)
8:00–9:00 AM	G	Republic A, Grand Hyatt	Timeless (p. 17)
8:00–9:00 AM	G	Lone Star Blrm. F, Grand Hyatt	Perspectives on the Next Generation Science Standards: Thoughts from Two Teacher/Writer Members of the NGSS Writing Team (NGSS @ NSTA) (p. 17)
8:00–9:00 AM	M–H	Salon L, Marr. Rivercenter	How'd I Do? Student Metacognition Through Standards-based Assessment (p. 18)
8:00–9:00 AM	M–H	Salon D, Marr. Rivercenter	Data Aggregation Without the Aggravation (p. 23)

## Schedule at a Glance Integrated/General Science, cont.

8:00–9:00 AM	E–M	001A, Conv. Center	Scaffolding STEM with Stemples™ in Elementary Science (p. 19)
8:00–9:00 AM	G	Crockett C, Grand Hyatt	The Fourth “R”: Using “R” in STEM Courses (p. 16)
8:00–9:00 AM	G	Lone Star Blrm. D, Grand Hyatt	The Organized Binder: Creating Powerful Learning Communities (p. 22)
8:00–9:00 AM	H–C	207A, Conv. Center	CPR: Revive Writing in the Science Classroom Without Killing Yourself (p. 14)
8:00–9:00 AM	G	Mission B, Grand Hyatt	NMLSTA Session: Win Big! Write a Grant (p. 17)
8:00–9:00 AM	E–H	Lone Star Blrm. C, Grand Hyatt	Robotics in STEM Education (p. 22)
8:00–9:00 AM	E–M	216B, Conv. Center	The Explorer’s Club: Let’s Design and Invent (p. 16)
8:00–9:00 AM	G	Conf. Room 11, Marr. Rivercenter	Professional Development Through the Eyes of Einstein Fellows (p. 18)
8:00–9:00 AM	E–M	202B, Conv. Center	Developing Science Assessments That Support Inquiry (p. 20)
8:00–9:00 AM	E–M	Travis A, Grand Hyatt	NSELA Session: CCSS and Interactive Science Note Booking: A Perfect Match (NGSS @ NSTA) (p. 18)
8:00–9:00 AM	P–E	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Picture Not Faking It! Using Trade Books and Activities to Understand Buoyancy (p. 22)
8:00–9:00 AM	G	Republic B, Grand Hyatt	Inquiry Science and Active Reading: Engagement and Interaction Across the Curriculum (p. 22)
8:00–9:00 AM	G	Crockett D, Grand Hyatt	Making Thinking Visible Through Authentic Problem-Based Learning (PBL) and Beyond (p. 16)
8:00–9:00 AM	E–M	215, Conv. Center	Integrated Math and Science Education Through Science Education and Quantitative Literacy (SEQL) (p. 16)
8:00–9:00 AM	H	Salon M, Marr. Rivercenter	But I Teach High School Science, Not English Language! (p. 23)
8:00–9:00 AM	G	Crockett C, Grand Hyatt	Mobile Media as a STEM Tool (p. 16)
8:00–9:00 AM	E–M	216B, Conv. Center	Starting a Successful Science Club (p. 16)
8:00–9:00 AM	M–H/I	Crockett B, Grand Hyatt	Putting Science on the (Google) Map (p. 16)
8:00–9:00 AM	P–E	213A, Conv. Center	Building a Foundation Through Children’s Literature (p. 16)
8:00–9:30 AM	9–12	209, Conv. Center	The Dirty Job of Teaching Just Got Easier with Discovery High School Science Techbook (p. 27)
8:00–9:30 AM	7–C	212B, Conv. Center	Unleashing Your Students’ Inner Inventor—Robots, Video Games, and DIY! (p. 28)
8:00–9:30 AM	K–3	206B, Conv. Center	GEMS® Sequences: Scientific Argumentation and the Common Core (p. 27)
8:00–9:30 AM	6–9	204A, Conv. Center	IQWST Tablet Edition: Blending the Effectiveness of Learning-by-Doing with the Power of Connected Mobile Technology (p. 26)
8:00–9:30 AM	3–11	205, Conv. Center	Teaching Science with Toys and Treats (p. 27)
8:00–9:30 AM	3–C	210B, Conv. Center	Using iPad and Vernier Technology to Enhance Inquiry-based Learning (p. 28)
8:00–9:30 AM	K–8	006B, Conv. Center	Engaging Students in the Science Classroom (p. 24)
8:00–9:30 AM	K–8	204B, Conv. Center	Misconception Mania: Exciting and Engaging Ways to Address Common Misunderstandings in K–8 Science (p. 26)
9:30–10:00 AM	M–H	Salon D, Marr. Rivercenter	Web 2.0 Technologies in the Science Classroom (p. 32)
9:30–10:30 AM	M–H/S	Salon L, Marr. Rivercenter	Making Inquiry the Curriculum for Science: A Standards-based Approach to Assessing Student Learning (p. 37)
9:30–10:30 AM	E–M/I	202A, Conv. Center	Dazzling Deceptions: Discrepant Events That Delight and Mystify! (p. 32)
9:30–10:30 AM	G	Salon J, Marr. Rivercenter	Making All That Science Content Make Sense (p. 37)
9:30–10:30 AM	E–H	Lone Star Blrm. C, Grand Hyatt	Graphs: The Point of Integration for STEM (p. 39)
9:30–10:30 AM	E–M/I	216B, Conv. Center	Using Concept Maps to Document Program Impact (p. 34)
9:30–10:30 AM	H	Salon M, Marr. Rivercenter	Reforming My Science Teacher Education to Incorporate Asian Teaching Methods of Quality Over Quantity (p. 37)
9:30–10:30 AM	E	217D, Conv. Center	The Power of Scientists’ Stories in Teaching (p. 38)
9:30–10:30 AM	E	101B, Conv. Center	Bring Science to Life with Technology (p. 32)
9:30–10:30 AM	E–M	217A, Conv. Center	Insight into Inquiry (p. 38)
9:30–10:30 AM	E–M	216B, Conv. Center	Using Before, During, and After Assessment (p. 34)
9:30–10:30 AM	G	Travis A, Grand Hyatt	NSELA Session: Knowing What We Don’t Know: A Probative Formative Assessment Process (p. 36)
9:30–10:30 AM	E	213A, Conv. Center	To iPads and Beyond! (p. 33)
9:30–10:30 AM	G	Conf. Rm. 11, Marr. Rivercenter	Psychology: The Gateway Science (p. 36)
9:30–10:30 AM	G	Crockett A, Grand Hyatt	G.A.M.E.S.S.: Getting Activated Motivated Enthusiastic Student Success (p. 34)
9:30–10:30 AM	M	Travis B, Grand Hyatt	NASA Across the Curriculum (p. 36)

## Schedule at a Glance Integrated/General Science, cont.

9:30–10:30 AM	H/I	Salon M, Marr. Rivercenter	English Language Learners and Science (p. 37)
9:30–10:30 AM	G	Crockett D, Grand Hyatt	EZ Rubrics (p. 35)
9:30–10:30 AM	G	Texas Blrm. A/B, Grand Hyatt	Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Overview of Teacher Researchers (p. 39)
9:30–10:30 AM	E	215, Conv. Center	The Importance of Teaching Science in K–2 (p. 38)
9:30–10:30 AM	E–H	Crockett B, Grand Hyatt	Interactive AppBooks for Science (p. 34)
9:30–10:30 AM	E–H	Crockett D, Grand Hyatt	Standardized Tests Put to Good Use (p. 35)
9:30–10:30 AM	M–C	Bonham C, Grand Hyatt	How Science Shapes Art—The Next Chapter: Sharing Student Work and Reflections (p. 34)
9:30–10:30 AM	C	Republic A, Grand Hyatt	2012 Preservice Science Standards for Preservice Teachers by NSTA and the National Council for Accreditation of Teacher Education (p. 35)
9:30–10:30 AM	M–H	Mission B, Grand Hyatt	NMLSTA Session: Science and Special Education—How to Make It Work (p. 35)
9:30–10:30 AM	G	Bonham E, Grand Hyatt	Before and After Retirement: Practicalities and Possibilities (p. 34)
9:30–10:30 AM	P–M/I	Blrm. B, Group 1, Conv. Center	Informal Science Day Session: Dive and Discover—Ocean and Penguin Curriculum (p. 34)
9:30–10:30 AM	M–H	207A, Conv. Center	Being Smart with Graphs! (p. 32)
9:30–10:30 AM	G	Lone Star Blrm. E, Grand Hyatt	Looking Back, Looking Ahead: Reflections of NSTA Distinguished Teaching Award Winners (p. 35)
9:30–10:30 AM	M–H/I	Lone Star Blrm. D, Grand Hyatt	CSI on a Shoestring Budget (p. 35)
9:30–10:30 AM	G	Presidio B, Grand Hyatt	STEM Rocks! Discover the Excitement of Geoscience Research in Antarctica (p. 39)
9:30–10:30 AM	I	201, Conv. Center	Successful Tools for Engaging Girls in Science: A National Panel of Women in STEM Share Proven Strategies and Programs (p. 38)
9:30–10:30 AM	G	Blrm. B, Group 4, Conv. Center	Informal Science Day Session: Using the Mix—Drawings to Look at Your Teaching (p. 34)
9:30–10:30 AM	G	Blrm. B, Group 3, Conv. Center	Informal Science Day Session: Formal Science Education Collaborations—Policy and Practice (p. 34)
9:30–10:30 AM	E	Blrm. B, Group 2, Conv. Center	Informal Science Day Session: Family Science and Engineering for Elementary-aged Children and Families (p. 39)
9:30 AM–12:30 PM	G	Lone Star Blrm. F, Grand Hyatt	Implication of the NRC <i>Framework</i> and the Highly Anticipated NGSS for Teaching and Learning (NGSS @ NSTA) (p. 40)
10:00–11:30 AM	2–5	007A, Conv. Center	Enhancing the Elementary Classroom Through Robotics (p. 40)
10:00–11:30 AM	9–12	008B, Conv. Center	The Basics of Flipped Learning, Getting Started: A Panel Discussion of Experts (p. 42)
10:00–11:30 AM	6–8	214B, Conv. Center	<i>Kids Ahead</i> , <i>STEM-Works</i> , and CSI Camps: Websites and Activities to Support Your Classes (p. 44)
10:00–11:30 AM	4	007C, Conv. Center	Solar Energy—Hands On! (p. 41)
10:00–11:30 AM	6–12	007D, Conv. Center	Dive into Exploration (p. 41)
10:00–11:30 AM	K–12	209, Conv. Center	Common Practices That Get to the CORE of Great Instruction Using Discovery Education Science Techbooks (p. 43)
10:00–11:30 AM	6–12	217C, Conv. Center	Real-World Science: NBC, NSF, and USPTO Videos You Can Use in Your Classroom (p. 44)
10:00–11:30 AM	3–11	205, Conv. Center	Teaching Science with Toys and Treats (p. 43)
10:30–11:00 AM	G	Tex. Blrm. A/B, Gr 3, Gr Hyatt	Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Choosing a Topic/Research Question (p. 44)
10:30–11:00 AM	M–H	Tex. Blrm. A/B, Gr 2, Gr Hyatt	Teacher Researcher Day Session: Strategies for Promoting Self-Efficacy and Their Effect on Students' Participation in Challenging Events (p. 44)
10:30 AM–12 Noon	E–M	Grand Blrm. C2, Conv. Center	Inquiry in the Urban Classroom: Connecting Curiosity and Creativity (p. 45)
11:00 AM–12 Noon	M–H/S	Salon L, Marr. Rivercenter	Student as Scientist: Steps Toward a Successful Student Research Program (p. 51)
11:00 AM–12 Noon	M–H	Salon M, Marr. Rivercenter	Using and Applying Technology to Bridge Science Literacy in a Multilingual Classroom (p. 51)
11:00 AM–12 Noon	G	Travis A, Grand Hyatt	NSELA Session: Action Research for Science Teachers: Useful Tools for Starting a Rewarding Professional Learning Community (p. 50)
11:00 AM–12 Noon	E–H	201, Conv. Center	Empower ALL Learners with Neuroscience (p. 47)

## Schedule at a Glance Integrated/General Science, cont.

11:00 AM–12 Noon	G	Tex. Blrm. A/B, Gr 1, Gr Hyatt	Teacher Researcher Day Session: PechaKucha 20x20 Teachers as Researchers (p. 49)
11:00 AM–12 Noon	G	213B, Conv. Center	Launching Pads: Using iPad Organizational Apps to Improve Science Teaching and Learning! (p. 52)
11:00 AM–12 Noon	G	Lone Star Blrm. C, Grand Hyatt	STEM Solar Lab: Student Learning with an Operating Photovoltaic System (p. 53)
11:00 AM–12 Noon	G	Salon J, Marr. Rivercenter	Eliminate Repeated Warnings and Multiple Requests (p. 50)
11:00 AM–12 Noon	E–H	Republic B, Grand Hyatt	Engaging Vocabulary...Let Me Count the Ways! (p. 54)
11:00 AM–12 Noon	P–E/S	213A, Conv. Center	No Hands! Facilitating Authentic Science Discussions with Young Children (p. 47)
11:00 AM–12 Noon	S	Republic A, Grand Hyatt	Putting the “A” into STEM: STEAM (p. 49)
11:00 AM–12 Noon	H	Salon M, Marr. Rivercenter	Making the Leap to a Textbook-less Course (p. 51)
11:00 AM–12 Noon	G	Lone Star Blrm. D, Grand Hyatt	Natural Differentiation with Rigor and Relevance for All (p. 53)
11:00 AM–12 Noon	E	217D, Conv. Center	Snacking Your Way Through the Science Curriculum (p. 52)
11:00 AM–12 Noon	E–M	215, Conv. Center	Family Science Events: Logistics, Engaging Science, and Parent Involvement (p. 47)
11:00 AM–12 Noon	E–M	217A, Conv. Center	What Are You Doing After School? (p. 52)
11:00 AM–12 Noon	G	Crockett C, Grand Hyatt	Tricks of the Trade: Evidence-based Tips for New Science Teachers and Mentors (p. 48)
11:00 AM–12 Noon	H	Salon D, Marr. Rivercenter	Quenching the Drought of Science Reasoning (p. 54)
11:00 AM–12 Noon	E–M	Tex. Blrm. A/B, Gr 5, Gr Hyatt	Teacher Researcher Day Session: Technology and Climate Change (p. 54)
11:00 AM–12 Noon	M	Travis B, Grand Hyatt	Great Ideas for Using iPads for Middle School STEM (p. 50)
11:00 AM–12 Noon	G	Conf. Room 11, Marr. Rivercenter	The Global-efficient Biomass Cookstove Education Project (p. 50)
11:00 AM–12 Noon	G	Tex. Blrm. A/B, Gr 3, Gr Hyatt	Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Ways to Collect Data (p. 50)
11:00 AM–12 Noon	E–M	216B, Conv. Center	Differentiating Investigations of Global Conflicts: Making a Challenging Curriculum Accessible to Learners with Diverse Needs (p. 48)
11:00 AM–12 Noon	E–M	216B, Conv. Center	Beyond Inquiry: How Big Ideas, Argumentation, and Visual Supports Help Students with Disabilities in Science Classrooms (p. 48)
11:00 AM–12 Noon	E–M	202B, Conv. Center	Parent Involvement: Key to All Students’ Success in School (p. 47)
11:00 AM–12 Noon	G	Crockett B, Grand Hyatt	School Facebook? Allow Edmodo to Become the “Stem” of Online Assessment (p. 48)
11:00 AM–12 Noon	P–M/I	Presidio B, Grand Hyatt	Birds Bring Your Science Class Alive (p. 53)
11:00 AM–12 Noon	G	Mission B, Grand Hyatt	NMLSTA Session: Diverse Students—What Am I Supposed to Do? (p. 49)
11:00 AM–12 Noon	G	Mission A, Grand Hyatt	Improve Administrator Effectiveness: Use the NSTA Learning Center Accountability System (p. 49)
11:00 AM–12 Noon	E–M	Lone Star Blrm. E, Grand Hyatt	NSTA Press® Session: <i>Bringing Outdoor Science In</i> (p. 48)
11:00 AM–12 Noon	G	Blrm. B, Group 3, Conv. Center	Informal Science Day Session: STEM Learning with the SAM Academy On Wheels—Science, Art, Music (p. 48)
11:00 AM–12 Noon	G	Blrm. B, Group 4, Conv. Center	Informal Science Day Session: The Effect of a Zoo Academic Science Program on High School Students’ Math and Science Achievement and Perceptions of School Climate (p. 48)
12 Noon–12:30 PM	G	Texas Blrm. A/B, Grand Hyatt	Teacher Researcher Day Session: Science Inquiry Group Network (p. 55)
12 Noon–1:30 PM	6–8	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Getting Started (p. 56)
12 Noon–1:30 PM	3–5	211, Conv. Center	Building Readiness in Science: Grades 3–5 (p. 57)
12 Noon–1:30 PM	3–8	006B, Conv. Center	English Language Learners in the Science Class: Integrating Language and Science Learning (p. 56)
12 Noon–1:30 PM	K–8	205, Conv. Center	I See What You Mean! Developing Visual Literacy (p. 57)
12 Noon–1:30 PM	K–12	008B, Conv. Center	Share My Lesson: Free K–12 Resources Developed by Teachers for Teachers (p. 56)
12 Noon–1:30 PM	K–12	209, Conv. Center	Discovery Education Science Techbook—Myths Busted (p. 57)
12:30–1:30 PM	G	Crockett C, Grand Hyatt	Preservice Teachers, Prepare for Inquiry! (p. 61)
12:30–1:30 PM	P–E	Tex. Blrm. A/B, Gr 1, Gr Hyatt	Teacher Researcher Day Session: A Prekindergarten Teacher Examines Students’ Understanding of Science Content (p. 62)

## Schedule at a Glance Integrated/General Science, cont.

12:30–1:30 PM	G	207A, Conv. Center	Citizen Science Investigations in the Classroom (p. 64)
12:30–1:30 PM	G	Presidio A/B, Grand Hyatt	Investigating Climate Change and the Next Generation of Health and Agricultural Problems (p. 65)
12:30–1:30 PM	G	Lone Star Blrm. C, Grand Hyatt	Science Lessons Reloaded: Effective Ways to Integrate STEM in Your Classroom (p. 65)
12:30–1:30 PM	M–H	Salon L, Marr. Rivercenter	Woodrow Wilson Fellows—Shaping Teaching Practice Through Field-based Action Research (p. 63)
12:30–1:30 PM	G	Crockett A, Grand Hyatt	Meeting the Needs of Diverse Learners: The Next Generation’s Discourse on Gender and Multiculturalism (p. 61)
12:30–1:30 PM	E	215, Conv. Center	Collecting and Analyzing Real Data in the Elementary Science Classroom (p. 64)
12:30–1:30 PM	E–H	Conf. Room 11, Marr. Rivercenter	Survivor Science (p. 62)
12:30–1:30 PM	G	Tex. Blrm. A/B, Gr 3, Gr Hyatt	Teacher Researcher Day Session: Finding Meaning as a Teacher Researcher—Analysis of Data (p. 65)
12:30–1:30 PM	G	101A, Conv. Center	Adding a Bit of Technology to a NASA Education Project (p. 60)
12:30–1:30 PM	G	Republic B, Grand Hyatt	Using Writing and Neuroscience to Reach the 21st-Century Learner (p. 65)
12:30–1:30 PM	M–C	Crockett B, Grand Hyatt	Using Probeware for Data Acquisition and Analysis (p. 61)
12:30–1:30 PM	E–M	216B, Conv. Center	F.I.N. (Family Inquiry Night): An Integrated Science, Math, and Literacy Event (p. 61)
12:30–1:30 PM	E–H	Tex. Blrm. A/B, Gr 2, Gr Hyatt	Teacher Researcher Day Session: Thinking Maps®: Tools for Organizing Information in a Diverse Classroom (p. 65)
12:30–1:30 PM	G	Crockett D, Grand Hyatt	Developing Performance Assessments Aligned with Standards (p. 61)
12:30–1:30 PM	G	Mission B, Grand Hyatt	NMLSTA Session: Enhancing Scientific Literacy: A Helping Hand by Using Humor (p. 61)
12:30–1:30 PM	E	101B, Conv. Center	STEM Inquiry and Problem-Based Learning (PBL) (p. 60)
12:30–1:30 PM	G	001A, Conv. Center	NASA: Teaching from Space (p. 60)
12:30–1:30 PM	G	Travis A, Grand Hyatt	NSELA Session: Publishing in the <i>Science Educator</i> , the Journal of NSELA (p. 62)
12:30–1:30 PM	G	Tex. Blrm. A/B, Gr 4, Gr Hyatt	Teacher Researcher Day Session: Developing Preservice Teacher Knowledge Under the Umbrella of Education for Sustainability (EFS) (p. 62)
12:30–1:30 PM	E	217D, Conv. Center	Discovering with Children (p. 64)
12:30–1:30 PM	E–H	Mission A, Grand Hyatt	The Shell Science Teaching Award: Fueling Success with Students (p. 61)
12:30–1:30 PM	M	Travis B, Grand Hyatt	Using Interactive Science Notebooks in the Middle School Classroom (p. 62)
12:30–1:30 PM	I	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Using Science Mystery Stories—The Details (p. 65)
12:30–1:30 PM	E	213A, Conv. Center	The Best in Literature—How We Chose It/How We Use It (p. 60)
12:30–1:30 PM	E–M	201, Conv. Center	Active Engagement of All Students—ELL, Gifted, and Learning Disabled (p. 64)
12:30–1:30 PM	H	Salon D, Marr. Rivercenter	Making It “Click”: Using Student Response Systems in the Science Classroom (p. 63)
12:30–1:30 PM	G	Bonham C, Grand Hyatt	Next Generation Energy Literacy Standards (p. 61)
12:30–1:30 PM	G	Salon K, Marr. Rivercenter	Making Connections with Comparative Activities (p. 63)
12:30–1:30 PM	E–M/I	202B, Conv. Center	Let’s Talk Science: Learning Conversations in Formal and Informal Science Education (p. 64)
1:30–2:00 PM	M–H	Tex. Blrm. A/B, Gr 2, Gr Hyatt	Teacher Researcher Day Session: A Study on Students’ Retrieval of Concepts Stored in Long-Term Memory (p. 68)
1:30–2:00 PM	G	Tex. Blrm. A/B, Gr 4, Gr Hyatt	Teacher Researcher Day Session: Fostering Teacher Researcher Collaborations (p. 68)
1:30–3:00 PM	G	Grand Blrm. C2, Conv. Center	High-Speed Large Area Production of Nanofibers (p. 68)
1:30–3:00 PM	G	Grand Blrm. C3, Conv. Center	Children Who Cry at Night...Fail Math in the Morning (p. 69)
2:00–3:00 PM	G	Lone Star Blrm. F, Grand Hyatt	Show Me What You Learned Today (p. 70)
2:00–3:00 PM	G	Tex. Blrm. A/B, Gr 2, Gr Hyatt	Teacher Researcher Day Session: How Teacher Research Changed Our Teaching and Students’ Learning (p. 77)
2:00–3:00 PM	G	Crockett C, Grand Hyatt	Teachers in the Scientific Research Laboratory (p. 71)
2:00–3:00 PM	E–M	Tex. Blrm. A/B, Gr 4, Gr Hyatt	Teacher Researcher Day Session: Focusing the Field Trip (p. 72)
2:00–3:00 PM	G	Lone Star Blrm. C, Grand Hyatt	Inquiry, Activated! (p. 76)

## Schedule at a Glance Integrated/General Science, cont.

2:00–3:00 PM	P–M/I	202A, Conv. Center	CSI for Small Fry: Classroom Science Investigations That Encourage Science Processes (p. 76)
2:00–3:00 PM	E–H	Crockett B, Grand Hyatt	Innovative Technology in Science Inquiry (p. 71)
2:00–3:00 PM	G	Mission A, Grand Hyatt	Join an NSTA Journal Manuscript Review Panel (p. 71)
2:00–3:00 PM	G	Crockett D, Grand Hyatt	Assessing Technological Analysis within Standardized Exams (p. 71)
2:00–3:00 PM	E–H	201, Conv. Center	How to Present STEM to African-American Women (p. 76)
2:00–3:00 PM	E–M	217A, Conv. Center	Effective Implementation Strategies of Formative Assessment for the Science Specialist (p. 76)
2:00–3:00 PM	E–C	Seguin A, Grand Hyatt	Inspiring STEM Elementary Teachers (p. 72)
2:00–3:00 PM	G	Tex. Blrm. A/B, Gr 1, Gr Hyatt	Teacher Researcher Day Session: Implementing a Mentoring and Professional Growth Program for Science Student Teachers (p. 72)
2:00–3:00 PM	G	Tex. Blrm. A/B, Gr 5, Gr Hyatt	Teacher Researcher Day Session: Integrating Mathematics, Science, and Technology in an Online Master’s Program for Practicing Teachers (p. 72)
2:00–3:00 PM	M–C	Salon K, Marr. Rivercenter	Tips for Publishing Your Ideas in Professional Journals (p. 74)
2:00–3:00 PM	E–H	Salon J, Marr. Rivercenter	Get Moving! The Biology and Earth/Space Science Edition (p. 74)
2:00–3:00 PM	G	Lone Star Blrm. D, Grand Hyatt	Kinesthetic Science: Bodies (and Minds) in Motion (p. 76)
2:00–3:00 PM	M	202B, Conv. Center	Student-designed Experiments: A Strategy That Works for Them and You! (p. 70)
2:00–3:00 PM	M–H	Lone Star Blrm. E, Grand Hyatt	What We Wish We Knew (p. 71)
2:00–3:00 PM	G	Presidio A/B, Grand Hyatt	Bioenergy: Make Gas from Grass in the Classroom (p. 77)
2:00–3:00 PM	E	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Authors Share Favorite Lessons from <i>Teaching Science Through Trade Books</i> (p. 77)
2:00–3:00 PM	G	Crockett A, Grand Hyatt	Establishing a STEM-focused School (p. 71)
2:00–3:00 PM	M–H	Salon L, Marr. Rivercenter	STEM and the Next Generation Science Standards (p. 74)
2:00–3:00 PM	M	Travis B, Grand Hyatt	Writing Scientific Arguments, Teaching Science Practices, and Developing Nonfiction Writers (p. 73)
2:00–3:00 PM	M–H	Salon M, Marr. Rivercenter	Bring the Magic of Space to Your Classroom! (p. 74)
2:00–3:00 PM	E–M	215, Conv. Center	Students Choosing to Make a Difference! Producing Service Learning Projects That Engage, Inspire, and Impact Students and Their Society (p. 70)
2:00–3:00 PM	G	Republic B, Grand Hyatt	Using Cooperative Table Groups in Science (p. 77)
2:00–3:00 PM	H/S	Republic A, Grand Hyatt	Accelerating Teacher Practice: Collaborative Analysis of Student Understanding Drives PD for Standards-based Teaching (p. 72)
2:00–3:00 PM	P–E	217D, Conv. Center	Stop—Look—Listen: Science Investigations for Elementary Students (p. 76)
2:00–3:00 PM	E	101B, Conv. Center	Crazy for Science—The Musical! (p. 70)
2:00–3:00 PM	G	Conf. Room 11, Marr. Rivercenter	The Future of Education: Experiences from the Flipped Classroom (p. 73)
2:00–3:00 PM	P–E	Travis A, Grand Hyatt	NSELA Session: Formative Assessment Strategies for Successful Science Instruction and Learning Starting in Prekindergarten (p. 73)
2:00–3:00 PM	H/S	207A, Conv. Center	Using LabQuest2 with iPads in Modeling Instruction (p. 76)
2:00–3:00 PM	E–M	216B, Conv. Center	Bridge the Gap—Lab to Test (p. 71)
2:00–3:30 PM	7–C	210B, Conv. Center	Environmental and Earth Science with Vernier (p. 81)
2:00–3:30 PM	K–12	008A, Conv. Center	AAAS <i>Science NetLinks</i> : An Incredible Resource for Teachers and Students...and It’s Free! (p. 78)
2:00–3:30 PM	6–12	217C, Conv. Center	Real-World Science: NBC, NSF, and USPTO Videos You Can Use in Your Classroom (p. 81)
2:00–3:30 PM	K–12	209, Conv. Center	Discovery Education and the iPad—Learning Gone Mobile (p. 80)
2:00–3:30 PM	G	006B, Conv. Center	Outer Space, Tornadoes, and the Pacific Garbage Patch! Free K–12 Resources and Best Practices (p. 78)
2:00–3:30 PM	K–12	205, Conv. Center	STEM Curriculum—Moving Beyond the Acronym and into Classroom Practice (p. 80)
2:00–3:30 PM	6–8	007A, Conv. Center	LEGO MINDSTORMS® Education EV3: Robotics in the Middle School Classroom—Advancing Your Program (p. 78)
2:00–4:00 PM	G	Blrm. B, Conv. Center	Informal Science Day Share-a-Thon (p. 82)
2:00–4:00 PM	S	Bonham D, Grand Hyatt	AoA Session: Walking the Talk—How to Proceed with the Next Generation Science Standards (NGSS @ NSTA) (p. 82)
2:30–4:00 PM	4	007C, Conv. Center	WindWise Science Curriculum (p. 83)
3:30–4:30 PM	G	Grand Blrm. C1, Conv. Center	Blended Learning Cycle (p. 83)

## Schedule at a Glance Integrated/General Science, cont.

3:30–4:30 PM	E	Mission A, Grand Hyatt	NSTA Press® Session: Inquiring Scientists, Inquiring Readers: Using Nonfiction Text Sets in Scientific Inquiry, Grades 3–5 (p. 85)
3:30–4:30 PM	G	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Designing Effective Science Instruction with the Next Generation Science Standards (p. 87)
3:30–4:30 PM	E–H	Republic B, Grand Hyatt	Using Case Study Analysis as a Tool for Differentiating Science Instruction for Students with Disabilities (p. 89)
3:30–4:30 PM	G	Crockett C, Grand Hyatt	Though This May Be Science—There Is Method in It (p. 85)
3:30–4:30 PM	P–E	215, Conv. Center	Successful Science Activities for the Early Childhood Classroom (p. 88)
3:30–4:30 PM	G	Tex. Blrm. A/B, Gr 5, Gr Hyatt	Teacher Researcher Day Session: Creating Communities of Collaboration (p. 86)
3:30–4:30 PM	E–H	Crockett B, Grand Hyatt	Cooperative Learning: English Language Learners Develop and Teach Science Lessons (p. 84)
3:30–4:30 PM	M–H	Tex. Blrm. A/B, Gr 1, Gr Hyatt	Teacher Researcher Day Session: How to “Biotech” Your Secondary School Science Class: Strategies for Implementation and Assessment Using Action Research (p. 86)
3:30–4:30 PM	H	Tex. Blrm. A/B, Gr 3, Gr Hyatt	Teacher Researcher Day Session: Action Research on Innovative Methods: Accountability Groups; Flipped Lessons (p. 86)
3:30–4:30 PM	G	Crockett D, Grand Hyatt	Active Student Learning Portfolios—Not Your Typical Portfolio! (p. 85)
3:30–4:30 PM	G	Bonham C, Grand Hyatt	Geocaching to Develop Environmental Literacy (p. 84)
3:30–4:30 PM	E–M	217A, Conv. Center	Square Foot Gardening: STEM and Sustainability (p. 88)
3:30–4:30 PM	E–M	216B, Conv. Center	Engendering Inquiry and Teaching for Transferal (p. 84)
3:30–4:30 PM	M–H	Salon M, Marr. Rivercenter	Climate Change: STEM Project-based Inquiry Modules (p. 87)
3:30–4:30 PM	C	Republic A, Grand Hyatt	IB4E: Preparing Elementary Teachers to Use Investigation Before Explanation (p. 85)
3:30–4:30 PM	G	Crockett A, Grand Hyatt	Profession Sessions: Classroom Connections to STEM Careers (p. 84)
3:30–4:30 PM	G	Lone Star Blrm. E, Grand Hyatt	The Internet Science and Technology Fair (ISTF): STEM Integration (p. 85)
3:30–4:30 PM	P–E	217D, Conv. Center	Science Workstations “DO MATTER” (p. 89)
3:30–4:30 PM	P–E	Travis A, Grand Hyatt	NSELA Session: No Child Left Behind in the Inclusive Science Classroom: Successful Accommodation and Modification Strategies for Children with Unique Needs (p. 87)
3:30–4:30 PM	G	Crockett C, Grand Hyatt	Let Your Voice Be Heard (p. 85)
3:30–4:30 PM	M	Travis B, Grand Hyatt	Bring Your Middle School Labs into the 21st Century (p. 87)
3:30–4:30 PM	G	Salon L, Marr. Rivercenter	From Education to Exhibitions—How the Use of an Educational Laboratory in a Museum Exhibition Space Leads to a Deeper Understanding of Science for All Ages (p. 87)
3:30–4:30 PM	G	Lone Star Blrm. C, Grand Hyatt	21st-Century Skills and Math Instruction: A Happy Marriage (p. 85)
3:30–4:30 PM	G	Tex. Blrm. A/B, Gr 2, Gr Hyatt	Teacher Researcher Day Session: Exploring the Integration of Mathematics and Science (p. 86)
3:30–4:30 PM	M–H	Salon D, Marr. Rivercenter	Flying Blood: Using STEM-based Forensic Trajectory Analysis of Blood Stains to Reconstruct a Crime! (p. 89)
3:30–4:30 PM	G	Salon K, Marr. Rivercenter	Managing Science Fairs in the Classroom (p. 87)
3:30–4:30 PM	M–H/S	Conf. Rm. 11, Marr. Rivercenter	Designing Project-based Science Units: Keys for Success (p. 87)
3:30–4:30 PM	E–H	201, Conv. Center	Engaging Science Instruction for Special Needs Students (p. 84)
4:00–5:30 PM	3–8	205, Conv. Center	Everyday Engineering—Experience the Excitement (p. 91)
4:00–5:30 PM	K–12	006B, Conv. Center	Build the Scaffolding for 21st-Century Skills (p. 90)
5:00–5:30 PM	G	Crockett B, Grand Hyatt	Teacher, Could We Try This in Class? (p. 91)
5:00–6:00 PM	P	101B, Conv. Center	Implementing an Early Childhood Science Curriculum: Teacher Decisions and How They Affect Students’ Skills and Attitudes (p. 92)
5:00–6:00 PM	M	202B, Conv. Center	The Mystery of the Mummy Brothers (p. 95)
5:00–6:00 PM	G	Salon L, Marr. Rivercenter	More Lessons from <i>The Teen Parent Academy</i> : Alternative School Strategies That Work (p. 94)
5:00–6:00 PM	M–H	207A, Conv. Center	Incorporating STEM Research with Technology Inquiry in Low Socioeconomic Classrooms (p. 95)
5:00–6:00 PM	H	Salon D, Marr. Rivercenter	Increasing Inquiry and Engagement with Forensics (p. 94)
5:00–6:00 PM	E–M	216B, Conv. Center	Using Design Briefs to Bring Engineering into STEM Education (p. 92)

## Schedule at a Glance Integrated/General Science, cont.

5:00–6:00 PM	E–M	217A, Conv. Center	Creative Expressions to Support Science Learning (p. 95)
5:00–6:00 PM	M	Travis B, Grand Hyatt	Project-based Science: Tips for Success (p. 93)
5:00–6:00 PM	G	Presidio B, Grand Hyatt	Science, Math, and Nature of Science (NOS): Modeling Density and Buoyancy in a Scientific Inquiry-based Integrated Science and Math Activity (p. 95)
5:00–6:00 PM	E–M	216B, Conv. Center	SMART STEM: Ways to Use Interactive Technology in a Student-centered STEM Classroom (p. 92)
5:00–6:00 PM	M	Republic B, Grand Hyatt	Engage from Day 1 with Science Olympiad (p. 95)
5:00–6:00 PM	E–M	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Linking Science, Math, and Art Instruction (p. 95)
5:00–6:00 PM	G	201, Conv. Center	Science Camp: An Effective High-Stakes Test Intervention (p. 92)
5:00–6:00 PM	M–H	Salon K, Marr. Rivercenter	Making Science Fairs a Fun and Achievable Process for All Students (p. 94)
5:00–6:00 PM	G	Conf. Rm. 11, Marr. Rivercenter	Making a Difference...One Piece of Trash at a Time (p. 93)
5:00–6:00 PM	H	Salon J, Marr. Rivercenter	Diversity in Science (p. 94)
5:00–6:00 PM	H/I	Salon M, Marr. Rivercenter	Ocean for Life: An Initiative to Increase Cultural Understanding Through Ocean Science (p. 94)
5:00–6:00 PM	E–H	Lone Star Blrm. D, Grand Hyatt	Meeting the Needs of All Science Students Through Differentiated Instruction (p. 93)
5:00–6:00 PM	G	Crockett D, Grand Hyatt	It's About Time: Success for the "Time-challenged" Student (p. 92)
5:00–6:00 PM	G	Crockett A, Grand Hyatt	The Science Behind Advanced Coursework in High School (p. 92)
5:00–6:00 PM	P	217D, Conv. Center	The Inquiry Approach: What Does Inquiry Look Like and What Is My Role as a Teacher? (p. 95)
5:00–6:00 PM	E–M	215, Conv. Center	Inspiring Achievement Through Rigorous, Innovative, and Authentic Experiences (p. 92)
8:30–9:30 PM	G	Salon I, Marr. Rivercenter	Androids in Education: How Humanlike Robots Can Help Students Learn and Teachers Teach (p. 97)
6:00–12 Midnight	G	Salon A, Marr. Rivercenter	A Festival of Award-winning Film Classics and Inspiring Legends, Part III (p. 98)

### Integrated/General: Sunday

8:00–9:00 AM	E	217B, Conv. Center	Effective Strategies for Enhancing Science Learning for Diverse Students (p. 105)
8:00–9:00 AM	P–E	102B, Conv. Center	Innovative Hands-On and Modeling Strategies Generate Synergy Between Science and Language with ELLs: Lessons Learned (p. 102)
8:00–9:00 AM	E	217D, Conv. Center	Fostering Writing Through Hands-On Engineering (p. 105)
8:00–9:00 AM	G	212B, Conv. Center	What ACT's National Curriculum Survey Tells Us Is Being Taught in Science at Grades 3–12 (and What College Educators Say Should Be Taught) (p. 103)
8:00–9:00 AM	E–M	102A, Conv. Center	After-School Engineering or Engineers Don't Just Drive Trains (p. 104)
8:00–9:00 AM	M–C	210B, Conv. Center	Teacher-made Documentaries: Experience the Fine Art of Story-Teaching Through Documentary Production (p. 104)
8:00–9:00 AM	M–C	211, Conv. Center	PhET Interactive Simulations for Development of Student Science Practice (p. 102)
8:00–9:00 AM	G	214B, Conv. Center	Meaningful Assessment in Science That Impacts Learning (p. 104)
8:00–9:00 AM	E–M/S	214D, Conv. Center	Teaching the "E" with the "STM": Integrating Engineering into Elementary School Curricula (p. 104)
8:00–9:00 AM	G	212A, Conv. Center	Conducting Scientific "Conversations" with the Natural World: A Powerful Strategy for Learning Science (p. 103)
8:00–9:00 AM	E	202B, Conv. Center	You Said It, But Did They Get It? (p. 102)
8:00–9:00 AM	G	214A, Conv. Center	STEM Starters (p. 104)
8:00–9:00 AM	E–M	202A, Conv. Center	Scribble-Bots (p. 104)
8:00–9:00 AM	E–M	101B, Conv. Center	Meeting the Core Curriculum Standards: Grappling with Grackles Graphing! (p. 102)
9:30–10:00 AM	G	214B, Conv. Center	Teaching with Tablets (p. 105)
9:30–10:30 AM	E–M	102A, Conv. Center	Igniting Students' Interest in STEM Careers (p. 107)
9:30–10:30 AM	E–H	211, Conv. Center	Engaging Students with Science: Implementing the 5E Model (p. 107)
9:30–10:30 AM	G	006–C, Conv. Center	Stretch Their Thinking: Science Extension Lessons (p. 107)
9:30–10:30 AM	E–H	214A, Conv. Center	Integrating Scientific Research into K–12 STEM Education (p. 108)

## Schedule at a Glance Integrated/General Science, cont.

9:30–10:30 AM	E	102B, Conv. Center	Conceptual Connections: Integrating Science and Social Studies (p. 105)
9:30–10:30 AM	E–C	212A, Conv. Center	Integration of Elementary Science and Math Through Investigations in an Outdoor Classroom (p. 106)
9:30–10:30 AM	E–M	210B, Conv. Center	Zap Your Classroom with Technology (p. 106)
9:30–10:30 AM	E–H	214D, Conv. Center	Incorporating Engineering in K–12 Science (p. 108)
9:30–10:30 AM	M/I	213A, Conv. Center	Family Science Nights and Field Trips (p. 106)
9:30–10:30 AM	G	212B, Conv. Center	The 2011 NAEP-TIMSS Linking Study: Understanding Science Achievement in the U.S. and Around the World (p. 106)
9:30–10:30 AM	E	217D, Conv. Center	Sci-a-grams (p. 108)
11:00 AM–12 Noon	P–E	217D, Conv. Center	Bringing STEM Activities into Your Classroom (p. 111)
11:00 AM–12 Noon	G	212B, Conv. Center	Science Sleuths: How Seventh Graders and Kindergartners Can Engage in Meaningful Inquiry (p. 109)
11:00 AM–12 Noon	G	214D, Conv. Center	What Do Engineers Really Do? How Is Engineering Different from Science and How Does That Change My Teaching Practice? (p. 111)
11:00 AM–12 Noon	E–M/S	214A, Conv. Center	STREAM: A Science, Technology, Literacy Integration Model (p. 111)
11:00 AM–12 Noon	G	211, Conv. Center	Mentor-Mentee Dialogues: Fostering the Development of Beginning Science Teachers of Diverse Students (p. 111)
11:00 AM–12 Noon	E	202A, Conv. Center	Engage with Engineering Using Science Olympiad Activities (p. 110)
11:00 AM–12 Noon	G	006–C, Conv. Center	You’re Never Too Old, or Too Young, to Enjoy a Good Review! (p. 110)
11:00 AM–12 Noon	E	102B, Conv. Center	Science Integrated Stations in the Library (SISL) (p. 109)
11:00 AM–12 Noon	E–M	101B, Conv. Center	Science Investigations—A to Z (p. 109)

## Physics/Physical Science: Saturday

8:00–9:00 AM	E	216A, Conv. Center	Engineering Is Elementary: Marvelous Machines (p. 20)
8:00–9:00 AM	H	Presidio B, Grand Hyatt	Leveling Up (p. 22)
8:00–9:30 AM	1–3	007A, Conv. Center	Introducing Simple Machines into the Elementary Classroom with LEGO® Bricks (p. 24)
8:00–9:30 AM	K–4	007C, Conv. Center	Wind Energy for K–4 (p. 24)
8:30–9:30 AM	G	Texas Blrm. A/B, Grand Hyatt	Teacher Researcher Day Session: Teacher Research in Science Education in Multiple and Diverse Settings Poster Session (p. 29)
9:30–10:30 AM	G	Texas Blrm. D, Grand Hyatt	NSTA Press® Session: Stop Faking It! Finally Understand Light and Sound So You Can Teach It (p. 39)
9:30–10:30 AM	E	216A, Conv. Center	How Rube Goldberg Saved the City of Ember (p. 33)
9:30–10:30 AM	G	Salon C, Marr. Rivercenter	New Twists on Torque: A Guided Inquiry Approach (p. 39)
9:30–10:30 AM	H	Salon B, Marr. Rivercenter	Bringing Forensics into Physics (p. 37)
10:00–11:30 AM	5–8	007B, Conv. Center	The Effective Integration of Standards-based Instruction and STEM Project Based Learning (p. 41)
10:00–11:30 AM	11–12	212B, Conv. Center	Perimeter Institute: Hands-On Wave-Particle Duality (p. 44)
10:00–11:30 AM	5–8	211, Conv. Center	Middle School Science: Core Concepts Density Lesson (p. 43)
10:00–11:30 AM	5–9	102B, Conv. Center	Bring the Excitement of Hands-On Learning to Your Middle School Classroom! (p. 42)
10:00–11:30 AM	5–12	008A, Conv. Center	The “E” in STEM—Connect the Virtual to the Physical (p. 42)
10:30–11:00 AM	P–E	Tex. Blrm. A/B, Gr 1, Gr Hyatt	Teacher Researcher Day Session: Early Childhood Explorations with Force and Motion (p. 44)
11:00 AM–12 Noon	H–C	Seguin A, Grand Hyatt	Does God Really Play Dice with the Universe? (p. 49)
11:00 AM–12 Noon	H	Salon B, Marr. Rivercenter	QuarkNet: Particle Physics in the Classroom (p. 50)
11:00 AM–12 Noon	G	Tex. Blrm. A/B, Gr 4, Gr Hyatt	Teacher Researcher Day Session: Exploring Young Children’s Science Knowledge and Skills (p. 54)
11:00 AM–12 Noon	G	Salon C, Marr. Rivercenter	NASA: Out-of-This World Inquiry-based Resources (p. 54)
11:00 AM–12 Noon	M–H	Tex. Blrm. A/B, Gr 2, Gr Hyatt	Teacher Researcher Day Session: Strategies to Design, Build, and Execute Successful STEM Projects (p. 49)
11:00 AM–12 Noon	H–C	Seguin A, Grand Hyatt	TACTILS: Teaching Advanced Characterization Tools in Local Schools (p. 49)

## Schedule at a Glance Physics/Physical Science, cont.

11:00 AM–12 Noon	E–M	216A, Conv. Center	Happy Marriage of Practices and Pendulums (p. 52)
11:00 AM–12 Noon	H	Salon B, Marr. Rivercenter	Physics First: A Story of Adoption, Implementation, and Evaluation from 2007 to 2011 (p. 50)
11:00 AM–12 Noon	H/S	Salon A, Marr. Rivercenter	Explore Building Mousetrap Vehicles to Integrate STEM (p. 54)
11:00 AM–12 Noon	G	Blrm. B, Group 2, Conv. Center	Informal Science Day Session: From Paper Towers to Straw Kazoos—Free Online STEM Resources to Excite All Students (p. 53)
12 Noon–1:30 PM	11–12	212B, Conv. Center	Perimeter Institute: Curved Space-time in the Classroom (p. 58)
12 Noon–1:30 PM	9–C	210A, Conv. Center	<i>Physics with Vernier</i> (p. 57)
12 Noon–1:30 PM	5–9	102B, Conv. Center	It's Off to the Races with K'NEX® Education's Forces, Energy, and Motion Set! (p. 56)
12 Noon–1:30 PM	6–8	203A, Conv. Center	Hot Bulbs: Investigating Energy Efficiency (p. 56)
12 Noon–1:30 PM	9–12	204B, Conv. Center	Meeting the Needs of Today's Physics Students (p. 57)
12 Noon–2:00 PM	4	007C, Conv. Center	Wind-energized Classroom (p. 59)
12:30–1:30 PM	I	Blrm. B, Conv. Center	Informal Science Day: Little Shop of Physics Demo and Open House (p. 60)
12:30–1:30 PM	E–C	Lone Star Blrm. E, Grand Hyatt	Using Robotic Technology to Support Students Acquiring Language Through Science Inquiry (p. 65)
12:30–1:30 PM	E–H	Salon C, Marr. Rivercenter	Thinking Like a Scientist: Inquiry-based Activities to Jump-start Critical Thinking (p. 66)
12:30–1:30 PM	M–H	Salon B, Marr. Rivercenter	NASA Brings You Newton's Laws of Motion (p. 66)
2:00–3:00 PM	M	Mission B, Grand Hyatt	Inspiring Students with NASA's Instructional Programs (p. 72)
2:00–3:00 PM	E	216A, Conv. Center	From Simple Circuits to Introductory Robotics (p. 76)
2:00–3:00 PM	G	Tex. Blrm. A/B, Gr 5, Gr Hyatt	Teacher Researcher Day Session: Engaging Prospective Elementary Teachers in Learning How to Integrate Science and Literacy (p. 72)
2:00–3:00 PM	E–M	Tex. Blrm. A/B, Gr 3, Gr Hyatt	Teacher Researcher Day Session: Action Research: Studying Unique Ways to Engage Students in STEM (p. 72)
2:00–3:30 PM	5–9	102B, Conv. Center	Go Green and Bring STEM Concepts to Life with the K'NEX® Education Renewable Energy Set! (p. 80)
2:00–3:30 PM	9–C	210A, Conv. Center	Advanced Physics with Vernier (p. 80)
3:30–4:30 PM	M	Lone Star Blrm. B, Grand Hyatt	Simple Machine Junkyard Cars (p. 85)
3:30–4:30 PM	E–H	Salon C, Marr. Rivercenter	Motion and Its Sidekicks: Velocity, Acceleration, Energy, Work, and Efficiency (p. 89)
3:30–4:30 PM	E–H	Salon B, Marr. Rivercenter	Measuring Forces, Speed, Velocity, and Acceleration of Flying Things (p. 89)
3:30–4:30 PM	E	216A, Conv. Center	Inquiry and Patterns of Change: Forces and Motion (p. 88)
4:00–5:30 PM	3–5	007A, Conv. Center	Machines and Mechanisms in the Classroom and Beyond (p. 90)
4:00–5:30 PM	3–6	102B, Conv. Center	Bring Simple Machine Concepts to Life with Real-World Models! (p. 90)
4:30–5:30 PM	4	007C, Conv. Center	Renewable Power, Vernier, and KidWind Gear (p. 91)
5:00–6:00 PM	M–H	Salon C, Marr. Rivercenter	Intelligent Designing: Using Engineering Design to Create an Environment for Inquiry (p. 96)

### Physics/Physical Science: Sunday

8:00–9:00 AM	H	217A, Conv. Center	More “Invisible” Physics (p. 105)
8:00–9:00 AM	E–M	216A, Conv. Center	Immersing Teachers and Students in Scientific Inquiry at the LIGO Science Education Center (p. 103)
8:00–9:00 AM	M–H/I	207A, Conv. Center	NASA's Goldstone Apple Valley Radio Telescope Program (p. 102)
9:30–10:30 AM	M–H	217A, Conv. Center	Fabulous Physics—with Cheap Stuff! (p. 106)
9:30–10:30 AM	G	217B, Conv. Center	Building Scientific Curiosity, Content Knowledge, and Inquiry Skills Through Investigations of Simple Electric Circuits (p. 108)
11:00 AM–12 Noon	G	207B, Conv. Center	Engineering for All: Pipeline Programs for Underserved Communities (p. 109)
11:00 AM–12 Noon	M–H	207A, Conv. Center	Using PhET Simulations to Teach Introductory Physics (p. 109)

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