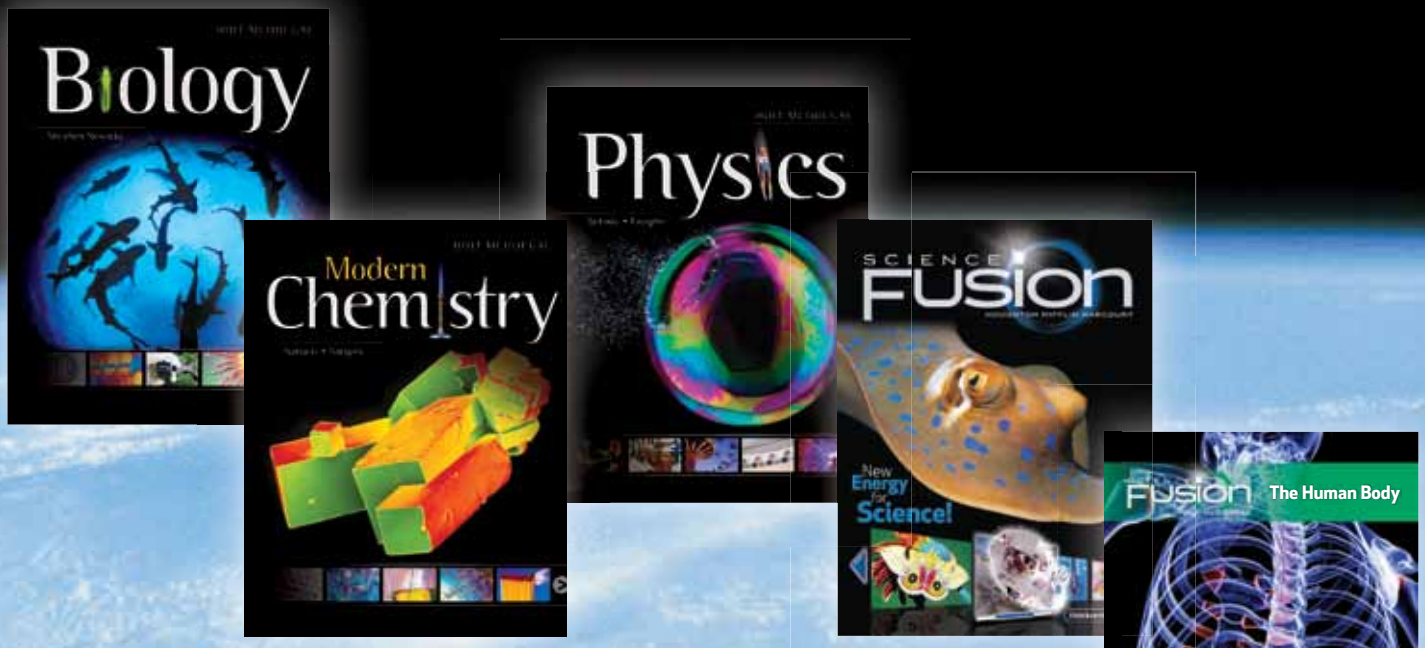
SCIENCE: EYE ON OUR FUTURE

NSTA 2011 Area Conference on Science Education

NEW ORLEANS

NSTA National Science Teachers Association

OUR NEW K–12 PROGRAMS ARE *OUT OF THIS WORLD!*



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Grades 6–8

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- ExploraVision, the world's largest K-12 science competition, offers teams of students an opportunity to create and explore their visions of future technologies.
- Up to $240,000 in savings bonds is awarded each year, plus expense-paid trips to Washington, DC for national winning students and their parents. Schools, coaches, and mentors win too!
- Your students can reach that incredible "A-ha!" moment – when all their real-world learning comes together in problem-solving, critical thinking, collaboration, and recognition.

TOSHIBA NSTA

Leading Innovation >>>

Through Toshiba's shared mission partnership with NSTA, the Toshiba/NSTA ExploraVision competition makes a vital contribution to the educational community.

Visit www.exploravision.org/regionalconference for details.

1-800-EXPLOR-9
exploravision@nsta.org

www.Facebook.com/ToshibaInnovation

@ToshibaInnovate

NSTA 2011 Area Conference on Science Education

New Orleans, Louisiana • November 10–12, 2011

Registration, Travel, and Hotels

Conference Resources

Conference Resources, cont.

Conference Program

Indexes

National Science Teachers Association
1840 Wilson Blvd.
Arlington, VA 22201-3000
703-243-7100
E-mail: *conferences@nsta.org*
www.nsta.org

Cover Photo

Scientists classify biomass from an offshore oil platform near Louisiana coast in the Gulf of Mexico.
Photo courtesy of Jeff Rotman/Alamy

NSTA Affiliates

Association for Multicultural Science Education (AMSE)
Association for Science Teacher Education (ASTE)
Association of Science-Technology Centers (ASTC)
Council for Elementary Science International (CESI)
Council of State Science Supervisors (CSSS)
National Association for Research in Science Teaching (NARST)
National Middle Level Science Teachers Association (NMLSTA)
National Science Education Leadership Association (NSELA)
Society for College Science Teachers (SCST)

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Welcome to New Orleans

Shannon Lafont, Paul Johnson, and Jean May-Brett

We welcome you to join us in the great city of New Orleans for *Science: Eye in Our Future*. Southeast Louisiana provides science educators with unique field experiences, numerous science rich-learning opportunities and facilities, diverse cultural encounters, and memorable culinary occasions for explorations in learning. . .whatever your age or interest. Conference strands focus on *Crafting a College-ready and Career STEM Workforce for the Future*; *Leveraging Multidimensional Resources to Enhance 21st-Century Learning*; and *Sustaining Science Success for All Students*. Our strand leaders and members of the conference planning committee have worked hard to provide educators, from the formal and informal science communities, with a variety of workshops, featured presentations, concurrent sessions, and field experiences.

Whether you are a first-timer or a veteran NSTA conference participant, the conference activities are guaranteed to offer attendees a wide array of instructional ideas and strategies and time to be re-energized, as well as networking opportunities that will leave you wishing there was at least one more day.

We are excited to again welcome NSTA members to New Orleans. People in New Orleans and the surrounding region have recently experienced natural and man-made disasters that have threatened the very essence of the New Orleans' economy, people, and culture. We look forward to having you, science educators, and organizations from across the world join us for a tremendous science learning experience and a chance for us to share just a little of what makes this area resilient and exceptional.

2011 New Orleans Conference Committee Leaders
Shannon Lafont, Jean May-Brett, and Paul Johnson

We at NSTA wish to express our heartfelt thanks to the members of the Louisiana Science Teachers Association for the many hours of time they volunteered in planning this conference.

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New Orleans Conference Committee

Program Committee

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Erie 1 Board of Cooperative Educational Services
West Seneca, NY

Strand Leader: Leveraging Multidimensional Resources to Enhance 21st-Century Learning
Carolyn Smith
El Dorado Public School District
El Dorado, AR

Strand Leader: Sustaining Science Success for All Students
Mary Helen Blanchard
CATALyST (Center For Applied Teaching and Learning to Yield Scientific Thinking)
Ruston, LA

District VII Director
Chris Campbell
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Simsboro, LA

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Field Trips Manager
Gayle Glusman
Consultant
Madisonville, LA

Guides Manager
Cathie Brister
Jefferson Parish School Board
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Manager of Services for People with Disabilities
Brenda Nixon
The Gordon A. Cain Center for Scientific, Technological, Engineering and Mathematical (STEM) Literacy
Baton Rouge, LA

Publicity Manager
Tricia LeBlanc
Audubon Aquarium of the Americas
New Orleans, LA

Volunteers Manager
Jan Graff
Caddo Parish Schools
Shreveport, LA

Tools for STEM Education
for Elementary and Middle School Educators

The first NSTA STEM Forum & Expo will bring together nationally renowned STEM experts and practitioners and hands-on educators interested in learning about successful approaches and implementation of Science, Technology, Engineering, and Mathematics education into our schools and districts. STEM best practices, content, and integration processes are critical aspects for creating well-trained elementary and middle school educators who will need to radically increase student literacy in these STEM subjects. Join this very important discussion on STEM.

Who Should Attend?

- K–8 educators who want to expand their understanding of STEM and learn how to integrate it into their own classrooms and schools.
- High school and college educators knowledgeable about what secondary and college-level students need to be successful in STEM course work.
- Stakeholders and administrators who must educate their teaching staff on the most current and successful STEM practices.

Register by **MARCH 23** and save.

For more information, visit
www.nsta.org/stemforum

NSTA

President's Welcome

Spirit, Opportunity, and Innovation: Science Education for a Smarter Planet

Welcome to the NSTA 2011 New Orleans Area Conference on Science Education! This year, it has never been more critical to engage you in the dynamic professional conversation about outstanding science teaching. We are glad you could join us at this conference, one of the primary venues for communicating with all educators about the latest innovations in science teaching, to deepen and strengthen our professional understanding of science pedagogy.

The conference team has built an outstanding program around the theme of *Science: Eye on Our Future*, with the strands of "Crafting a College-ready and Career STEM Workforce for the Future," "Leveraging Multidimensional Resources to Enhance 21st-Century Learning," and "Sustaining Science Success for All Students." The theme and strands allow us to address questions such as:

- What are the best science teaching practices and STEM education practices, and how do we implement them?
- How can we reach ALL of our students with the spirit and passion for learning science and STEM careers?
- How do we engage all science education stakeholders to make outstanding science teaching happen…that is, science education for a smarter planet?
- What role will *A Framework for K–12 Science Education* and the Next Generation Science Standards play in science teaching and learning?

As we pursue answers to these questions, I encourage you to take full advantage of this opportunity to network with new and current colleagues and your elected Board and Council members, see our featured speakers, explore the exhibit hall and exhibitor workshops, sign up for special ticketed events, and attend outstanding teacher workshops and presentations.

Again, I welcome you to the New Orleans conference and look forward to meeting you. We must reach all of our students and ignite and inspire their spirit and creative energy in disciplines about which we are all passionate—science and science education!

Patricia Simmons
2011–2012 NSTA President

Contributors to the New Orleans Conference

NSTA and the New Orleans Planning Committee are extremely grateful to the following companies and associations for their generous contributions to the NSTA New Orleans Area Conference on Science Education.

American Association of Physics Teachers
American Chemical Society
American Society for Engineering Education (ASEE)
Carolina Biological Supply Co.
Kendall Hunt Publishing Co.
Louisiana Science Teachers Association
National Association of Biology Teachers (NABT)
Southwest Airlines Co.

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

NSTA Conferences Go Green!

The National Science Teachers Association is committed to meeting today's environmental challenges by adopting eco-friendly practices both in our own day-to-day operations and at our conferences, workshops, and other events. In addition, we strongly encourage our contracted conference facilities to follow green practices as well. Here are some of the ways NSTA's conference department has worked to minimize our impact on the environment:

Conference Previews

Gone are the days of bulky, newspaper-style advance programs. Brief conference previews allow us to be more focused in our conference content, since each preview is specific to a particular conference. As an added bonus, they are more environmentally friendly, as they dramatically reduce both our print and mailing requirements.

Online Conference Information and Personal Scheduler

Most of your conference arrangements can now be accomplished online *(www.nsta.org/conferences)*. Register and make your housing reservations on the web. Program details are available to you on our website using the Session Browser/Personal Scheduler. Scheduling information on our website is up to date and more complete than that available through a printed piece.

Final Conference Programs by E-Mail

Conference registrants are now given the option of receiving an electronic version (PDF) of the final conference program by e-mail approximately two weeks prior to the conference, further reducing printing and shipping requirements.

Recycled Paper and Sustainable Print Services

Conference previews and final conference programs are now printed on recycled paper. In addition, Walsworth Print Group, the printer for our conference materials, is in strict compliance with all environmental laws and exceeds these standards in many areas. Wherever possible, Walsworth Print Group works to reduce and recycle waste, use reduced or low-VOC chemicals, increase the recycled content of raw materials, and use soy- and/or vegetable-based inks. Walsworth Print Group has also obtained chain-of-custody certification for paper products to ensure they are being harvested from environmentally responsible sources.

Green Initiatives at The New Orleans Convention Center

The New Orleans Morial Convention Center is committed to reducing the environmental impact of operations and services by providing the following::

• **Recycling**. The convention center's 26,000 meeting room and 7,600 ballroom chairs are 85% easily recyclable. Environmentally friendly materials as well as the recycling of waste materials were used in ballroom renovations.

• **Waste Reduction**. IP-based electronic signage has been installed at every meeting room, reducing the need for disposable signs. Old containers were repurposed as recycle stations throughout the facility for a savings of more than $90,000.

• **Energy Efficiency.** Energy-efficient lighting and low-mercury lamps are installed throughout entire facility. More than 6,000 exterior incandescent lights have been replaced with LED lamps for an energy savings of 88%.

• **Indoor Air Quality.** Semi-permanent air handling filters have been replaced with MERV 13 filters which meet Green Building Council Indoor Air Quality credit for cleaner air.

Eco-friendly Exhibition Practices

Our conference partner, Hargrove, Inc., offers many green product options and services in the production of our conference exhibitions, including 100% recyclable carpet and padding, recycled exhibit structures, a "reclaimer" that recycles 92% of all solvents the company uses in production of graphics, use of LP natural gas in 75–90% of show-site vehicles, and many biodegradable and recycled products such as trash bags and wastebaskets. Their green efforts are extended operationally with reductions in electricity, heating fuel, and water usage, as well as a move to 100% recyclable and biodegradable products.

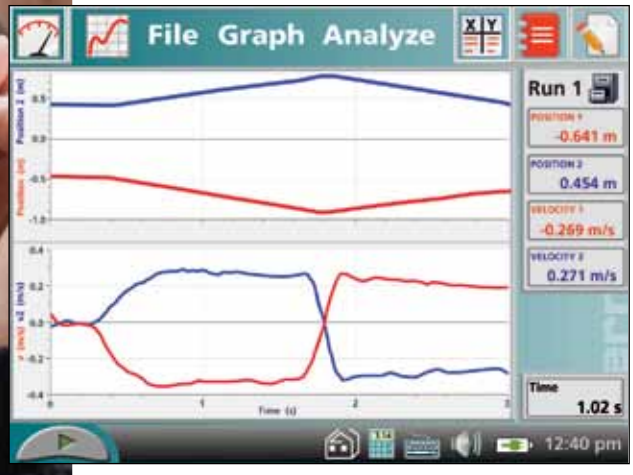
"Go Green" at the New Orleans Conference!

- Recycle your conference programs in the clearly marked recycle bins located throughout the Convention Center.
- Recycle or reuse your plastic badge holders—you can either turn them in at the NSTA Registration Counter or use them at future conferences.
- Use double-sided printing and/or recycled paper for session handouts and other conference materials.
- Walk or use public transportation when possible at the conference.
- Bring your own refillable water bottle to the conference.
- In advance of the conference, presenters are encouraged to post their presentations and handouts on NSTA Communities, the NSTA online professional learning community.
- Session evaluations will now be completed online.

Remember the first time you fell in love with science?

We do. It is the reason we believe in hands-on scientific technology. It engages students in a meaningful way, develops keen analytical skills, and awakens a love for discovery.

Stop by our **booth 632**, or attend one of our FREE hands-on workshops. Enter the drawing to win a FREE Vernier LabQuest.



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Registration, Travel, and Hotels

—Photo courtesy of Cheryl Gerber, New Orleans Convention and Visitors Bureau

Meeting Location and Times

The conference headquarters hotel is the New Orleans Marriott. Conference registration, the exhibits, NSTA Avenue, the NSTA Science Bookstore, and most sessions will be located at the New Orleans Morial Convention Center. Additional sessions and events will be held at the Marriott. The conference will begin on Thursday, November 10, at 8:00 AM and end on Saturday, November 12, at 12 Noon.

Registration

Registration is required for participation in all conference activities and the exhibits. The lapel badge mailed to you with your confirmation, or issued to you at registration on-site, is your "ticket of admission" to the Exhibit Hall and all conference activities except those for which a separate fee is stated (e.g., short courses, field trips, and social events).

The NSTA Registration Area, located in Hall A of the Convention Center, will be open during the following hours:

Wed., Nov. 9	5:00–7:00 PM
Thu., Nov. 10	7:00 AM–5:00 PM
Fri., Nov. 11	7:00 AM–5:00 PM
Sat., Nov. 12	7:30 AM–12 Noon

If you misplace your badge or tickets, present your personal ID at the Badge Reprint Counter in the Registration Area and you will be issued replacements. Only one replacement badge will be issued.

Purchasing Ticketed Events

The New Orleans Planning Committee has scheduled a variety of ticketed events. Each of these events requires a separate fee and ticket. You may purchase tickets for these events, space permitting, in the NSTA Registration Area. See the Conference Program section (starting on page 36) for details. Note that some events may have required advance registration.

Ground Transportation to/from Airport

A variety of ground transportation options are available to and from the Louis Armstrong New Orleans International Airport. An airport shuttle to and from the Central Business District hotels is approximately $20 each way or $38 round-trip. A fixed taxi rate of $33 (one to two people) is charged from the airport to most areas of New Orleans. For parties of more than two, the fare is $14 per person.

Getting Around Town/Shuttle Service

You'll find that many of New Orleans's hotels, attractions, restaurants, and nightlife are located within comfortable walking distance of each other. If you prefer not to walk, the Regional Transit Authority (RTA) operates local bus and streetcar routes. Call the RTA at 504-248-3900 or visit *www.norta.com* for more information.

Free shuttle service is provided between the Convention Center and the New Orleans Marriott during registration and session hours at the times below. Shuttles depart every 10–15 minutes.

Wed., Nov. 9	4:30–7:30 PM
Thu., Nov. 10	6:30 AM–5:30 PM
Fri., Nov. 11	6:30 AM–5:30 PM
Sat., Nov. 12	6:30 AM–2:00 PM

Parking

Lot F of the Convention Center is available for public parking for $10/day with no in and out privileges. Go to *http://bit.ly/nXOtD0* for a New Orleans area parking map. You may also contact your hotel about guest parking.

Airlines

The toll-free numbers to contact NSTA-designated airlines are as follows:

AirTran	866-683-8368	NSTA11*
American	800-433-1790 *www.aa.com*	66N1AR
Continental	800-468-7022 *www.continental.com*	ZJZE-606816**
Delta	800-328-1111	NM87Y
United	800-521-4041	510CK
Amtrak Rail	800-872-7245	X46F-920***

**For AirTran phone reservations only*

***$25 fee per ticket for Continental phone reservations*

****Not valid on Auto Train and Acela service; for phone reservations only*

Discounted Rental Cars

The toll-free numbers to contact NSTA-designated car rental companies are as follows:

Enterprise	800-593-0505	32H7476
Hertz	800-433-1790	CV#031C0016

New Orleans Area Map

1. **Hampton Inn & Suites Convention Center**
   1201 Convention Center Blvd.

2. **Hilton Garden Inn Convention Center**
   1001 S. Peters St.

3. **New Orleans Marriott (Headquarters Hotel)**
   555 Canal St.

4. **Embassy Suites New Orleans–Convention Center**
   315 Julia St.

Don't forget to visit the NSTA Science Bookstore. We offer a wide range of books as well as "I Love Science" T-shirts, mugs, and gifts galore.

NSTA Exhibits

NSTA exhibits are an essential feature of every NSTA conference. Here you will find the latest textbooks, computer hardware and software, laboratory equipment, industry-supported educational materials, summer opportunities, and many other exhibits that are designed to enhance your knowledge and teaching skills.

The lapel badge mailed to you with your confirmation, or issued to you at registration on-site, is your "ticket of admission" to the Exhibit Hall and all conference activities. A complete list of exhibitors and contact information starts on page 122. A foldout map of the Exhibit Hall floor plan is available at Program Pickup.

Graduate Credit Opportunity

New Orleans conference attendees can earn one graduate-level credit in professional development through Framingham State University. Learn more about the assignment requirements and pick up a registration form at the Louisiana Science Teachers Association (LSTA) booth, located in the NSTA Registration Area, or at *www.framingham.edu/nsta.* Registration will be available on Wednesday, November 9, from 5:00 PM to 7:00 PM, and Thursday, November 10, from 7:00 AM to 4:00 PM.

Exhibit Hall Hours. Located in Hall A of the Convention Center, exhibits will be open for viewing during the following hours:

Thu., Nov. 10	11:00 AM–5:00 PM
Fri., Nov. 11	9:00 AM–5:00 PM
Sat., Nov. 12	9:00 AM–12 Noon

Ribbon Cutting. An opening ceremony is scheduled on Thursday at 11:00 AM at the entrance to the NSTA exhibits.

Leads Retrieval. NSTA exhibitors use leads retrieval, a paperless tracking system that allows them to receive fast, accurate information about conference attendees who have visited their booths. With the leads retrieval system, an exhibitor scans your badge as you visit the booth. This allows exhibitors to send information to you while the conference is still fresh in your mind.

Exhibitor Workshops. Exhibitor-sponsored workshops for science teachers are offered throughout the conference. These workshops give you an opportunity to use a variety of commercial instructional materials. Attendance is on a first-come, first-served basis. See page 137 for a complete listing of exhibitor workshops.

NSTA Avenue

Stop by NSTA Avenue and learn about NSTA's benefits, products, services, programs, and partners…and free gifts, too! Share with others, expand your knowledge, and earn rewards for you and your students. See page 130 for a complete list of NSTA services and programs.

NSTA Science Bookstore

Award-winning professional development titles; the newest books for 2011; and "I Love Science" T-shirts, mugs, and gifts galore stock the shelves in NSTA's bookstore.

You're invited to examine just-released *Science the "Write" Way, Learning and Teaching Scientific Inquiry*, and *Models-Based Science Teaching,* new books with a fresh perspective. For science educators looking for content knowledge, scientific methods, or a handbook on STEM, we carry the titles you've asked for. And topping it off, you can talk to many authors about their work and get a signature on your personal copy. We'll also have copies of Ted Danson's book, *Oceana: Our Planet's Endangered Oceans and What We Can Do to Save Them.*

The Science Bookstore is located in the NSTA Registration Area. All attendees enjoy discounts of 20% on NSTA Press® titles. Enjoy our free shipping option when you place your order online during the conference.

Visitor Information and Restaurant Services

For more than 21 years, On The Town has been handling on-site restaurant and entertainment services for visitors to New Orleans. Want to take a look at restaurant menus and make a reservation? Need visitor information? Want to book a shuttle back to the airport? Look no further than the On The Town concierge help desk in Lobby A of the Convention Center. They are available to help you during NSTA registration hours.

Housing Questions or Concerns?

If you have any questions or concerns about your housing, please contact The Housing Connection toll-free at 877-352-6710.

LSTA Booth

The Louisiana Science Teachers Association (LSTA) booth is located inside of Hall A of the Convention Center. Stop by for information about Louisiana and the benefits of becoming a member of LSTA. Membership forms and information on association activities will be available, along with registration forms for graduate credit through Framingham State University or CLU certificates. Stop by the booth to update your contact information, renew your membership, or become a member. LSTA members may pick up their free ticket to the 2011 Awards Reception!

Presenters and Presiders Check-In

If you are presenting or presiding at a session, please check in and pick up your ribbon at the Presenters/Presiders booth in the Registration Area after you have registered for the conference and received your name badge.

Conference Evaluation

All conference attendees are invited to complete a conference evaluation form online at *http://ecommerce.nsta.org/2011new/conference_evaluation.asp.*

NSTA Mobile Website

We invite you to visit the NSTA Mobile Website, *m.nsta.org*, the best way to keep track of what's happening at the conference from your phone. The mobile website features a slimmed-down version of our popular session browser tool, allowing you to view sessions by Date/Time, Session Format, Subject, and Keyword, and to evaluate those you have attended. The site also includes a map of New Orleans with bookmarks for the conference hotels and Convention Center, a link to the #nsta Twitter feed, NSTA news, and other important information. Please note that the site has been optimized for use with iPhone and Android devices.

If you have a barcode reader installed, point your phone's camera at the image in the ad below to go directly to the NSTA mobile site. We welcome your feedback about the conference mobile website. *Note:* This is not an app; it is a website optimized for viewing on smartphones.

Audiovisual Needs

NSTA will fulfill AV needs originally requested on the program proposals as long as the request is within the limits of equipment that NSTA provides (an LCD projector and screen). For any last-minute AV needs, presenters must arrange and pay for their own equipment. Technology Express, the designated AV company on-site, will be located in the following rooms:

- Room 223, Convention Center
- Jackson Room, Marriott

Lost and Found

All lost-and-found items will be turned in at the NSTA Exhibitor Registration counter in Hall A of the Convention Center.

First Aid Services

The EMS Medical Station is located in Lobby B-2 of the Convention Center. Attendees in need of first aid may simply walk into the medical station, which will be staffed by a Registered Nurse during the conference. For emergencies, call 504-582-3096. Attendees may also call the 24-hour Public Safety Base Station at 504-582-3040.

Business Services

Located in front of Hall F inside the Convention Center, the UPS Store offers services, including photocopying, scanning, faxing, use of computer work stations, and same-day shipping. During the week of the conference, hours will be 9:00 AM–6:00 PM, Monday through Wednesday, and 8:00 AM–6:00 PM, Thursday through Sunday. For more information, please call 504-670-8941.

The FedEx Print & Ship Center[sm] is located at the New Orleans Marriott, lobby level near the Canal Street entrance. Hours are 7:00 AM–7:00 PM, Monday through Friday, and 10:00 AM–6:00 PM, Saturday and Sunday. Orders can be placed online at *fedex.com/conventions*. Please call 504-654-1057 for more information about their printing and shipping services.

Message Center

A Message Center for conference attendees is available in the NSTA Registration Area. No messages, except extreme emergencies, can be broadcast over the public address system.

NEW! Online Session Evaluations and Tracking Professional Development

All attendees can now evaluate sessions via their smartphones or online while simultaneously tracking their professional development certification (based on clock hours).

Help NSTA's **GREEN** efforts by completing session evaluations online November 10–23, 2011, via your smartphone *(m.nsta.org)* while the session is fresh in your mind! Or attendees can visit *www.nsta.org/evaluations* at a later time to complete a short online session evaluation for each session they attend. **And this year, we're giving away a Kindle Fire to one attendee who completes a session evaluation! Remember, the more sessions you attend and evaluate, the more chances you have to win!**

Concurrent session presenters may also complete evaluation forms for their own sessions in order to track professional development credit.

To evaluate a session via *www.nsta.org/evaluations:*

- Enter your badge number (if you don't remember your badge number, click "help me find my badge number").
- Type the beginning of the session title in the "Lookup Session" field, scroll down to find the correct session, and click the "Submit Session" button. The session information will appear and you can begin to evaluate the session.
- When finished evaluating the session, click the "Submit Evaluation" button.
- Repeat this process for each session attended.

To evaluate a session via your smartphone, visit *m.nsta.org* and:

- Locate the appropriate session by schedule, format, subject, or keyword search from the home page and then click on the "Evaluate This Session" button.
- Enter your badge number at the top of the form and then answer the nine questions.

A Professional Development Documentation Form is included following page 32 to help attendees keep track of sessions/events attended that are NOT available for online session evaluation. This form can also be used to take notes on sessions attended that are available for online session evaluation.

Beginning November 29, 2011, an attendee can view his or her transcript at the NSTA Learning Center *(learningcenter.nsta.org)* by clicking on "My PD Record and Certificates." Attendees can also document credit for activities that are not being evaluated (e.g., short courses, Exhibit Hall visits, featured speakers, meetings, etc.). Each attendee is responsible for tracking his or her own attendance at such events. The transcript can be printed here and presented to an administrator who requires documentation of participation in the conference. All information in these transcripts will be maintained (and can be accessed) indefinitely as part of an attendee's individual profile.

Hands-on, Eyes-on

Bring STEM education to every seat in the classroom with the ***FlexCam® 2***

This high-definition document camera offers versatility for any curriculum. It is perfect for demonstrations, showing various items in any size classroom, pointing out small details, or for student use in project collaboration and assessment.

The FlexCam 2 features an HD 1080P camera and Applied Vision™ Software.

Visit Booth #732

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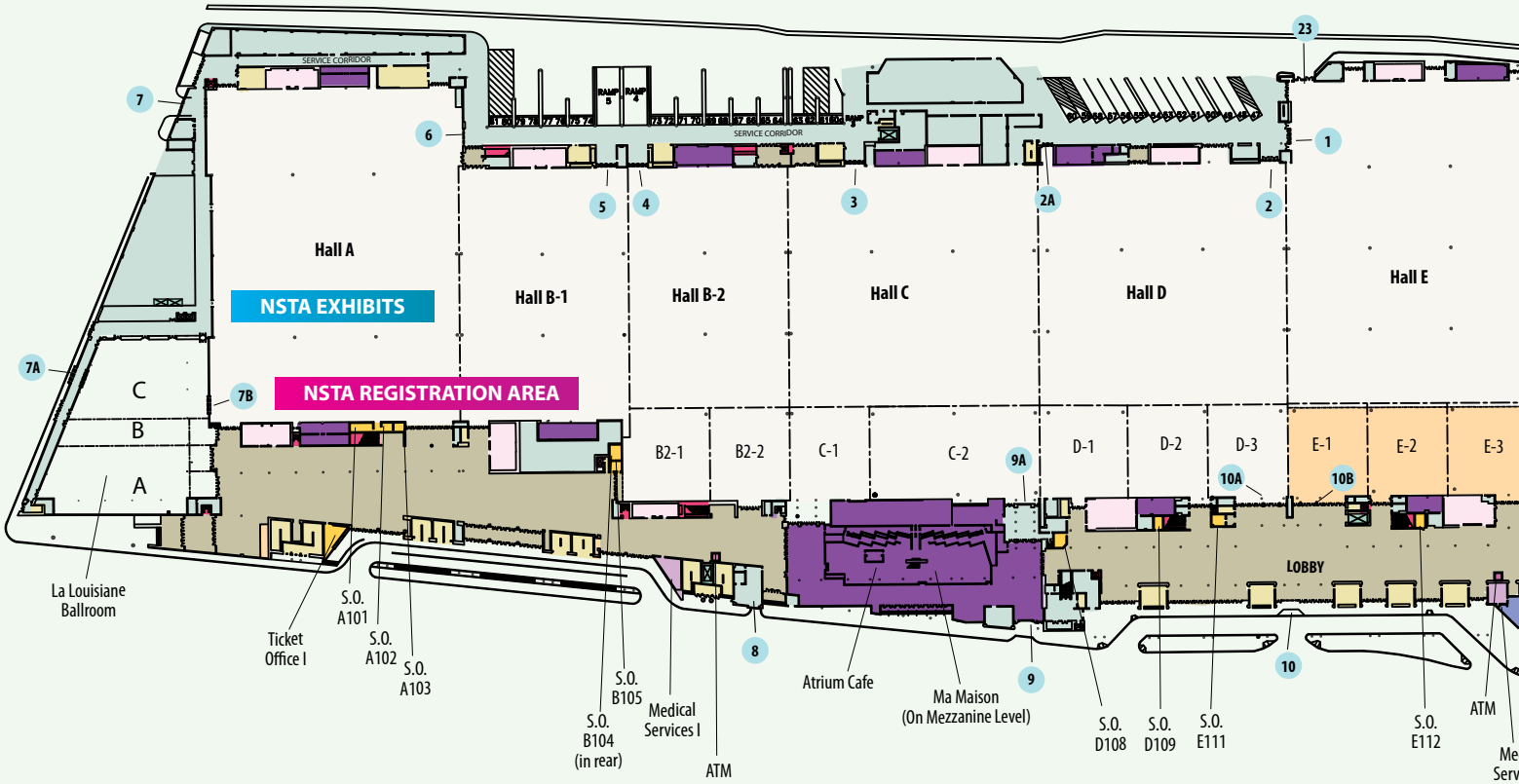
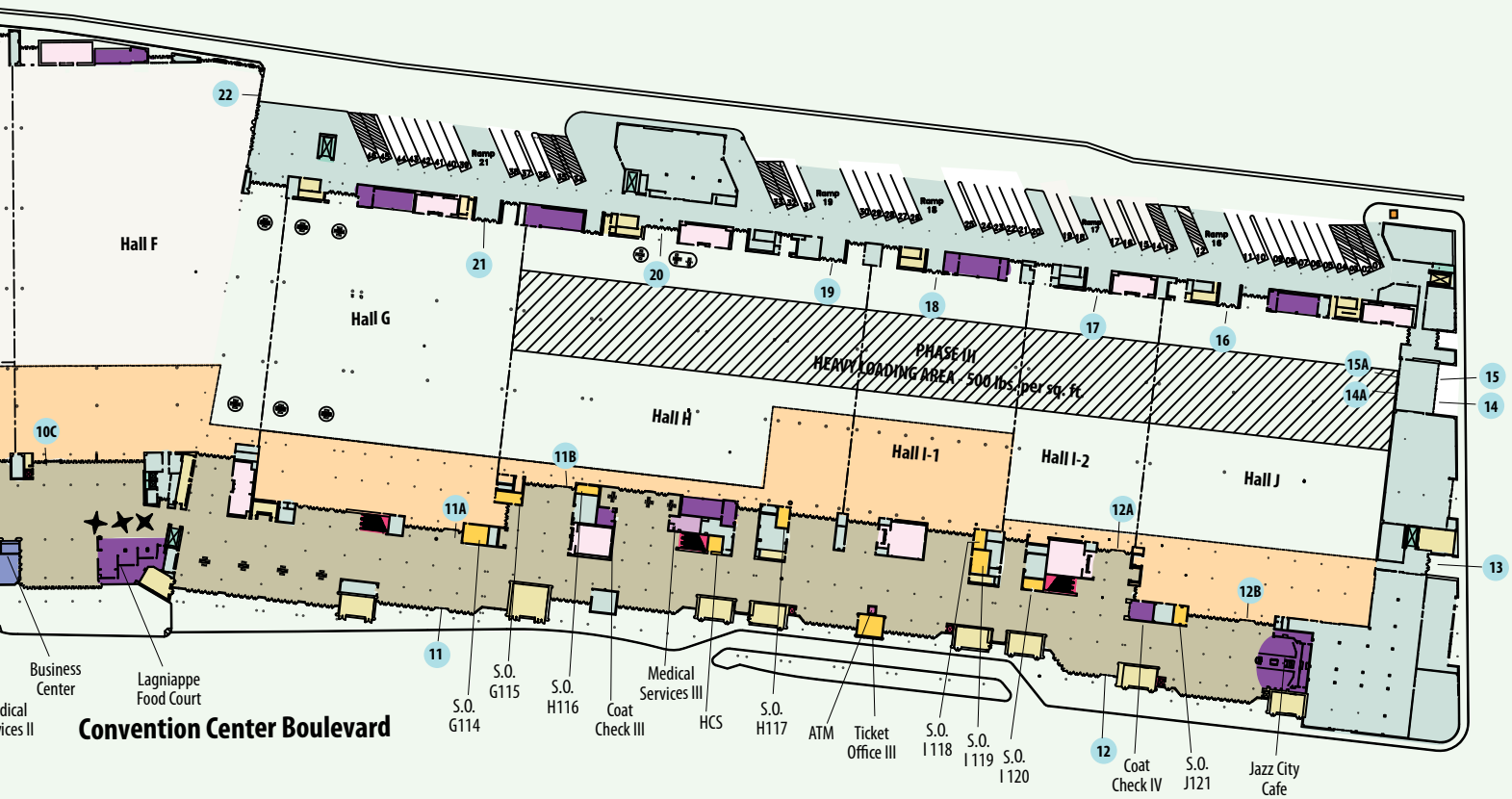
New Orleans Morial Convention Center

First Floor

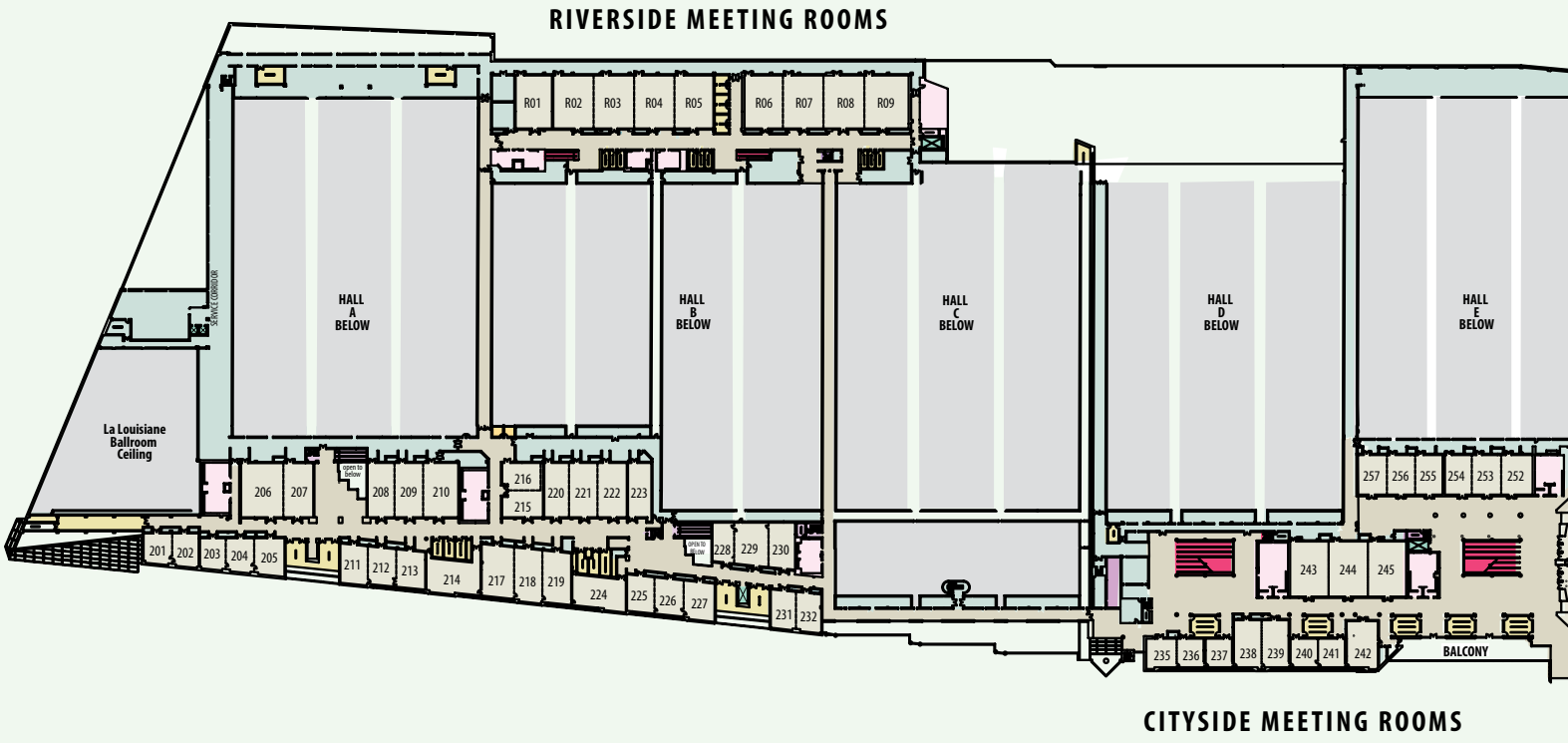


New Orleans Morial Convention Center

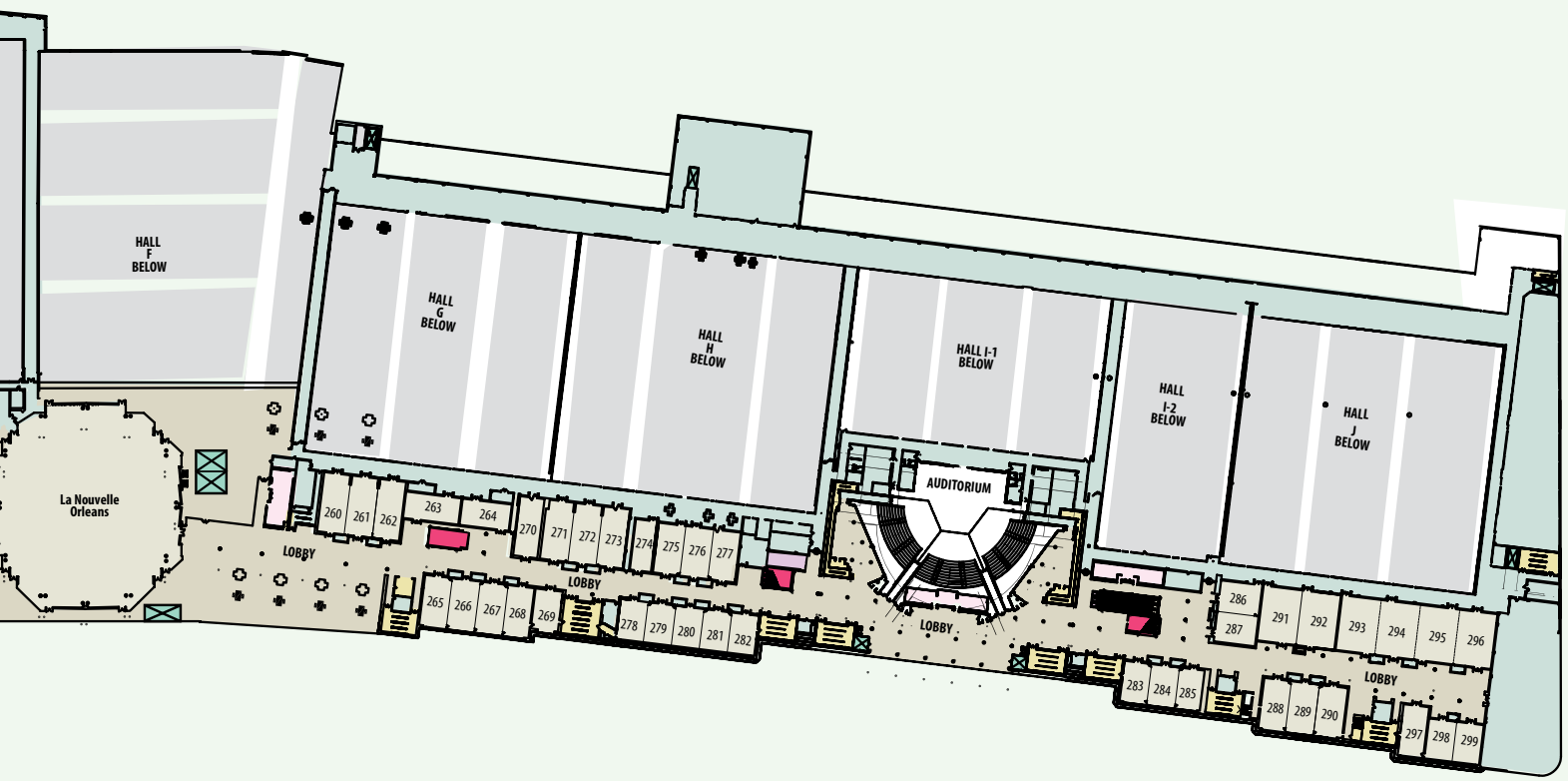


New Orleans Morial Convention Center

Second Floor

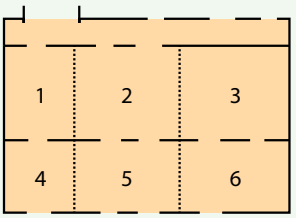


New Orleans Morial Convention Center



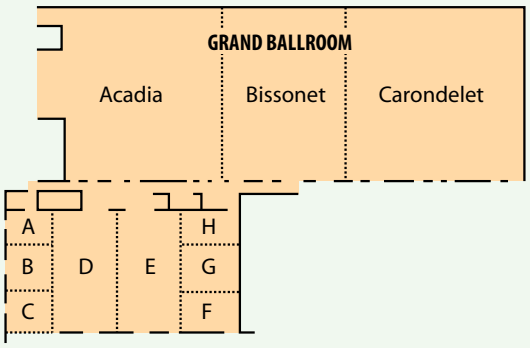
New Orleans Marriott

2nd Floor



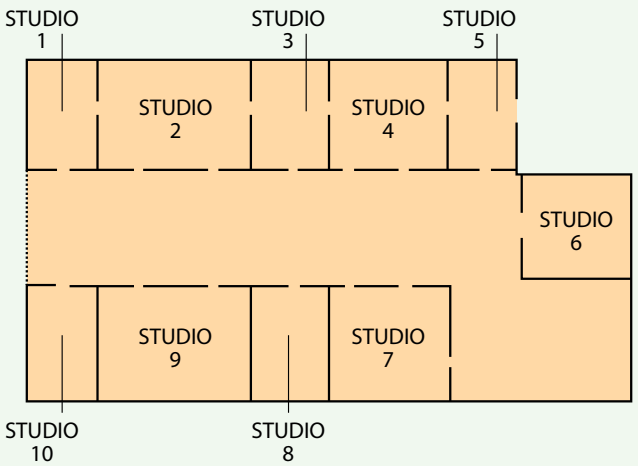
LA GALERIE

3rd Floor

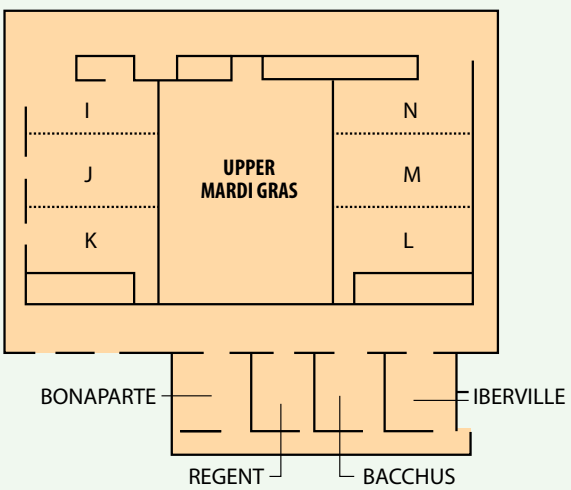


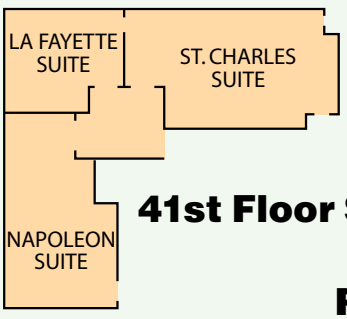
MARDI GRAS BALLROOM (SALON A–H)

Marriott's Preservation Hall (2nd Floor)

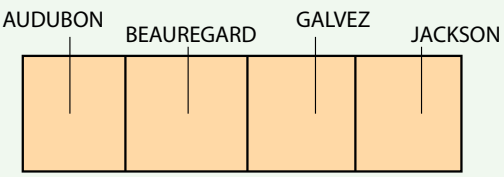


4th Floor





41st Floor Suites



5th Floor

Riverview Room

FREE

HANDS-ON WORKSHOPS

Friday, November 11 • Room 212

8:00am - 9:00am	Biology—Cell Respiration in Germinating Peas
9:30am - 10:30am	Physics & Physical Science—Investigating Motion
11:00am - 12:00pm	Middle School—Investigating earthquakes: Bringing Science and Technology Together *Featuring* Sally Ride Science - Key Concepts in Science
1:00pm - 2:00pm	Chemistry—Atmospheric Pressure
2:30pm - 3:30pm	Renewable Energy Exploration—Solar and Wind Power

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STEM EDUCATOR AWARD

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NSTA Mission Statement

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

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Brenda Wojnowski, NSELA
Brian Schmaefsky, SCST

All cities are subject to change pending final negotiation.

National Conferences on Science Education

Indianapolis, Indiana
March 29–April 1, 2012

San Antonio, Texas
April 11–14, 2013

Boston, Massachusetts
April 3–6, 2014

2012 STEM Forum & Expo

Atlantic City, N.J.
May 17–19

Area Conferences on Science Education

2011 Area Conference

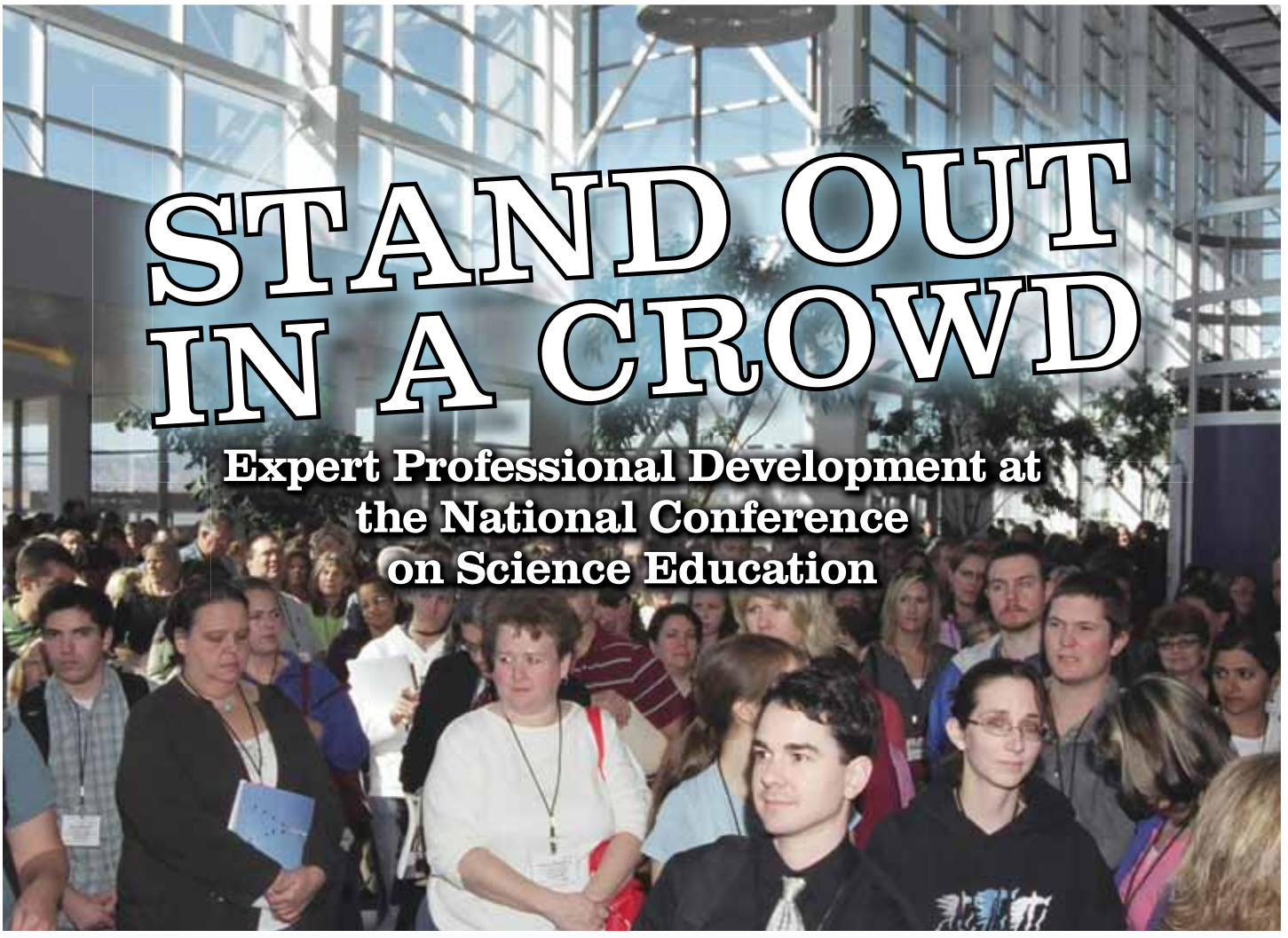
Seattle, Washington
December 8–10

2012 Area Conferences

Louisville, Kentucky
October 18–20

Atlanta, Georgia
November 1–3

Phoenix, Arizona
December 6–8



STAND OUT IN A CROWD

Expert Professional Development at the National Conference on Science Education

Indianapolis, IN
March 29 – April 1, 2012

Professional Development Strands:

- Mapping Our Way to Success Through the New Core Standards
- Pathways to a Sustainable Planet
- Merging Inquiry, Creativity, and Innovation Through STEM
- Traveling New Instructional Roads Through Technology

Attendees can access:

- Content knowledge and ready-to-use teaching techniques.
- Presentations from inspirational science personalities.
- Student and teacher award and grant competitions.
- 2,000 sessions, workshops, field trips, and short courses for K–16 educators.
- Exhibit Hall featuring new products and giveaways from more than 400 exhibitors.
- NSTA Science Bookstore with 100s of professional development books; attendees receive a 20% discount.
- A networking community that nurtures your passion for science.

Visit *www.nsta.org* for updates or call 800.722.6782

NSTA National Science Teachers Association

Photo courtesy of Richard Nowitz and the New Orleans Convention and Visitors Bureau.

Is This Your First NSTA Conference?

Yes, you say? Then you are invited to attend a special session on Thursday, 8:00–9:00 AM. Learn how you can gain the most from your conference experience and have fun doing it! See page 51 for details.

Ribbon-Cutting Ceremony

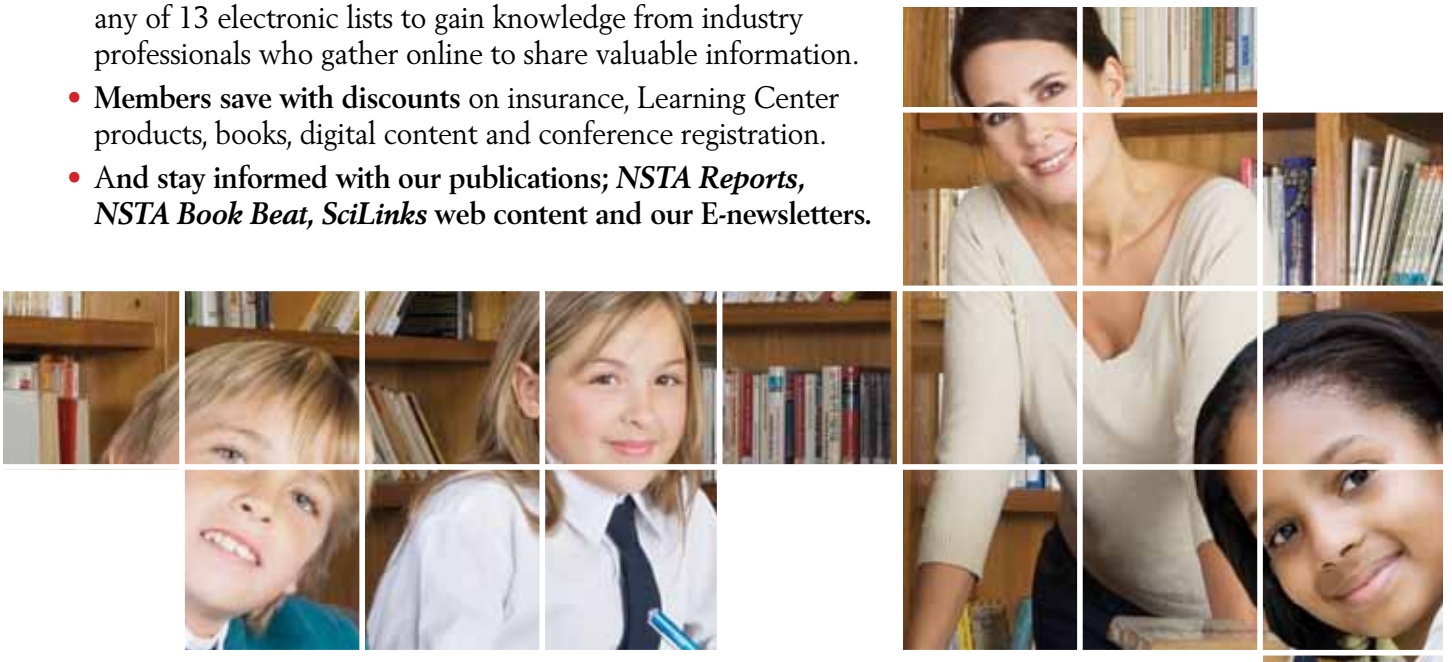
An opening ceremony is scheduled on Thursday at 11:00 AM at the entrance to the NSTA exhibits. See page 55 for details.

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* or call 1.800.722.6782

NSTA National Science Teachers Association

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

Crafting a College-ready and Career STEM Workforce for the Future

Spirit, opportunity, and innovation help drive development in our rapidly changing world. In preparing today's students for a dynamic and evolving workforce, we must equip them with the skills for all jobs, even those that do not yet exist. Educators are instrumental in preparing students to meet the demands of college and/or careers. This strand will highlight classroom practices that emphasize skills in critical thinking, leadership, problem solving, collaboration, communication, media, and technology in the context of Science, Technology, Engineering, and Mathematics (STEM) education.

Leveraging Multidimensional Resources to Enhance 21st-Century Learning

Current research shows that American creativity is declining. Creativity and imagination are critical to scaffolding learning that develops a culture of innovation in today's global community. To be creative requires divergent thinking (generating many unique ideas) and then convergent thinking (combining those ideas into the best result). In order to achieve this, our classrooms must be multidimensional learning environments that incorporate virtual, home, and informal experiences, as well as a traditional school setting. This strand focuses on skills, strategies, and resources that enhance today's teaching and learning environments in order to promote global learning communities driven by creativity and innovation.

Sustaining Science Success for All Students

Today's students need opportunities to learn in many different ways. This presents challenges to educators, including addressing the needs of English language learners, special needs students, and advanced and below-grade-level students. The effective science teacher uses innovative, research-based instructional strategies to facilitate achievement in science for all students. These include interventions, differentiated instruction, multiple representations, engagement strategies to motivate learners, project-based learning, and brain-based learning. This strand will increase participants' knowledge of and expertise in the implementation of these and other innovative methodologies, helping students achieve academic success.

Crafting a College-ready and Career STEM Workforce for the Future

Thursday, November 10

8:00–9:00 AM
STEM Research Made Visible!

12:30–1:30 PM
The Formal-Informal Education Collaboration—One Example

1:00–4:30 PM
SC-2: SciOly Engineering Design Challenges
(Tickets required: $25)

2:00–3:00 PM
Featured Presentation: Applying STEM Education: Restoring the Wounded Soldier Through Neuroscience, Engineering, and Imagination
(Speaker: Col. Geoffrey Ling)

3:30–4:30 PM
STEM in Action—I'm Ready for the Real World!

Friday, November 11

8:00–9:00 AM
Wind Power

8:00–11:00 AM
SC-3: An Inquiry Approach to the Solar System
(Tickets required: $11)

9:30–10:30 AM
Teach Science Inquiry Skills via Killing the Electric Car

11:00 AM–12 Noon
Nano-Size Me: Helping Students Understand Size-dependent Properties

12:30–1:30 PM
NASA INSPIRE Project

2:00–3:00 PM
21st-Century Learning: Mission Possible

3:30–4:30 PM
Real-World Math: Engaging Students with Math and Science Through Global Issues

Saturday, November 12

8:00–9:00 AM
Use Science Olympiad to "STEM"ulate Student Engagement in Science

9:30–10:30 AM
Climate Expeditions: Checking Out Your Team

11:00 AM–12 Noon
Sneaking in STEM

Leveraging Multidimensional Resources to Enhance 21st-Century Learning

Thursday, November 10

8:00–9:00 AM
Climate Change: Global Connections and Sustainable Solutions

12:30–1:30 PM
Beyond the Chalkboard: Rejuvenating Classroom Favorites with New School Technology

2:00–3:00 PM
Teaching the Carbon Cycle in an Urban Setting

3:30–4:30 PM
iPads—From Apps to Lessons

3:30–4:30 PM
Tune In! Using Multimedia and Online Collaboration in Your Formative Assessment

Friday, November 11

8:00–9:00 AM
Saved Our Lake, Let's Save Our Coast

8:00–11:30 AM
SC-5: Build Your Own Video Game
(Tickets required: $23)

9:30–10:30 AM
Featured Presentation: Cool Computer Activities for Science and Social Studies
(Speaker: Tammy Worcester)

11:00 AM–12 Noon
NASA CERES S'COOL Project: Be a S'COOL Cloud Observer!

12:30–1:30 PM
Forests, Carbon, and Climate Change

1:00–4:00 PM
SC-8: Adventures Beyond the Classroom: Exploring Local Biodiversity
(Tickets required: $18)

2:00–3:00 PM
Forensics Science Can Turn Every Science into a Relevant Science

3:30–4:30 PM
Dazzling Deceptions: Discrepant Events That Delight and Mystify!

Saturday, November 12

8:00–9:00 AM
Hands-On/Minds-On Science: Using Interactive White Board and Hands-On Activities to Reach All Learners

10:00–10:30 AM
Integrating Informal Science Experiences into Classroom Curricula

11:00 AM–12 Noon
Exciting Engineering Projects

Sustaining Science Success for All Students

Thursday, November 10

8:00–9:00 AM
Fun with Plants: Every Plant Has a Story to Tell

1:00–1:30 PM
Using the Rules of Comedy Improv to Enhance Your Classroom

2:00–3:00 PM
Case Study Cavalcade

3:30–4:30 PM
Scaffolded Inquiry: Success for All Students

Friday, November 11

8:00–9:00 AM
Biology Bob: The Wonders of Life

Plan a Stellar Science Night—Even on a Black Hole Budget!

8:00–11:00 AM
SC-4: Brain Basics for Dummies: Classroom Applications That Make a Difference
(Tickets required: $51)

9:30–10:30 AM
Texas Teacher Rocks the Science World

11:00 AM–12 Noon
Kinesthetic Is Kool

12:30–1:30 PM
Using Science Stories to Teach Chemistry

1:00–4:00 PM
SC-7: Developing a "Naturalist" Approach in the Teaching of Science Concepts and Inquiry
(Tickets required: $71)

2:00–3:00 PM
Featured Presentation: All Eyes on Brain-STEM: Merging Brain Research and STEM Education to Reach All Students
(Speaker: Kenneth Wesson)

3:30–4:30 PM
NASA: Size and Scale of the Universe

Saturday, November 12

8:00–9:00 AM
Science Success: How Do I Spell Thee in an All-inclusive Learning Environment?

9:30–10:30 AM
Just a Theory: Using the Evolution Discussion to Teach the Nature of Science

11:00 AM–12 Noon
Bring Literacy and Science Together: "B.L.A.S.T."© for Success at School and Home

NSTA Exemplary Science Program (ESP)

Meeting the Reform Features Recommended in the National Science Education Standards

Thursday, November 10, 2:30–4:30 PM
Room R07, Morial Convention Center

The ESP series identifies people and places where the reforms recommended have emerged, including 1) Exemplary Science in Grades PreK–4; 2) Exemplary Science in Grades 5–8; 3) Exemplary Science in Grades 9–12; 4) Exemplary Science: Best Practices in Professional Development; 5) Inquiry: The Key to Exemplary Science; 6) Exemplary Science in Informal Education Settings; and 7) Exemplary Science for Resolving Societal Challenges. The exemplars are discussed in ESP symposia at all NSTA conferences.

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

Symposium Participants:

Coordinators: Pradeep M. Dass, Appalachian State University, Boone, N.C., and Susan Koba, NSELA President, Omaha, Neb.

Inquiry: Changing the Teaching of Science (from ESP #5)
Holly P. Harrick, Connecticut Science Center, Hartford

"Why Wasn't I Taught This Way?" (from ESP #5)
Joseph I. Stepans, University of Wyoming, Laramie

Engineering Day at NSTA

Sponsored by the American Society for Engineering Education

Friday, November 11, 8:00 AM–4:30 PM
Room 225, Morial Convention Center

The American Society for Engineering Education (ASEE) has put together a public/private partnership to develop ways of engaging elementary, middle, and high school students in engineering. Participants will learn about innovative, hands-on, project-based engineering activities, courses, curriculum options, events, outreach programs, and competitions that both encourage students to pursue engineering careers and enable teachers to learn about and experience engineering. Presenters will share lessons learned and examples of inquiry and design activities that have been developed in partnership with middle and high school science teachers for use in the classroom and in informal educational settings. The materials result from a collaboration of engineering educators and STEM professionals working with the U.S. Department of Defense, NASA, Robotics Education and Competition Foundation, and Autodesk.

8:00–9:00 AM	**eGFI: Engineering, Go For It!—Dream Up the Future** (p. 75)
9:30–10:30 AM	**UTeach*Engineering*: NASA Design Challenges** (p. 82)
11:00 AM–12 Noon	**Using Project-based Engineering to Engage Middle School Students** (p. 88)
12:30–1:30 PM	**VEX Robotics in the Classroom and in Competition** (p. 94)
2:00–3:00 PM	**NASA's BEST Students (Beginning Engineering, Science, and Technology)** (p. 100)
3:30–4:30 PM	**eGFI: Engineering, Go For It!—Dream Up the Future** (p. 105)

ACS Chemistry for Life™

Chemistry Day at NSTA

Equilibrium, Le Chatelier, and Rate

For Grades 9–12

Friday, November 11, 8:00 AM–4:30 PM

R08, Ernest N. Morial Convention Center

Sponsored by the American Chemical Society

En Engage in activities, discussion, analyses, and assessment that help understanding of the relationships among equilibria, Le Chatelier's principle, and rates and their roles in moving toward a more sustainable use of Earth's resources.

Education research indicates a positive correlation between teacher content knowledge and student learning. The goals of this special program are to enhance and enrich secondary chemistry teachers' knowledge of and interrelationships among equilibria, Le Chatelier, and rates through engagement in activities, discussion, and analyses that demonstrate how lessons on these concepts can be presented in a way that stimulates student thinking and prompts exploration of the complexity of the concepts as they relate to sustainability.

The content and structure of the program draws on several decades of experience the American Chemical Society has in activity-based curricula development that include incorporation of sustainability and Green Chemistry principles. Chemistry Day is a daylong series of lessons on equilibria, Le Chatelier's principle, and rates—topics central to understanding the behavior of matter and chemical change. A complementary theme is incorporating activities as part of the assessment of student learning.

8:00–9:00 AM	**Equilibrium and Concentration** (p. 78)
9:30–10:30 AM	**Equilibrium and Energy** (p. 85)
11:00 AM–12 Noon	**Rate** (p. 91)
12:30–1:30 PM	**Catalysis** (p. 96)
2:00–3:00 PM	**Light as a Reactant and/or Product** (p. 101)
3:30–4:30 PM	**Half-Life** (p. 107)

Middle School Chemistry Day

Big Ideas About the Very Small

Friday, November 11, 8:00 AM–4:30 PM

R07, Ernest N. Morial Convention Center

Sponsored by the American Chemical Society

Come to one, two, or as many sessions as you like during this full day of activities and information for teaching and learning middle school chemistry. Staff from the American Chemical Society (ACS) will introduce participants to the new free online resource *middleschoolchemistry.com*. Each of the six sessions will include hands-on activities and explanations from the website that participants can easily incorporate into their teaching to support their current textbook and curriculum. Handouts of the session activities will be available for all participants.

8:00–9:00 AM	**Solids, Liquids, and Gases: The Kinetic-molecular Theory of Matter** (p. 77)
9:30–10:30 AM	**Changes of State: Evaporation and Condensation** (p. 85)
11:00 AM–12 Noon	**Density—A Molecular View** (p. 90)
12:30–1:30 PM	**The Periodic Table, Energy Levels, and Bonding** (p. 96)
2:00–3:00 PM	**Polarity of the Water Molecule and Its Consequences** (p. 101)
3:30–4:30 PM	**Chemical Change: Breaking and Making Bonds** (p. 107)

This form is for planning purposes only. Do NOT submit to NSTA.

NSTA 2011 New Orleans Area Conference
Professional Development Documentation Form

All attendees can evaluate concurrent teacher and exhibitor sessions online while simultaneously tracking professional development certification (based on clock hours). Use this form to keep track of all sessions/events attended during the New Orleans conference. Sessions/events such as field trips, short courses, featured speakers, the General Session, meetings, and exhibit hall visits are not available for online evaluation. However, these events still qualify for professional development.

Beginning November 29, 2011, New Orleans transcripts can be accessed at the NSTA Learning Center *(learningcenter.nsta.org)* by logging on with your New Orleans Badge ID# and then clicking on "My PD Record and Certificates." Keep this form and use it to add the following activities to your New Orleans transcript. Completed transcripts can be printed from this website and presented to an administrator who requires documentation of participation in the conference. All information in these transcripts will be maintained (and can be accessed) indefinitely as part of an attendee's individual profile.

First Name: _____ **Last Name:** _____ **Badge ID#** _____

Visit ***m.nsta.org*** to evaluate sessions via your smartphone, or go to ***www.nsta.org/evaluations*** to evaluate sessions (workshops, presentations, and exhibitor workshops) online. See page 14 of the conference program for instructions. ***And don't forget, the more sessions you attend and evaluate, the more chances you have to win a Kindle Fire!***

Sample Questions:

1. I selected this session:
   a. for immediate classroom use.
   b. based on the reputation of the speaker.
   c. to improve my personal pedagogical knowledge/skill.
   d. to improve my science content knowledge.
2. The session met my needs.
3. The information presented was clear and well organized.
4. Safe practices were employed.
5. The session avoided commercial solicitation (n/a for exhibitor workshops and NSTA Press sessions).
6. The session should be repeated at another NSTA conference.

Sample Responses:
1=Strongly Agree 2=Agree 3=Neutral 4=Disagree 5=Strongly Disagree

Wednesday, November 9 8:00 AM–5:00 PM

Start Time	End Time	Activity/Event Title

We're giving a Kindle Fire to one lucky attendee who evaluates sessions that he or she attends. The more sessions you attend and evaluate, the more chances you have to win!

Thursday, November 10 8:00 AM–9:00 PM

Start Time	End Time	Activity/Event Title

Friday, November 11 8:00 AM–5:30 PM

Start Time	End Time	Activity/Event Title

Saturday, November 12 8:00 AM–4:00 PM

Start Time	End Time	Activity/Event Title

Biology Day at NSTA

Sponsored by the National Association of Biology Teachers

Friday, November 11, 8:00 AM–4:30 PM

R05, Ernest N. Morial Convention Center

NABT is proud to present Biology Day. Join us for a day of sessions designed to give you the resources and tools you need to excel as a biology and life science teacher. Featuring informative speakers and hands-on workshops, Biology Day sessions will help local teachers build and organize their own community while learning about immunology, taxonomy, phylogenetic trees, and free educational apps for smartphones and digital pads and tabs. From free resources to expert tips, Biology Day provides relevant information and pedagogy for every biology teacher at every level. Enhance your teaching, engage your students, and enjoy NABT Biology Day in NOLA!

8:00–9:00 AM	**Stand Up for REAL Science: Unite to Fight Attempts to Legislate Nonscience in the Classroom** (p. 76)
9:30–10:30 AM	**Teaching Viruses, Diseases, and Immunology with Free Resources from the Howard Hughes Medical Institute** (p. 85)
11:00 AM–12 Noon	**Seashell Taxonomy: A Venomous Topic** (p. 90)
12:30–1:30 PM	**Phylogenetic Trees: How to Illustrate Evolutionary Relationships Using Real Data** (p. 95)
2:00–3:00 PM	**Applicious Science** (p. 99)
3:30–4:30 PM	**Reorganize and REVITALIZE with the Louisiana Association of Biology Educators** (p. 106)

Physics Day at NSTA

Sponsored by the American Association of Physics Teachers (AAPT) and the Louisiana Section of AAPT

Friday, November 11, 8:00 AM–3:00 PM

R06, Ernest N. Morial Convention Center

The American Association of Physics Teachers offers a full day of physics content. Physics Day consists of presentations on physics topics of current interest, physics demonstrations for the pre-college classroom, and a make-and-take session where participants can construct a piece of physics apparatus for use as a demonstration or as laboratory experiment. Physics Day in New Orleans is being organized by the Louisiana Section of the American Association of Physics Teachers.

8:00–9:00 AM	**Physics from the Internet** (p. 76)
9:30–10:30 AM	**Nano Self-Assembly: Modeling Force and Motion** (p. 85)
11:00 AM–12 Noon	**Simple and Inexpensive Physics Demos** (p. 89)
12:30–1:30 PM	**The Ultra-sensitive Electroscope** (p. 96)
2:00–3:00 PM	**Forces, Motion, and Newton's Laws: The Hovercraft** (p. 99)

NSTA Press Sessions

NSTA Press® offers new classroom ideas and standards-based strategies, from Earth science to nanoscience and from preK to college. Join NSTA Press authors for these sessions linked to the topics of their books.

Thursday, November 10

2:00–3:00 PM — *Picture-Perfect Science, Grades 3–6* (p. 65)

Linking Science, Math, and Art Instruction (p. 65)

3:30–4:30 PM — Team Teaching Science: You Can Do It! (p. 70)

Friday, November 11

9:30–10:30 AM — *Picture-Perfect Science, K–4* (p. 84)

11:00 AM–12 Noon — A Framework and Tools to Make Tough Grades 3–5 Science Topics Approachable (p. 90)

Saturday, November 12

8:00–9:00 AM — Bringing Outdoor Science into Your Classroom (p. 112)

NSTA Avenue Sessions

Visit the NSTA Avenue (Booth #639), our marketplace in the Exhibit Hall, to learn about member benefits, products and services, programs and partners…all created for you! Meet staff, register for the NSTA Learning Center, learn about NSTA Communities, or become a member. We're looking for connections to educators with a passion for science education, and we welcome you to our network.

Thursday, November 10

3:30–4:30 PM — America's Home Energy Education Challenge (p. 70)

Friday, November 11

8:00–9:00 AM — America's Home Energy Education Challenge (p. 76)

11:00 AM–12 Noon — Toshiba/NSTA ExploraVision (p. 88)

12:30–1:30 PM — Disney's Planet Challenge: Project Based Learning and Service Learning–based Lesson Development and Funding (p. 94)

2:00–3:00 PM — The NSTA Learning Center: Free Professional Development Resources and Opportunities for Educators (p. 98)

3:30–4:30 PM — Communicate, Collaborate, and Create: Changing Your Classroom and the World (p. 105)

Wednesday, November 9

FOSS Middle School Institute
By Invitation Only
La Galerie 4, Marriott.....8:00 AM–5:00 PM

FOSS K–5 2012 Revision
By Invitation Only
La Galerie 5, Marriott.....8:00 AM–5:00 PM

FOSS Luncheon
By Invitation Only
La Galerie 6, Marriott.....12 Noon–1:00 PM

Thursday, November 10

Publish with NSTA's Journals
201, Convention Center.....11:00 AM–12 Noon

Science Education in the Community Meeting
224, Convention Center.....11:00 AM–12 Noon

CESI Board Meeting
By Invitation Only
La Galerie 4, Marriott..... 3:00–9:00 PM

Friday, November 11

Council for Elementary Science International (CESI) Breakfast
(Tickets required: M-1; $34)
Speaker: Steve Rich
R02, Convention Center..... 8:00–10:00 AM

Preservice and New Teachers Luncheon
(Tickets required: M-2; $12)
Sponsored by Kendall Hunt Publishing Co.
R02, Convention Center.....12 Noon–1:30 PM

LSTA Awards Social
By Invitation Only
R02/R03, Marriott..... 5:00–6:30 PM

Saturday, November 12

AMSE Board Meeting
By Invitation Only
Regent, Marriott .....9:00–11:00 AM

Council of State Science Supervisors Regional Meeting
By Invitation Only
Bonaparte, Marriott .....9:00 AM–3:00 PM

The Picture-Perfect Science Preconference Workshop (C-1) is presented by Karen Ansberry and Emily Morgan, classroom veterans and award-winning authors of Picture-Perfect Science Lessons, Expanded 2nd Edition, 3–6 *and* More Picture-Perfect Science Lessons, K–4.

Tickets for this preconference workshop were available by preregistration only.

Picture-Perfect Science Preconference Workshop (C-1)

Karen Ansberry *(karen@pictureperfectscience.com),* Classroom Veteran and Award-winning Author of *Picture-Perfect Science Lessons, Expanded 2nd Edition, 3–6* and *More Picture-Perfect Science Lessons, K–4,* Mason, Ohio

Emily R. Morgan *(emily@pictureperfectscience.com),* Classroom Veteran and Award-winning Author of *Picture-Perfect Science Lessons, Expanded 2nd Edition, 3–6* and *More Picture-Perfect Science Lessons, K–4,* West Chester, Ohio

Level: Elementary

Date: Wednesday, November 9, 8:30 AM–3:30 PM

Location: La Galerie 1, Marriott

STEM education begins in elementary school, but it can be difficult for elementary teachers to fit science into the school day. Picture-Perfect Science integrates science and reading in a meaningful way, so you can teach both subjects at once. In this workshop, you will participate in model lessons that integrate science and reading, learn the benefits and cautions of using children's picture books in science, become familiar with the BSCS 5E model, and receive a bibliography of recommended science-related picture books. All attendees will also receive a copy of *Picture-Perfect Science Lessons, Expanded 2nd Edition, 3–6,* a $36.95 value containing 20 classroom-ready lessons for grades 3–6. Come to this Picture-Perfect Science Workshop and rejuvenate elementary science instruction in your district or school!

Admission to NSTA short courses is by ticket only. Tickets, if still available, can be purchased at the Ticket Sales Counter in the NSTA Registration Area.

Teaching Astronomy with Small Telescopes (SC-1)

Robert T. Sparks *(rsparks@noao.edu),* **Stephen M. Pompea** *(spompea@noao.edu),* and **Constance E. Walker** *(cwalker@noa.edu),* National Optical Astronomy Observatory, Tucson, Ariz.
Level: Middle Level–College
Date: Thursday, November 10, 1:00–4:00 PM
Location: La Galerie 2, Marriott
Registration Fee: $63

Teach astronomy by having your students make their own discoveries much like Galileo did more than 400 years ago. The Galileoscope™ can see the rings of Saturn, craters on the Moon, the phases of Venus, the moons of Jupiter, and countless other celestial wonders. In this short course, you will learn how telescopes collect and focus light as well as assemble a Galileoscope. Emphasis will be placed on the types of observations that can be made by students at home with a focus on recreating Galileo's historic observations. Engage in a series of hands-on activities involving refraction of light, how to find the focal point of a lens, and how lenses can be combined to make a small refracting telescope. All of the activities use low-cost, readily available materials and have been extensively tested in the classroom.

SciOly Engineering Design Challenges (SC-2)

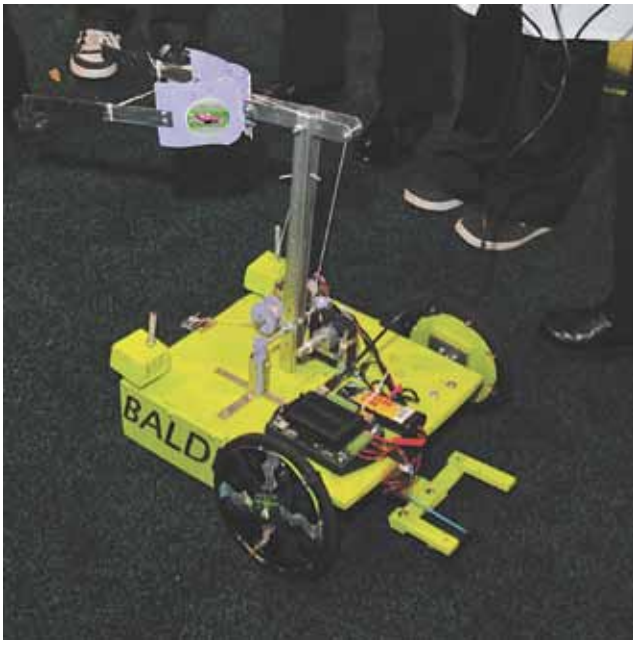
Chris T. Campbell *(ccampbell@lincolnschools.org),* NSTA Director, District VII, and Simsboro High School, Simsboro, La.
Stacy R. Campbell *(scampbell@lincolnschools.org),* I.A. Lewis Elementary School, Ruston, La.
Level: Grades 6–12
Date/Time: Thursday, November 10, 1:00–4:30 PM
Location: La Galerie 3, Marriott
Registration Fee: $25

Science Olympiad offers a great way of integrating STEM in a competitive and challenging setting. It is for grades 6–9 *(division B)* and grades 9–12 *(division C)*. Learn how to build a Science Olympiad team at your school, pertinent rules, and how Olympiad can foster engineering design, innovation, and discovery. Students work in teams to design, construct, and experiment with their own creations. They even take the tests in teams! Receive an overview of all 46 activities *(23 in each division)* with emphasis on the engineering design/building events. Each participant will receive a division B or C rules manual and a CD with additional resources. Please bring a notebook and pencil for record keeping.

An Inquiry Approach to the Solar System (SC-3)

Lisa O. Brown *(lisa.r.brown@nasa.gov),* NASA Johnson Space Center, Houston, Tex.
Level: Middle Level
Date/Time: Friday, November 11, 8:00–11:00 AM
Location: La Galerie 1, Marriott
Registration Fee: $11

Journey on an "inquiry tour" of our solar system and universe and return back to your classroom with education resources to integrate into your existing science curriculum. Compare and contrast the planets, explore our Earth and Moon system, examine our Sun, and explore beyond our solar system with NASA's solar system and astronomy curriculum resources. NASA has incorporated science and the human spirit of exploration to study and understand our solar system and universe since *Explorer I* was launched in 1958. For more details about the short course, visit *http://sites.google.com/site/spacelink4teachers/home* as well as *www.nasa.gov*.



Brain Basics for Dummies: Classroom Applications That Make a Difference (SC-4)

Kathy Brandon, Christy Bucker, Laurie Ilgenfritz, Robert Sayers, and **Wendy Jordan,** STARBASE Louisiana, Barksdale Air Force Base
Level: General
Date: Friday, November 11, 8:00–11:00 AM
Location: La Galerie 3, Marriott
Registration Fee: $51

Gain an awareness of "brain-friendly" teaching and learning strategies. In this short course, you'll receive an overview of fundamental background knowledge and recent findings in educational neuroscience with specific classroom applications. Learn how to structure lessons, activities, and peripheral surroundings for optimum learning. This paradigm shift, from a focus on the teacher to a focus on the learner, transforms the classroom into a combination of masterfully orchestrated details that enhance learning. Topics include memory pathways, attention and processing cycles, emotional engagement, framing activities, physiological factors, questioning strategies, and classroom-tested applications.

Build Your Own Video Game (SC-5)

Erik Nickerson *(erik@olotolo.com), www.olotolo.com,* Boulder, Colo.
Level: General
Date: Friday, November 11, 8:00–11:30 AM
Location: La Galerie 2, Marriott
Registration Fee: $23

This short course will be "hands on" from the start with programming concepts introduced in steps as we build a simple video game. No previous programming experience required. Take away programming techniques for game design as well as tools for converting classroom material into an interactive digital interface. Learn how to build user-controlled animations, including explicitly solved animations such as projectile motion. Also, learn how to create animations, simulations, storybooks, and multiple-choice maze games. The short course ends with a review of resources for learning more about ActionScript programming as well as other useful programming environments for the classroom, such as Scratch and Inform 7. Bring your laptop with Flash CS5.5 or Flash CS 5. Questions? Feel free to stay late for a Q&A with the instructor. For more details, visit *www.olotolo.com*.

Mass *vs.* Weight: A Heavy-Duty Concept (SC-6)

Steve Culivan *(stephen.p.culivan@nasa.gov),* NASA Stennis Space Center, Miss.
Level: Upper Elementary–Middle Level
Date: Friday, November 11, 12:30–4:30 PM
Location: La Galerie 1, Marriott
Registration Fee: $11

The terms mass and weight are often used interchangeably even though they have very different meanings. We can measure weight here on Earth, but not in the microgravity environment on the International Space Station (ISS). Mass plays a critical role in the activities and experiments performed by the astronauts. Each activity in this short course will demonstrate the difference between mass and weight by comparing results with video clips filmed by astronauts performing similar activities onboard the ISS. These activities will guide participants on an exploration of mass, weight, volume, microgravity, and Newton's Laws of Motion. A copy of the NASA DVD containing the activities and video clips will be provided to each participant. For more details, visit *http://education.ssc.nasa.gov/massvsweight.asp*.

Developing a "Naturalist" Approach in the Teaching of Science Concepts and Inquiry (SC-7)

William J. Klein, Western Iowa Tech Community College, Sioux City
Level: General
Date: Friday, November 11, 1:00–4:00 PM
Location: La Galerie 3, Marriott
Registration Fee: $71

Many of today's students lack knowledge of the natural world with some educators labeling them "nature deficient." Because they have never studied firsthand the most common organisms, students frequently have difficulty correlating concepts described in their texts with actual life cycles, adaptations/behaviors of living organisms. This presentation describes hands-on inquiry activities and strategies, which research has validated as effective, to enhance comprehension of science concepts for all learners: visual, aural, tactile, and ELL. Students employ basic science process skills and experience concepts in the context of their meaning. The knowledge and skills gained through interaction with the natural world of lawns, gardens, waters, and creatures will benefit students the rest of their lives. Handouts, teaching strategies, and a CD are provided.

Adventures Beyond the Classroom: Exploring Local Biodiversity (SC-8)

Joanna Snyder *(joanna_snyder@berkeley.edu),* and **Erica Beck Spencer** *(ebspencer@berkeley.edu)*, Lawrence Hall of Science, University of California, Berkeley

Level: Grades 3–10
Date: Friday, November 11, 1:00–4:00 PM
Location: La Galerie 5, Marriott
Registration Fee: $18

Educators and ecologists at the Lawrence Hall of Science developed Outdoor Biology Instructional Strategies (OBIS), a collection of activities designed to strengthen connections between the natural world and concepts being learned in both formal and informal learning environments. Experience inquiry-based outdoor instructional strategies that can help you authentically investigate your local biodiversity. Participants will learn strategies for managing students, examine case studies of schools that have changed their learning culture to incorporate the local environment, receive access to instructional resources created at the Lawrence Hall of Science, and plan next steps. *Note:* Dress for the weather as most of this course will be outdoors, rain or shine.

Photo courtesy of Chabot Space & Science Center

Teachers from Oakland Unified School District assemble Galileoscopes at a workshop in October 2009 (SC-1).

—Photo courtesy of Insta-Gator Ranch

—Photo of a Frog Beetle courtesy of Audubon Insectarium

Tickets for field trips may be purchased (space permitting) at the Ticket Sales Counter in the NSTA Registration Area. Meet your field trip leader in the lobby near the La Louisiane Ballroom of the Ernest N. Morial Convention Center 15 minutes before departure time.

Hermann-Grima/Gallier Historic Houses: Adventures in Archaeology for Educators $25

#T-1 Thursday, Nov. 10 10:30 AM–12:30 PM

Join us for a special tour of the Hermann-Grima/Gallier Historic Houses in the French Quarter. Discover the architectural and engineering innovation of James Gallier, Jr., at the Gallier House. Enjoy a stroll through Gallier's elegant Victorian home, authentically restored to reflect the taste and lifestyle of a successful urban designer in mid-19th-century New Orleans. Experience this wonderfully furnished home, built in 1860, with its courtyard garden, elegant carriageway, and slave quarters. We will also walk through the Hermann-Grima House, a meticulously restored residence, where you'll experience the Golden Age of New Orleans. This handsome Federal mansion, built in 1831, boasts the only horse stable and functional outdoor kitchen in the Quarter.

LIGO Science Education Center: Inspiring Science $21

#T-2 Thursday, Nov. 10 11:30 AM–5:15 PM

The Laser Interferometer Gravitational-Wave Observatory (LIGO) Science Education Center fuses a cutting-edge research observatory with a modern science center. The observatory is one of only two gravitational-wave observatories in the United States (five worldwide). The Science Education Center focuses on teacher professional development and informal science opportunities. Participants will get a chance to peek behind the scenes to see how LIGO hopes to detect ripples in space-time caused by colliding black holes and neutron stars; tour an instrument with 4 km long arms under a vacuum that's better than outer space; and explore 5,000 square feet of science center exhibits designed by San Francisco's Exploratorium. Staff scientists will be on hand to answer your questions about the cosmos. You can also experiment with small science interactives that can easily be recreated for your classes. Lunch included. Take home gravitational-wave posters.

Wetland Watchers Park $26

#T-3 Thursday, Nov. 10 11:45 AM–4:15 PM

St. Charles Parish Wetland Watchers Park will take you the farthest you can go into the historic LaBranche wetlands without a boat! You will have the opportunity to experience Louisiana fauna and flora like nowhere else. You will have hands-on opportunities with baby alligators and other wetland critters as well as a guided tour on the extensive nature trails. Middle school students will be on hand as expert guides and to share their experiences. Visitors will have a chance to sample some genuine Louisiana cuisine and receive an official Wetland Watchers T-shirt! Wetland

Watchers Park is the result of Hurst Middle School's nationally recognized service-learning project, the LaBranche Wetland Watchers. In 2004, 28 acres of land were donated to St. Charles Parish in the name of the Wetland Watchers service-learning project for the land to be used for restoration, education, and recreation. Water and a taste of Louisiana cuisine provided. *Note:* Bring hats and cameras and wear comfortable shoes and weather-appropriate clothing.

Bringing Nature, Technology, and Students Together at Mandeville's Constructed Wetlands $35

#T-4 CANCELED Thursday, Nov. 10 11:45 AM–5:00 PM

Joining technology with natural processes, the City of Mandeville's constructed wetlands perform the dual function of cleaning the city's wastewater and providing an attractive habitat for the many birds, reptiles, and mammals that visit it. Come find out how man's ingenuity, nature's resources, and students' curiosity come together to create exciting learning opportunities. Learn about some of the environmental science field trip offerings, conduct water quality tests in a cypress/tupelo swamp, and observe animals that call Mandeville's constructed wetlands "home"—as you learn how technology joins hands with nature to make a difference in Mandeville. Bring your binoculars! Box lunch provided. We are not equipped to handle wheelchairs on the tour unless the visitor can physically climb onto the wagon that is used to take the tour. All other facilities are wheelchair accessible.

Canoe in Bayou Sauvage Refuge with Follow-up at UNO's Coastal Education and Research Facility $80

#T-5 SOLD OUT Thursday, Nov. 10 1:30–7:00 PM

The University of New Orleans's Coastal Education and Research Facility (CERF) is in the brackish marshes east of New Orleans. Adjacent to Bayou Sauvage National Wildlife Refuge, it is a place of great natural beauty abounding with wildlife—especially birds. The trip will include a canoe excursion in the refuge where each winter wildfowl of great variety gather as the weather cools in the north and pushes the birds south to overwinter. We should also spot some alligators. We will end our canoe trip around sunset and drive the short distance to our CERF building where we can enjoy a light meal while getting an overview of the science activities that take place there for K–12 students. *Note*: Participants should dress appropriately for outdoors for the weather at the time (it could be chilly, but November in New Orleans is unpredictable). Wear shoes that can get wet or muddy. Bring binoculars!

Tour of Audubon Insectarium $16

#T-6 Thursday, Nov. 10 2:45–5:30 PM

Audubon Insectarium is a museum featuring 23,000 square feet of exhibits. Included in this one-of-a-kind facility are roughly 70 live displays of insects and other arthropods, an interactive short film with special effects built in, and even a bug-eating area! Zack Lemann, visitor programs manager, will lead the tour through the Insectarium adding fascinating details about everything from the natural histories of the species there to how they are acquired and cared for (ever wonder how the dung beetles are fed?), and a history of the museum's design and construction will be offered as well. *Note*: Personal ID may be of value in case the group stays after 5:00 PM. If it cannot go on an airplane, it cannot come into the building (pocket knives, etc.).

Cajun/Creole Demonstration Cooking Class and Dinner $35

#T-7 Thursday, Nov. 10 5:00–8:00 PM

"Make Your Mouth Happy!" Welcome to the fun, food, and folklore of the New Orleans School of Cooking! Our entertaining class and the Louisiana General Store are located in a renovated molasses warehouse built in the early 1800s. We will teach you the basics of Louisiana cooking in a way you'll never forget. Fun is the primary ingredient in our kitchen! Our Creole/Cajun experts teach New Orleans specialties such as gumbo, jambalaya, Shrimp Creole, and pralines—and season them with history, tall tales, and trivia. The school is located in the heart of the French Quarter, between Decatur and Chartres streets, and just three blocks from Jackson Square. *Note*: Please inform them before the class date if you have food allergies or religious restrictions on your diet.

Audubon Zoo—Behind the Scenes and More! $59

#F-1 Friday, Nov. 11 8:00 AM–12:30 PM

Learn how to make your trip to any zoo more than just a field trip. You will receive a booklet full of pre-visit lessons, scavenger hunts, and on-site activities. We will also get a behind-the-scenes look at the inner workings of the Audubon Zoo. Take a guided tour and get a sneak peek at the staff areas behind some of our most popular exhibits. Find out what it takes to care for all of our animals and meet some special zoo residents! Bring your cameras and comfortable walking shoes for this rare opportunity. Participants can make a brief stop at one of the concession stands to purchase lunch for the short ride back to the convention center. *Note*: Some behind-the-scenes areas are not handicapped accessible. However, participants with limited mobility should be able to enjoy most of the tour.

Audubon Center for the Research of Endangered Species (ACRES) Tour **$37**

#F-2 Friday, Nov. 11 8:15 AM–12:45 PM

The Audubon Center for the Research of Endangered Species uses cutting-edge science to help save rare species throughout the world. Audubon Nature Institute's only nonpublic research facility, ACRES will open its doors for this unique opportunity to share with conference attendees what is being done to save endangered animals. Participants will get a walking tour of the laboratory facilities, a bus tour of the adjacent Species Survival Center, and a visit from a special ACRES "ambassador." Don't miss out on this very rare glimpse into this facility. *Note:* Remember to wear comfortable walking shoes.

Tour of Global Green House in Holy Cross Neighborhood of the Lower Ninth Ward **$27**

#F-3 Friday, Nov. 11 10:15 AM–12:15 PM

Global Green is dedicated to the sustainable rebuilding of New Orleans and the Gulf Coast. At the Green Building Resource Center, staff will provide an overview of Global Green's work with handouts on green building. Then the bus travels through the Lower Ninth Ward, offering passengers views of Make It Right Foundation houses, Preservation Resource Center rebuilds, Habitat for Humanity homes, and Musicians' Village. Along the way, there will be a stop for a guided tour of the Holy Cross Project Visitors Center—a LEED-for-Homes Platinum-rated, net-zero energy home village—for a firsthand look at sustainable building from the inside out. Learn about roof gardens, bioswales, energy-saving appliances, indoor air quality, solar energy, climate-conscious architecture, and other innovative features that make this housing a landmark of sustainable development, and one of the greenest homes in the United States. Knowledgeable guides welcome all and any questions. *Note:* During the house tour, please remove shoes or use shoe covers.

—Photo courtesy of the New Orleans School of Cooking.

Alligators: Protect, Sustain, and Utilize **$37**

#F-4 Friday, Nov. 11 12 Noon–5:15 PM

Insta-Gator Ranch participates in a world-renowned alligator ranching program. Directed by Louisiana Wildlife and Fisheries, this farm was developed to conserve the American alligator species and preserve the Louisiana wetlands. Your guided tour gives you a firsthand account of the Louisiana alligator industry. See the ultralight airplane and air boat used to harvest the eggs, while action film footage takes you into the wild. You'll see how the rancher locates the eggs in the marshes and cautiously removes the eggs from the nest. See alligators of various ages and sizes in crystal clear water. From protected walkways, you'll be able to see gators above and below the surface of the water; hatchlings of less than one foot to alligators that grow to more than four feet in one year, as well as the older fellas. For the braver in the group, there are opportunities to feed and hold the gators (*$5 extra charge to play with the gators, and $5 extra charge to take a picture with a gator—payable to facility on-site*). Bring your camera! Don't forget to snap up some deals at the gift shop.

Behind the Scenes at the Audubon Aquarium of the Americas **$35**

#F-5 Friday, Nov. 11 1:00–4:10 PM

Come get a behind-the-scenes look at the inner workings of the Audubon Aquarium of the Americas. Take a guided tour and get a sneak peek at the staff areas behind our Caribbean Tunnel and the big Gulf of Mexico shark tank. Find out what it takes to feed all of the animals and meet a special aquarium resident! Bring your cameras and comfortable walking shoes for this rare opportunity. *Note:* Some behind-the-scenes areas are not handicapped accessible. However, participants with limited mobility should be able to enjoy most of the tour.

Association for Multicultural Science Education (AMSE)

President: Eddie A. Chevis

Friday, November 11

9:30–10:30 AM	Using STEM for Medical Career Exploration	201, Convention Center

Saturday, November 12

9:00–11:00 AM	AMSE Board Meeting	Mardi Gras C, Marriott

Association for Science Technology Centers (ASTC)

President: R. Bryce Seidl

Thursday, November 10

12:30–1:30 PM	STEM, Louisiana Wetlands Restoration, and Student Success	224, Convention Center

Council for Elementary Science International (CESI)

President: Kay Atchison Warfield

Thursday, November 10

3:00–9:00 PM	CESI Board Meeting	La Galerie 4, Marriott

Friday, November 11

8:00–10:00 AM	Council for Elementary Science International (CESI) Breakfast (Ticket M-1) Speaker: Steve Rich, Georgia Youth Science & Technology Centers, University of West Georgia, Carrollton	R02, Convention Center
11:00 AM–12 Noon	Council for Elementary Science International Share-a-Thon	R03, Convention Center
12:30–1:30 PM	Council for Elementary Science International Presents Opportunities Galore	R03, Convention Center

Council for State Science Supervisors (CSSS)

President: Peter McLaren

Saturday, November 12

9:00 AM–3:00 PM	CSSS Regional Meeting	Mardi Gras A, Marriott

National Association for Research in Science Teaching (NARST)

President: J. Randy McGinnis

Friday, November 11

9:30–10:30 AM	Strategies for Fostering Scientific Creativity in the Chemistry Classroom Center	232, Convention Center
	Bridging the Epistemological Gap for Out-of-School Time (OST) and Non-OST Science Learners	
11:00 AM–12 Noon	What Creationist Students May Be Thinking About as You Teach Evolution	232, Convention Center
	Teaching Elementary Science in the Age of School Reform: A Look at Teachers' Personal Agency Beliefs	

National Middle Level Science Teachers Association (NMLSTA)

President: Rajeev Swami

Thursday, November 10

8:00–9:00 AM	Kernels of Fun with Corn-based Plastics	R01, Convention Center
2:00–3:00 PM	Children Like Art but Hate Science; Let's Do Something About That	R09, Convention Center

National Science Education Leadership Association (NSELA)

President: Susan Koba

Friday, November 11

12:30–1:30 PM	Tools for Science Leaders	232, Convention Center
2:00–3:00 PM	Preservice Teachers Science Leadership: Collaborating in Support of New Teachers to Impact Student Learning	232, Convention Center

Society for College Science Teachers (SCST)

President: Brian Shmaefsky

Saturday, November 12

9:30–11:30 AM	Marooned in the Galápagos: A Scenario-based Approach to Teaching Evolution	R03, Convention Center

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8:00 – 9:30 AM	K-8 Science with Vernier
10:00 – 11:30 AM	Exploring Science with Vernier
12:00 – 1:30 PM	Exploring Science with Vernier
2:00 – 3:30 PM	Exploring Science with Vernier

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- One-on-one book signings with your favorite authors including Richard Konicek-Moran and Thomas Lord.
- All attendees get member pricing: 20% off all NSTA Press titles.
- Pick up the new Fall NSTA catalog!

Store Hours

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

Visit *www.nsta.org/store* to make a purchase today, or call 1-800-277-5300.

NSTA National Science Teachers Association

8:00 AM–5:00 PM Meetings

FOSS Middle School Institute
(By Invitation Only) *La Galerie 4, Marriott*

FOSS K–5 2012 Revision Meeting
(By Invitation Only) *La Galerie 5, Marriott*

8:30 AM–3:30 PM Preconference Workshop

Picture-Perfect Science Preconference Workshop (C-1)
(Elementary) *La Galerie 1, Marriott*
By Preregistration Only
Karen Ansberry *(karen@pictureperfectscience.com),* Classroom Veteran and Award-winning Author of *Picture-Perfect Science Lessons, Expanded 2nd Edition, 3–6* and *More Picture-Perfect Science Lessons, K–4,* Mason, Ohio
Emily R. Morgan *(emily@pictureperfectscience.com),* Classroom Veteran and Award-winning Author of *Picture-Perfect Science Lessons, Expanded 2nd Edition, 3–6* and *More Picture-Perfect Science Lessons, K–4,* West Chester, Ohio
For description, see page 36.

12 Noon–1:00 PM Luncheon

FOSS Luncheon
(By Invitation Only) *La Galerie 6, Marriott*


WWW.OMAHAZOO.COM

8:00–9:00 AM Presentations

SESSION 1

Ignite Your Students' Passion for Learning by Fueling Your Own! (Gen)

(General) *201, Convention Center*

Kristy Gilpin *(kristy.gilpin@zacharyschools.org)* and **Breigh Rainey** *(breigh.rainey@zacharyschools.org)*, Zachary Elementary School, Zachary, La.

Learn how you can travel the globe! Fund for Teachers awards fellowships for self-designed professional growth to preK–12 teachers passionate about making a difference.

SESSION 2

Get SIMulated! (Gen)

(Elementary–High School) *202, Convention Center*

Diane L. Kasparie *(dkasparie@quincynotredame.org),* Quincy Notre Dame High School, Quincy, Ill.

Online science simulations are research-proven, student-centered, relevant tools that empower great teaching and active learning! They are engaging and motivating, and aligned to state/national standards.

SESSION 3

Fun with Plants: Every Plant Has a Story to Tell (Gen)

(General) *219, Convention Center*

John W. Guyton *(jguyton@cfr.msstate.edu)* and **Lelia S. Kelly** *(leliak@ext.msstate.edu),* Mississippi State University, Mississippi State, Miss.

This session will feature fun and useful plant facts and activities to enrich your lessons and nurture a sustained student interest in searching for these secrets.

SESSION 4

Basic Polymer Chemistry for the High School Classroom (Chem)

(High School) *225, Convention Center*

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

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

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

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 143, 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

Strands

The New Orleans Conference Committee has planned the conference around the following three 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 28.

Crafting a College-ready and Career STEM Workforce for the Future

Leveraging Multidimensional Resources to Enhance 21st-Century Learning

Sustaining Science Success for All Students

Other Icons

The following icons will be used throughout this program.

NSTA Avenue Sessions

NSTA Press Sessions

SESSION 5

Kindergarten Scientific Illustrations (Gen)

(General) *226, Convention Center*

Andrea Zdinak Andretta, Jefferson Science Magnet School, Norwalk, Conn.

Kindergartners are very observant. Help them to focus when observing and to record what they see. Let's teach them how to draw scientifically.

SESSION 6

Grant Writing 101 (Gen)

(General) *228, Convention Center*

Mary Beth McCoy *(mccoy@opsb.net),* Ouachita Junior High School, Monroe, La.

Chris T. Campbell *(ccampbell@lincolschools.org),* NSTA Director, District VII, and Simsboro High School, Simsboro, La.

Presider: Stacy R. Campbell, I.A. Lewis Elementary School, Ruston, La.

The basics of grant writing are shared from presenters who have individually been awarded several grants from $250 to $10,000.

SESSION 7

The Internet Science and Technology Fair: Connecting Through CF STEM Connect (Gen)

(Elementary–High School) *231, Convention Center*

Robert M. Everett *(robert.everett@ucf.edu),* University of Central Florida, Orlando

Join me for an overview of the Internet Science and Technology Fair (ISTF) and Central Florida STEM Connect (CF STEM Connect).

SESSION 8

Oceans of Professional Development Opportunities Through NOAA (Gen)

(Middle Level–College) *232, Convention Center*

Lindsay Knippenberg *(lindsay.knippenberg@noaa.gov),* Einstein Fellow, NOAA, Washington, D.C.

Are you looking for professional development opportunities for STEM, oceans, climate, or weather? NOAA has several opportunities varying from a weekend to an entire year.

8:00–9:00 AM Workshops

Climate Change: Global Connections and Sustainable Solutions (Env)
(Middle Level–High School) 217, Convention Center
Pamela Whiffen *(pwpwr@aol.com),* NASA Educator Ambassador, Phoenix, Ariz.
Experience hands-on lessons that demonstrate the interconnectedness between natural systems and human actions using carbon footprints, emissions trading, and energy policy.

STEM Research Made Visible! (Gen)
(Middle Level–High School) 218, Convention Center
Brenda Nixon *(bnixon@lsu.edu),* Louisiana State University, Baton Rouge
Explore STEM and learn how to introduce research to students through hands-on activities from the Louisiana Research Experiences for High School Teachers 2011 Cohort (National Science Foundation program)!

Redesigning the Laboratory Investigation: Integrating Inquiry into Chemistry (Chem)
(High School) 222, Convention Center
Cece Schwennsen *(cschwenn@yahoo.com),* Cate School, Carpinteria, Calif.
Angela R. Powers, Metropolitan State College of Denver, Colo.
Learn how tried-and-true chemistry laboratory activities can be transformed into investigations that engage students while helping them to develop abilities for and understandings about inquiry.

The Physics of Supernovae (Phys)
(High School–College) 224, Convention Center
Pamela B. Perry *(pperry@lewistonpublicschools.org),* Lewiston High School, Lewiston, Maine
Donna L. Young *(donna@aavso.org),* Chandra E/PO Office, Cambridge, Mass.
Doug Lombardi *(lombardi.doug@gmail.com),* Southern Nevada Regional Professional Development Program, North Las Vegas
Use analysis software, graphs, and basic physics gravitation and centripetal acceleration equations to determine if an object is a white dwarf or a neutron star.

Modeling Populations (Env)
(Middle Level–High School) 229, Convention Center
Jacklyn Bonneau *(bonneau@wpi.edu),* Massachusetts Academy of Math & Science, Worcester
Population growth is an environmental concern that students can easily explore and model. Let's explore graphical representations and models as well as additional factors to add.

Building Environmental Values and Good Global Citizenship (Env)
(Preschool–Middle Level) 230, Convention Center
Julianne Schrader *(jschrader@ra.org),* Rainforest Alliance, New York, N.Y.
Let's practice Rainforest Alliance's dynamic activities that help students build environmental values and understand the powerful role we play in protecting natural resources.

NMLSTA Session: Kernels of Fun with Corn-based Plastics (Gen)
(Middle Level–High School) R01, Convention Center
Barbara U. Walker, Ottumwa (Iowa) Community Schools
Rebecca (Becky) Knipp, Retired Educator, West Harrison, Ind.
Attention will be paid to the many advances in the area of environmentally friendly polymers such as PLA and PHA. Participants will make their own corn plastic using corn starch, water, and glycerol or corn oil as well as investigate the properties of PHA. Handouts!

Is This Your First NSTA Conference? (Gen)
(General) R02/R03, Convention Center
NSTA Board and Council
Feeling overwhelmed by all there is to see and do at an NSTA conference on science education? Join us for an interactive walk through the conference program. By the end of the session, we guarantee you'll know just how to get the most from your conference participation. Refreshments courtesy of Carolina Biological Supply Company. Door prizes!

Hassle-free Microbiology (Bio)
(Middle Level–High School) R04, Convention Center
John W. Fedors *(jfedors@wavecable.com),* Science Activities, Lincoln, Calif.
Microbiology activities are possible with minimal preparation time, without laboratory aides, and with minimal/no capital equipment outlay.

Focus on Forests: Project Learning Tree's New Secondary Curriculum (Env)
(Informal Education) *R08, Convention Center*
Al Stenstrup *(astenstrup@forestfoundation.org)* and **Jackie Stallard** *(jstallard@forestfoundation.org),* Project Learning Tree, Washington, D.C.
Learn about how secondary students can explore the major issues facing forests today—climate change, invasive species, fire, land ownership and management, and more. Take home Project Learning Tree's new *Exploring Environmental Issues: Focus on Forests* activity guide and resource materials.

JetStream: An Online School for Weather (Earth)
(Informal Education) *R09, Convention Center*
Dennis R. Cain *(dennis.cain@noaa.gov),* National Weather Service, Fort Worth, Tex.
Receive an overview of a National Weather Service online resource for learning the basic how's and why's of weather. JetStream includes lesson plans and activities for the classroom.

8:00–9:15 AM Exhibitor Workshops

Rapid Single Antibody–based ELISA (Bio)
(Grades 7–College) *203, Convention Center*
Sponsor: Edvotek
Jack Chirikjian *(info@edvotek.com)* and **Khuyen Mai,** Edvotek, Bethesda, Md.
Learn about the simple and foolproof single-antibody ELISA (Enzyme-Linked Immunosorbent Assay) that can be completed in 40 minutes and analyzed by visual inspection or quantitatively using a microplate reader. This procedure is much more rapid than the traditional two-antibody ELISA.

The Layered Earth! (Earth)
(Grades 5–12) *204, Convention Center*
Sponsor: Simulation Curriculum Corp.
Herb Koller, Simulation Curriculum Corp., Aurora, Ont., Canada
Join us for an interactive Earth science curriculum designed for today's classroom. What powers the internal processes that produce volcanoes, earthquakes, and mountains? What is the rock cycle and how does it work? What really is an earthquake, and when and where will the next earthquake be? Exactly how are volcanoes formed? Come experience The Layered Earth, a 3-D interactive geology curriculum.

Teaching English Language Learners in the Science Classroom: Collaboration, Co-teaching, and Coaching (Gen)
(Grades 3–8) *210, Convention Center*
Sponsor: Pearson
Bonnie E. Baer-Simahk and **Patricia Page-Aube,** Fitchburg (Mass.) Public Schools
Join us as we share research-based practices that have been successfully implemented in a linguistically diverse urban school district, resulting in improved achievement of ELLs. Take home a sample lesson, models for co-teaching, characteristics of a sheltered science class, and access to a free online curriculum design tool. Get tools to start your own initiatives.

Dive into STEM with GEMS® Ocean Sciences Sequence (Gen)
(Grades 3–5) *212, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Create STEM connections with the new Ocean Sciences Sequence for Grades 3–5 from GEMS and the Lawrence Hall of Science. Explore the connections between man, nature, and the ocean while enforcing key STEM concepts. Complete hands-on activities and leave with samples and lessons for your classroom.

STEM-focused Technology Activities Using Inquiry Investigations™ (Gen)
(Grades 6–12) *216, Convention Center*
Sponsor: Frey Scientific/School Specialty Science
Terry Reed, Consultant, Fishers, Ind.
Conduct a STEM-focused activity that links science concepts and new USB U-Log™ datalogging technology to demonstrate how to integrate technology and hands-on inquiry. Examine STEM-focused assets in this curriculum series and see how program software allows the integration of virtual labs, investigative activities, the preparation of web-based content, and individualized assessment.

Learning the Design Process—Experiment or Product? (Gen)
(Grades K–6) *220, Convention Center*
Sponsor: Delta Education/School Specialty Science
Johanna Strange, Consultant, Richmond, Ky.
Tom Graika, Consultant, Lemont, Ill.
Having trouble getting students ready for science fairs and STEM performances? Learn an effective method for teaching students to design experiments from simple investigations. The same process can help students crystallize engineering ideas. Learn about Delta products and take home resources.

8:00–9:30 AM Exhibitor Workshop

Chemistry and the Atom: Fun with Atom Building Games! (Phys)
(Grades 6–12) *221, Convention Center*
Sponsor: CPO Science/School Specialty Science
Erik Benton, CPO Science/School Specialty Science, Nashua, N.H.
Our understanding of matter is so abstract that students have a hard time making sense of these fascinating concepts. In this workshop, you will experience innovative games and activities that give students with different learning styles opportunities to explore and grasp atomic structure and the periodic table.

8:00–10:30 AM Exhibitor Workshop

Using Science Notebooks with FOSS (Gen)
(Grades K–8) *215, Convention Center*
Sponsor: Delta Education/School Specialty Science–FOSS
Ellen Mintz, Charleston County Schools, Charleston, S.C.
Virginia Reid, Consultant, Olympia, Wash.
Brian Campbell and **Jessica Penchos,** Lawrence Hall of Science, University of California, Berkeley
Learn essential components for implementing science notebooks in K–8 classrooms. Through active investigations using FOSS elementary and middle school program investigations, you'll explore how notebooks impact achievement by providing a tool for building students' conceptual understanding and for finding evidence of learning. Sample materials will be distributed.

9:30–10:45 AM General Session

Ted Danson: My Ocean Story
(General) *La Louisiane Ballroom, Convention Center*

Ted Danson, Actor, Activist, and Author of *Oceana: Our Planet's Endangered Oceans and What We Can Do to Save Them,* Los Angeles, Calif.

Presider: Patricia Simmons, NSTA President, and North Carolina State University, Raleigh

Introduction of Speaker: Tricia LeBlanc, Director, Audubon Aquarium of the Americas, and President-Elect, Southern Association of Marine Educators, New Orleans, La.

Platform Guests: Ted Danson; Patricia Simmons; Tricia LeBlanc; Alan J. McCormack, NSTA Retiring President, and San Diego State University, San Diego, Calif.; Karen L. Ostlund, NSTA President-Elect, and Retired Professor, The University of Texas at Austin; Shannon Lafont, Chairperson, NSTA New Orleans Area Conference, President, Louisiana Science Teachers Association (LSTA), and Lafourche Parish School Board, Thibodaux; Jean May-Brett, Program Coordinator, NSTA New Orleans Area Conference, and Louisiana Dept. of Education, Baton Rouge; Paul Johnson, Local Arrangements Coordinator, NSTA New Orleans Area Conference, and Terrebonne School District, Houma, La.; Chris T. Campbell, NSTA Director, District VII, and Simsboro High School, Simsboro, La.; Francis Q. Eberle, NSTA Executive Director, Arlington, Va.

Ted Danson will discuss his 20 years as an ocean activist and share the often frightening yet hopeful news about the crisis in our oceans. Ted will share what he's learned from top ocean scientists as well as his hopeful vision for how we can save our oceans, which make up 71% of our planet.

Actor, activist, and author, Ted Danson touches American lives in many ways. While well known for his roles in the television series Cheers *and more recently* CSI *as well as his award-winning film career, Danson's environmental activism is less in the spotlight.*

In 1987, Danson founded the American Oceans Campaign (AOC) to alert Americans to the life-threatening hazards created by oil spills, off-shore development, toxic wastes, sewage pollution, and other ocean abuses. The AOC merged with Oceana in 2001. Oceana works to show citizens how they can participate in protecting and restoring marine resources, and to show Congress that Americans are concerned with these issues. His first book, a celebratory and cautionary look at the world's oceans, titled Oceana: Our Planet's Endangered Oceans and What We Can Do to Save Them, *was published in March 2011 and a portion of the proceeds benefits Oceana.*

10:00–11:15 AM Exhibitor Workshops

Fingerprint Your Own DNA with Affordable Classroom PCR That Works (Bio)
(Grades 7–College) *203, Convention Center*
Sponsor: Edvotek
Jack Chirikjian *(info@edvotek.com)* and **Khuyen Mai,** Edvotek, Bethesda, Md.
Learn fundamentals of how to prepare your own DNA for fingerprinting, and how these procedures can be integrated into classroom experiments using affordable polymerase chain reaction (PCR) and electrophoresis. Non-DNA–based identification methods that are adaptable for classroom experiments will also be featured.

Starry Night Education! (Earth)
(Grades 5–12) *204, Convention Center*
Sponsor: Simulation Curriculum Corp.
Herb Koller, Simulation Curriculum Corp., Aurora, Ont., Canada
Walk away with an interactive astronomy curriculum, lesson plans, and simulations for today's classroom! Join us as we explore the center of the Milky Way and examine the Sun and our solar neighborhood. Using the Starry Night curriculum, we'll examine star clusters and the black hole at the center of the Milky Way and demonstrate the power of this amazing interactive curriculum.

Dynamic Demonstrations from Flinn Scientific (Chem)
(Grades 7–12) *206, Convention Center*
Sponsor: Flinn Scientific, Inc.
Scott Stahler, Flinn Scientific, Inc., Batavia, Ill.
Seeing is believing! Flinn Scientific presents a variety of easy-to-perform and exciting chemistry and physical science demonstrations. Come see Flinn's new demonstrations and some of your old favorites—all guaranteed to make your science classroom come alive. Handouts!

Going Green: Economical and Environmentally Friendly Inquiry in Chemistry (Chem)
(Grades 9–12) *210, Convention Center*
Sponsor: Pearson
Ed Waterman, Retired Educator, Fort Collins, Colo.
Learn how to implement safe, simple, easy-to-set-up, material-conserving, time-efficient, and effective inquiry activities in chemistry with safety and differentiation built in. Each activity teaches core content and fosters problem solving, creativity, and invention. Encourage students to design and carry out original experiments not possible with traditional methods.

Autopsy: Forensic Dissection Featuring Carolina's Perfect Solution® Pigs (Bio)
(Grades 8–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Are you ready for a cutting-edge forensic dissection activity? Engage students and revitalize your instruction of mammalian structure and function with a "real" classroom autopsy! Dissect a Carolina's Perfect Solution pig by modeling the protocols of a forensic pathologist. Free materials and door prizes.

New Tools for STEM Education from Carolina™ Curriculum (Gen)
(Grades K–8) *212, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Explore new STEM resources, including STC–Secondary™, Building Blocks of Science® kindergarten units, and the elementary math intervention program, Math Out of the Box®. Complete hands-on activities from newly released materials and leave with samples and lessons to use in your classroom.

STEM-focused Forensics Activities Using Inquiry Investigations™ (Gen)
(Grades 6–12) *216, Convention Center*
Sponsor: Frey Scientific/School Specialty Science
Terry Reed, Consultant, Fishers, Ind.
Conduct a number of STEM-focused forensic activities that link the scientific method with analysis and investigative skills to solve multifaceted "cases" involving fingerprint, trace, DNA, and document evidence. Examine additional STEM-focused assets. See how the program software allows the integration of virtual labs, investigative activities, the preparation of web-based content, and individualized assessment.

Delta Science Modules (DSM)…Never Heard of It? Want to Know More? (Gen)
(Grades K–7) *220, Convention Center*
Sponsor: Delta Education/School Specialty Science
Johanna Strange, Consultant, Richmond, Ky.
Tom Graika, Consultant, Lemont, Ill.
This workshop will involve you with all parts of the DSM program, including hands-on activities, literacy connections, kit components, assessments, and ideas for building a K–8 standards-based curriculum. Receive literacy samples and activity resources.

10:00–11:30 AM Exhibitor Workshop

Genetics: Crazy Traits and Adaptation Survivor (Phys)

(Grades 6–12) *221, Convention Center*

Sponsor: CPO Science/School Specialty Science

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

Students learn new vocabulary when they study genetics—such as traits, alleles, and genotypes. How can you predict the traits of offspring when you know the genetic makeup of the parents? These ideas will come alive as you create crazy creatures with a unique kit and study the resulting population.

11:00–11:10 AM Exhibits Opening/Ribbon Cutting Ceremony

NSTA Exhibits Entrance (Hall A), Convention Center

Presider: Patricia Simmons, NSTA President, and North Carolina State University, Raleigh

Welcoming Remarks: Shannon Lafont, Chairperson, NSTA New Orleans Area Conference, President, Louisiana Science Teachers Association (LSTA), and Lafourche Parish School Board, Thibodaux

Special Guests: Alan J. McCormack, NSTA Retiring President, and San Diego State University, San Diego, Calif.; Karen L. Ostlund, NSTA President-Elect, and Retired Professor, The University of Texas at Austin; Jean May-Brett, Program Coordinator, NSTA New Orleans Area Conference, and Louisiana Dept. of Education, Baton Rouge; Paul Johnson, Local Arrangements Coordinator, NSTA New Orleans Area Conference, and Terrebonne School District, Houma, La.; Chris T. Campbell, NSTA Director, District VII, and Simsboro High School, Simsboro, La.; Francis Q. Eberle, NSTA Executive Director, Arlington, Va.; Rick Smith, NSTA Managing Director, Advertising, Exhibits, and Workshops, Arlington, Va.

11:00 AM–12 Noon Meetings

Publish with NSTA's Journals

201, Convention Center

Science Education in the Community Meeting

224, Convention Center

11:10 AM–5:00 PM Exhibits

Hall A, Convention Center

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

11:30 AM–1:00 PM Exhibitor Workshop

FOSS Program Evolution and the Next Generation Science Standards (Gen)

(Grades K–6) *215, Convention Center*

Sponsor: Delta Education/School Specialty Science–FOSS

Brian Campbell, Kathy Long, Larry Malone, and **Linda De Lucchi,** Lawrence Hall of Science, University of California, Berkeley

Learn about the latest developments in the FOSS elementary program to help schools address the Next Generation Science Standards. Focusing on the matter strand K–6, you will be introduced to the new FOSS—based on learning progressions and how the program incorporates science-centered language development, outdoor experiences, notebooks, and formative assessments.

12 Noon–1:15 PM Exhibitor Workshop

Incorporating Online Virtual Lab Solutions with Hands-On Science into Your Classroom (Gen)

(Grades 6–12) *216, Convention Center*

Sponsor: Frey Scientific/School Specialty Science

Terry Reed, Consultant, Fishers, Ind.

Integrate technology and hands-on inquiry by linking e-learning with inquiry using web-based STEM-focused tools and the curriculum content of iNeo/SCI™. Participate and compare a plant pigment chromatography virtual and bench-top laboratory experience! Be able to provide your students with valuable hands-on laboratory experiences and AP, biology, and chemistry content that is standard correlated and student directed.

12 Noon–1:30 PM Exhibitor Workshop

Sound, Waves, and Music (Phys)

(Grades 6–12) *221, Convention Center*

Sponsor: CPO Science/School Specialty Science

Erik Benton, CPO Science/School Specialty Science, Nashua, N.H.

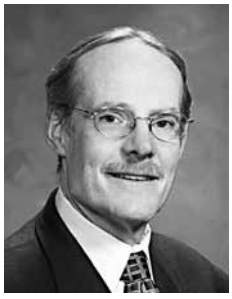
Come create and control beautiful standing wave patterns resonating on a vibrating string with CPO's wave machine. Use a synthesizer to explore the wave properties of sound. Play music on a set of PVC palm pipes and learn how to make sets of your own.

12:30–1:30 PM Featured Panel

Next Generation Science Standards **(Gen)**

(General) *La Louisiane Ballroom, Convention Center*

Stephen L. Pruitt



Francis Q. Eberle

Panelists:

Stephen L. Pruitt *(spruitt@achieve.org),* Vice President for Content, Research, and Development, Achieve, Inc., Washington, D.C.

Francis Q. Eberle *(feberle@nsta.org),* NSTA Executive Director, Arlington, Va.

Presider: Patricia Simmons, NSTA President, and North Carolina State University, Raleigh

Work is progressing to develop the Next Generation Science Standards. This informational session will provide an update on the development of these standards, including process and timeline for release of drafts and final documents, how science educators can be involved, and implications for science teaching.

With private funding from the Carnegie Corporation, the National Research Council (NRC) and Achieve—with support from NSTA and the American Association for the Advancement of Science (AAAS)—have embarked on a two-step cooperative process to develop the Next Generation Science Standards. The first step was to develop a conceptual framework that is grounded in current research on science and science learning and identifies the science all K–12 students should know. In July NRC released *A Framework for K–12 Science Education,* which now serves as the foundation for new K–12 science education standards. The next step will be the development of the standards. That state-led process is being managed by Achieve and will involve scientists, science teachers, policy makers, industry, and other interested parties. The standards are expected to be completed in late 2012.

Stephen Pruitt *was named vice president for Content, Research, and Development for Achieve, Inc., in November 2010. He joined Achieve as director of science in July 2010. In addition to his new role, he continues to lead the development of the Next Generation Science Standards. Stephen began his career as a high school chemistry teacher in Georgia, where he taught for 12 years. In 2003, he joined the Georgia Department of Education as program manager for science. He served in that role for four years before becoming director of academic standards, where he oversaw the continued implementation of the Georgia Performance Standards in all content areas. In 2008, he became the associate superintendent of Assessment and Accountability, responsible for directing all state assessments and overseeing the No Child Left Behind accountability process.*

Francis Q. Eberle *is the executive director of the National Science Teachers Association, the world's largest professional organization representing science educators of all grade levels. Before joining the association's staff in September 2008, Dr. Eberle served as executive director of the Maine Mathematics and Science Alliance (MMSA), a 501(c)(3) nonprofit organization dedicated to improving mathematics and science education in that state. During his time there, he worked to develop state curriculum frameworks and provide professional development and resources to schools and teachers throughout Maine.*

12:30–1:30 PM Presentations

SESSION 1

Beyond the Chalkboard: Rejuvenating Classroom Favorites with New School Technology (Gen)

(General) *217, Convention Center*

Robyn Hrivnatz *(robynhrivnatz@katyisd.org),* Cinco Ranch Junior High School, Katy, Tex.

Tired of the same old poster projects, lab reports, and classroom newsletters? Move beyond the chalkboard and reinvent your classroom with Glogster, Animoto, and Edmodo.

SESSION 2

The Formal-Informal Education Collaboration—One Example (Gen)

(Elementary) *218, Convention Center*

Kathy Fournier *(kfournier@mcwane.org),* McWane Science Center, Birmingham, Ala.

Celebrate Science engages students and brings science principles to life. Putting their imaginations to work, grades 3–5 classrooms are challenged to design an exhibit prototype with the aim of generating excitement for science and learning among the students while offering teachers a fresh outlet that taps into other curriculum areas through science. Many teachers are able to meet standards in technology, language arts, math, and social studies as well as in science.

SESSION 3

ASTC Session: STEM, Louisiana Wetlands Restoration, and Student Success (Env)

(General) *224, Convention Center*

Susan Testroet-Bergeron *(bergerons@usgs.gov),* Five Rivers Services, LLC, Lafayette, La.

Presider: Elizabeth Mulkerrin, NSTA Director, Informal Science, and Omaha's Henry Doorly Zoo, Omaha, Neb.

Want your students to remember STEM skills? Give them a chance to learn how Louisiana is actually rebuilding its vanishing coastal wetlands ecosystem. Discover instructional techniques tied to real-time online field-gathered statistics. Also, take home a host of free materials, including lesson plans, interactive CDs, books, short educational videos, and magazines related to Louisiana's coastal restoration.

SESSION 4

STOP for Science! A Schoolwide Science Enrichment Program (Phys)

(Elementary–Middle Level/Informal) *225, Convention Center*

Patrick Slane *(slane@cfa.harvard.edu),* Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

Robert Slane *(slanero@mukwonago.k12.wi.us),* Section Elementary School, Mukwonago, Wis.

Hear about how innovative materials and demonstrations on topics ranging from swinging a baseball bat to exploding stars will make your students STOP for Science!

SESSION 5

Climate Literacy and Energy Awareness Network (Env)

(Middle Level–College) *226, Convention Center*

Presenter to be announced

Come learn about the new NSF-funded, peer-reviewed digital collection of teaching materials related to climate and energy awareness. It includes hundreds of ready-to-use lessons that can help students become responsible decision makers.

SESSION 6

K–6 Science Instruction for All Students to Achieve Success (Gen)

(General) *227, Convention Center*

Donna L. Knoell *(dknoell@sbcglobal.net),* Educational Consultant, Shawnee Mission, Kans.

Maximize student participation and learning in the K–6 science classroom. Learn ways of differentiating instruction to enable all students to inquire, explore, participate, and achieve success. Handouts!

SESSION 7

Be Careful What You "Fish" For: Environmental Health for Humans (Env) CANCELED

(General) *228, Convention Center*

Christina DeYoung *(christina_deyoung@wgbh.org),* WGBH, Boston, Mass.

From mercury to malaria, examine the environment's impact on human health with open educational resources, including short clips from public television science programs.

SESSION 8

Presidential Awards for Excellence in Mathematics and Science Teaching (Gen)

(General) *231, Convention Center*

Nafeesa Owens *(nowens@nsf.gov),* National Science Foundation, Arlington, Va.

Come see how you can win a paid trip to Washington, D.C., a citation signed by the President of the United States, and $10,000!

SESSION 9

An Environmental Experiential Learning Project for Underserved Populations (Env)

(Elementary–High School) *232, Convention Center*

Shelia A. Brown *(shelia.brown@usm.edu)* and **Sherry S. Herron** *(sherry.herron@usm.edu),* The University of Southern Mississippi, Hattiesburg

Presider: Tera LaPrarie, Alexandria Middle Magnet School, Alexandria, La.

Hear Louisiana and Mississippi teachers provide testimonials about their involvement in a Gulf of Mexico Alliance (GOMA)–EPA funded project. Discussion centers on implementation strategies and evaluation results from the project aimed at underrepresented and underserved populations.

12:30–1:30 PM Workshops

Metacognition and Formative Assessment in the Chemistry Classroom (Chem)
(Middle Level–College) *222, Convention Center*
Angela R. Powers, Metropolitan State College of Denver, Colo.
Cece Schwennsen *(cschwenn@yahoo.com),* Cate School, Carpinteria, Calif.
Join us for a discussion on how to incorporate metacognitive strategies and formative assessment into your introductory chemistry classroom to improve student learning.

A Tasty Lesson: Using Taste and Smell to Teach Cell Basics (Bio)
(High School–College) *229, Convention Center*
Lynn M. Diener *(dienerl@mtmary.edu),* Mount Mary College, Milwaukee, Wis.
Investigate taste and smell by attempting to fool your taste buds and explore free molecular modeling technology that visually illustrates related concepts.

Food Chains: Using Field Surveys That Give Real Numbers (Bio)
(Middle Level) *230, Convention Center*
Frederick E. Maier *(fredmaier@sbcglobal.net),* Village of Itasca, Ill.
Roy Tison *(globes@comcast.net),* Wheaton Park District, Wheaton, Ill.
Get an overview of three hands-on survey techniques that allow students to calculate actual numbers of plants, herbivores, and carnivores in creating a food chain.

Teaching Energy Conservation with an Emphasis on Biofuels (Gen)
(Elementary–Middle Level) *R02, Convention Center*
Sue Kral *(spk@cdmfun.org)* and **Wayne Robinson** *(jwr@cdmfun.org),* Creative Discovery Museum, Chattanooga, Tenn.
Connecting environmental issues to the National Science Education Standards and current research, this session focuses on inquiry-based activities explaining biofuels as a future energy source.

What Is the COLOR of Science? EXCITING! (Gen)
(Elementary–Middle Level) *R03, Convention Center*
Parker O. Pennington IV *(p.o.pennington@gmail.com),* Retired Educator, Ann Arbor, Mich.
How can we capture the imagination and curiosity of students to hook them on science? Colorful, engaging hands-on activities offer science excitement while delivering essential content.

Drop the Lecture and Let the Students Pick Up the Learning in AP Biology (Bio)
(High School) *R04, Convention Center*
Kristen R. Dotti *(kristen_dotti@yahoo.com),* Christ School, Arden, N.C.
Using a fast-paced group game to compare and contrast the cellular organelle of prokaryotes and eukaryotes—a team race to exemplify the separation of DNA fragments by PCR and a bacterial social event to elucidate the critical points of conjugation and transformation—this session will add several new activities to your bag of tricks for teaching in-depth AP Biology topics in an engaging and memorable manner.

Engage Students' Brains Through Hands-On Activities (Gen)
(Elementary) *R05, Convention Center*
Lacy Caime *(ldevall2@ebrschools.org; lacycaime@gmail.com)*, East Baton Rouge Parish School System, Zachary, La.
Use meaningful, engaging hands-on activities to get your students excited about studying science. Many activities will be shared that can easily be taken back to your classroom for a variety of elementary grade levels.

MoonKAM (Moon Knowledge Acquired by Middle School Students): Exploring Lunar Images (Earth)
(Middle Level) *R06, Convention Center*
Leesa Hubbard *(astropoet@aol.com),* Sally Ride Science, San Diego, Calif.
Julie Miller *(jmillerirc@olatheschools.com),* Olathe (Kans.) Public Schools USD 233
Learn about the exciting Gravity Recovery and Interior Laboratory, or GRAIL, mission to our Moon, how students can take pictures with MoonKAM cameras, and what imagery of the lunar surface can teach us about the Moon's history, composition, and role in our solar system. Try some hands-on lunar science activities.

NSTA Press Session: A Head Start on Science (Gen) CANCELED
(General) *R08, Convention Center*
William C. Ritz, California State University, Long Beach
A national demonstration project has developed activities to help Head Start teachers bring "sense of wonder" science to 4-year-olds. We will share activities that engage preK children in the exciting science of their everyday world.

Ice Core Records—From Volcanoes to Stars (Earth)

(Informal Education) *R09, Convention Center*

Donna L. Young *(donna@aavso.org),* Chandra E/PO Office, Cambridge, Mass.

Doug Lombardi *(lombardi.doug@gmail.com),* Southern Nevada Regional Professional Development Program, North Las Vegas

Pamela B. Perry *(pperry@lewistonpublicschools.org),* Lewiston High School, Lewiston, Maine

Use absolute and relative dating techniques with high-resolution ice core data and historic volcanic eruptions to correlate and date supernovae events from nitrate anomalies.

12:30–1:45 PM Exhibitor Workshops

Master of Science Degree in Geosciences Available Online Through the Teachers in Geosciences Program (Earth)

(Grades K–12) *203, Convention Center*

Sponsor: Mississippi State University

Doug Gillham *(dmg3@msstate.edu),* Mississippi State University, Mississippi State, Miss.

Discover how you can earn an MS degree via distance learning from Mississippi State University. The 12-course graduate program includes courses in meteorology, geology, astronomy, oceanography, hydrology, environmental geoscience, and a 10-day capstone field course. We have alumni in all 50 states, and all students qualify for in-state tuition rates.

Chemistry In-the-Bag Hands-On Inquiry Workshop (Chem)

(Grades 7–12) *205, Convention Center*

Sponsor: Science Kit & Boreal Laboratories

Jamie Vander Wiede, Bridgewater Middle School, Winter Garden, Fla.

Learn how to easily incorporate fun and exciting inquiry activities into your classroom using ScholAR's new In-the-Bag Inquiry Activity series. These easy-to-perform demonstrations are designed to engage your students and then incorporate guided inquiry exercises so they can further explore and understand the *Living By Chemistry* concept.

***Living By Chemistry:* What Shape Is That Smell? (Chem)**

(Grades 9–12) *208, Convention Center*

Sponsor: Key Curriculum Press

Jeffrey Dowling *(jdowling@keypress.com),* Key Curriculum Press, Emeryville, Calif.

Teach rigorous chemistry with guided inquiry! Let's explore activities that help students understand molecular structure and other core chemistry concepts using the context of smell. Take home free sample lessons and materials from the *Living By Chemistry* curriculum.

Natural Differentiation Using Foldables® (Gen)

(Grades K–12) *209, Convention Center*

Sponsor: Dinah-Might Adventures, LP

Nancy Wisker *(nancy@dinah.com),* Dinah Zike Academy, San Antonio, Tex.

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. Take home material packets.

Online Learning Exchange, Powered by Pearson: Our Content, Your Content…All in One Place! (Gen)

(Grades K–12) *210, Convention Center*

Sponsor: Pearson

Chuck McMillan, Curriculum Specialist, Huron, Mich.

Visit an environment where high-quality content combined with tools enable you to exchange ideas, collaborate, and improve your teaching and your students' learning experience. Join us to learn how to build lessons easily, share your latest masterpiece, and discuss your areas of interest with others. Online Learning Exchange puts our content and your content all in one place!

Amplify Your Genetics Teaching Skills with Carolina's Inquiries in Science® Biology Kits (Bio)
(Grades 9–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Want to help your students solve the mystery of genetics? Using a guided inquiry approach can improve student understanding of difficult concepts such as nucleic acids, genetic inheritance, and biotechnology. Inquiries in Science biology kits provide hands-on activities that make challenging topics effortless to teach. Free teacher materials and door prizes.

Implementing STEM in Your Classroom with Carolina™ Curriculum and the Smithsonian Institution (Gen)
(Grades K–10) *212, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Take away free material to implement K–10 STEM initiatives in your classroom. Learn to incorporate STEM standards using research-based programs developed by Carolina™ Curriculum and the Smithsonian Institution. Receive tools to develop skills necessary to prepare students for careers in the 21st-century global marketplace.

1:00–1:30 PM Presentation

SESSION 1

Using the Rules of Comedy Improv to Enhance Your Classroom (Phys)

(General) *219, Convention Center*

Kenneth Michael LaFrance, Benjamin Franklin High School, NewOrleans, La.

Comedy Improv has five basic tenets that guide it. Using these tenets in your classroom equals fun for you and your students. As an added bonus—THEY LEARN!

1:00–2:30 PM Exhibitor Workshop

What's Going On in There? Inquiry Science for Supervisors, Trainers, and Teachers (Gen)

(Grades K–8) *220, Convention Center*

Sponsor: Delta Education/School Specialty Science

John Cafarella, Consultant, Canadensis, Pa.

Come learn how to support and evaluate an inquiry-based science lesson/program. What should you look for while observing a science lesson? During this session, we'll define inquiry and look at the use of process skills, standards-based content and materials, notebooking, and assessment while engaging in interactive, inquiry-based activities.

1:00–4:00 PM Short Course

Teaching Astronomy with Small Telescopes (SC-1)

(Middle Level–College) *La Galerie 2, Marriott*

Tickets Required: $63

Robert T. Sparks *(rsparks@noao.edu),* **Stephen M. Pompea** *(spompea@noao.edu),* and **Constance E. Walker** *(cwalker@noa.edu),* National Optical Astronomy Observatory, Tucson, Ariz.

For description, see page 37.

1:00–4:30 PM Short Course

SciOly Engineering Design Challenges (SC-2)

(Grades 6–12) *La Galerie 3, Marriott*

Tickets Required: $25

Chris T. Campbell *(ccampbell@lincolnschools.org),* NSTA Director, District VII, and Simsboro High School, Simsboro, La.

Stacy R. Campbell *(scampbell@lincolnschools.org),* I.A. Lewis Elementary School, Ruston, La.

For description, see page 37.

2:00–3:00 PM Featured Presentation

Applying STEM Education: Restoring the Wounded Soldier Through Neuroscience, Engineering, and Imagination (Gen)

(General) *La Louisiane Ballroom, Convention Center*

Col. Geoffrey Ling *(geoffrey.ling@darpa.mil),* Program Manager, Defense Sciences Office, Defense Advanced Research Projects Agency, Arlington, Va.

Presider: Tim Johnson, Science Coordinator, Erie 1 Board of Cooperative Educational Services (BOCES), West Seneca, NY.

The Defense Advanced Research Projects Agency (DARPA) continues its mission to conduct scientific research that challenges the limits of science and engineering as well as the limits of imagination. Col. Ling is a program manager at DARPA who was featured on *60 Minutes* for his research work on upper-extremity prostheses. Col. Ling's portfolio includes revolutionizing prosthetics, preventing explosive-blast brain injury, and pre-symptomatic disease detection. He will update us on the progress of his work developing a prosthetic arm that is controlled the natural way, directly by a patient's own brain. To do this and more, DARPA depends on today's science teachers to prepare tomorrow's scientists and engineers. Beyond the traditional biology, chemistry, physics, and mathematics areas, today's educators will now need exposure to biomedical engineering, material science, robotics, neuroscience, system biology, nanotechnology, informatics, and more.

Col. Geoffrey Ling, MD, PhD, comes to DARPA from a recent tenure as professor and acting chair of the Department of Neurology at the Uniformed Services University of the Health Sciences (USUHS). He received his doctorate in pharmacology from Cornell University's Graduate School of Medical Sciences and his medical degree from Georgetown University.

He completed his neurology residency at Walter Reed National Military Medical Center, conducted further studies under a neuropharmacology research fellowship at Sloan-Kettering Cancer Center, and completed a neurointensive care fellowship at Johns Hopkins Hospital. In addition to his DARPA programs, he serves on the critical care staff at Walter Reed Army Medical Center and Johns Hopkins Hospital. His research interests focus on brain and spinal cord injury, particularly that which is relevant to the military. His work studies diagnostic and therapeutic responses as well as elucidation of the basic mechanisms of penetrating injuries.

2:00–3:00 PM Presentations

SESSION 1

Geo–everything in Your Classroom (Env)

(Middle Level–High School) *202, Convention Center*

Steven L. Babcock *(sbabcock@lsu.edu),* Louisiana State University Laboratory School, Baton Rouge

Developed as part of the Toyota International Teaching Program to Galápagos, this presentation shows how teachers can use GoogleEarth and web-based data to develop virtual field trips for their students.

SESSION 2

Science: The WRITE Way (Phys)

(Middle Level) *225, Convention Center*

Nancy Gifford, Harwich Middle School, Harwich, Mass.

Carolyn W. Jacobs *(carolyn_jacobs@wgbh.org),* WGBH, Boston, Mass.

CANCELED

There *is* something new under the Sun! Help your struggling readers and writers master science topics through interactive media and structured literacy activities.

SESSION 3

"A" Is for Analogy (Gen)

(Middle Level–College) *226, Convention Center*

Chuck Downing *(cdowning@tvusd.k12.ca.us),* Great Oak High School, Temecula, Calif.

Brain research supports linking new concepts to prior knowledge. Experience how analogies help your students learn, and how you can quickly assess areas of misunderstanding.

SESSION 4

Nonfiction Science Books Add Value to Your Classroom (Gen)

(General) *227, Convention Center*

Donna L. Knoell *(dknoell@sbcglobal.net),* Educational Consultant, Shawnee Mission, Kans.

Find out the advantages of using nonfiction science trade books to teach science literacy skills, while helping students build essential science knowledge and conceptual understanding. Learn strategies to help students read informational text, and discover outstanding science books for your classroom. Handouts provided.

SESSION 5

I See What You Mean! Developing Visual Literacy (Gen)

(Elementary–Middle Level) *228, Convention Center*

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

Interpreting and understanding the visuals and illustrations that students encounter in their science textbooks is more than just luck. See what the current research says and experience some new instructional strategies.

SESSION 6

Teach Science Content and Inspire STEM Careers with Free Online Web Adventures (Gen)

(Middle Level–High School) *229, Convention Center*

Yvonne Klisch *(yvonne.klisch@rice.edu),* **Leslie M. Miller** *(lmm@rice.edu),* and **Lynn Lauterbach** *(lynnlauterbach@gmail.com),* Rice University, Houston, Tex.

Spark your students' interest in STEM careers with interactive simulations of real jobs in science.

SESSION 7

From Galileo to Moon Dust: The Consilience of Science and Religion (Gen)

(General) *231, Convention Center*

Clyde A. Selner *(caselner@aol.com),* South Windsor High School, South Windsor, Conn.

A presentation of a hypothesis that reconciles scientific and religious thought and may bring greater understanding and meaning to each. Lively discussion can be expected.

SESSION 8 (two presentations)

(General) *232, Convention Center*

Become an Einstein Fellow! (Gen)

Kathryn G. Culbertson *(culbertsonk@triangle-coalition.org),* Triangle Coalition for Science and Technology Education, Arlington, Va.

Get the details about an 11-month paid fellowship program open to K–12 classroom teachers in a STEM field who have been teaching for at least five years. You could become an Einstein Fellow!

If It Isn't Fixed, Break It! (Gen)

Jennifer D. Rollins, West End High School, Walnut Grove, Ala.

Learn how to increase academics, decrease discipline challenges, gain parental support, and empower all educators. Participants will be encouraged and challenged to implement strategies and techniques that can change the classroom and campus climate immediately.

2:00–3:00 PM Workshops

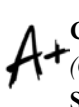
Teaching the Carbon Cycle in an Urban Setting (Env)

(Middle Level–High School/Informal) *217, Convention Center*

Shanmugavel Rajendran *(shanshivani@gmail.com),* Paul Laurence Dunbar High School, Baltimore, Md.

Sarah Haines *(shaines@towson.edu),* Towson University, Towson, Md.

Attention will be paid to the challenges of teaching the carbon cycle to urban students and will focus on innovative, tested, hands-on school yard–based techniques.



Case Study Cavalcade (Bio)

(General) *219, Convention Center*

Susan A. Bender *(sbender@jackson.k12.ms.us),* Jim Hill High School, Jackson, Miss.

Karen Evans *(kevans@madison-school.com),* Germantown High School, Madison, Miss.

Cindy Cook *(cindy.cook@rcsd.ms),* Puckett Attendance Center, Puckett, Miss.

Cassondra Vanderford *(cvanderford@rcsd.ms),* Brandon High School, Brandon, Miss.

Funded in part by a grant from the Howard Hughes Medical Institute, this session examines research on the use of original case studies written in narrative form to facilitate science learning. These original case studies, novels, and primary source documents were found to increase students' literacy and numeracy skills. CDs and handouts provided.

Polymers: New Twists on Old Favorites (Chem)

(Middle Level–High School) *222, Convention Center*

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

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

Enhance and deepen science and math concepts taught in traditionally "fun" polymer labs. Add more scientific processes to make them inquiry based. Come participate. Handouts!

A Different Look at an Old Model: Modeling the Spectrum (Phys)

(Middle Level–High School) *224, Convention Center*

Christine A. Royce *(caroyce@aol.com),* NSTA Director, Professional Development, and Shippensburg University, Shippensburg, Pa.

Using materials from the Chandra mission, we will examine two different views of the electromagnetic spectrum model as well as pre- and post-assessment activities in a unit.

Lost in Translation: Exploring Protein Synthesis with Interactive Physical Models (Bio)

(High School–College) *230, Convention Center*

Tim Herman *(herman@msoe.edu)* and **Shannon Colton** *(colton@msoe.edu),* Milwaukee School of Engineering, Center for BioMolecular Modeling, Milwaukee, Wis.

Discover the translation process from mRNA to protein, using hands-on innovative physical models of the insulin gene and protein.

NSTA Press Session: *Picture-Perfect Science, Grades 3–6* (Gen)

(Elementary) *R01, Convention Center*

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

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

Learn how to use picture books to guide inquiry in the upper elementary classroom.

NSTA Press Session: Linking Science, Math, and Art Instruction (Gen)

(Elementary–Middle Level) *R02, Convention Center*

John Eichinger *(jeich3384@aol.com),* California State University, Los Angeles

We'll engage in several classroom-friendly activities taken from my two NSTA Press Books—*Activities Linking Science with Math, K–4* and *Activities Linking Science with Math, 5–8.*

Teaching Evolution to All Students: Using Inquiry to Engage Even Resistant Students (Bio)

(Middle Level–High School) *R04, Convention Center*

Lee Meadows *(lmeadows@uab.edu),* The University of Alabama at Birmingham

Learn better how to teach evolution by inquiry and engage students objecting to it, including resources, ideas, and lesson plans.

The Next Step in Engaging Early Elementary Students in Full Science Inquiry (Gen)
(Elementary) *R05, Convention Center*
Kristi A. Zenchak *(zenchak@oakton.edu),* Oakton Community College, Des Plaines, Ill.
Chris M. Culen *(cculen@district95.org),* Brook Park School, LaGrange Park, Ill.
Experience how the demonstration-experiment format makes science come alive. It is the next step in optimizing science activities by building on student excitement to provide meaningful problem-solving and critical-thinking experiences.

Explore Space Mission Science (Earth)
(Elementary–Middle Level/Informal) *R06, Convention Center*
Whitney H. Cobb *(wcobb@mcrel.org),* McREL, Denver, Colo.
Get real-time science in action! There were several spacecraft arrivals in 2010 and 2011—Dawn arrived at Vesta in the main asteroid belt in July 2011; Stardust NExT and EPOXI zoomed close to their respective comets earlier in the year. Explore mission science through hands-on activities backed by innovative multimedia using education and public outreach programs for NASA's Missions of Discovery.

Be a Butterfly Doctor with Project MonarchHealth (Env)
(Elementary–High School/Informal) *R08, Convention Center*
Donna L. Gast *(dlgast@ix.netcom.com)* and **Shari Travers** *(stravers@oconeeschools.org),* Oconee County Middle School, Watkinsville, Ga.
Learn techniques used by scientists studying diseased monarchs with safe, high-interest activities, and how students can contribute data to Project MonarchHealth. Lesson plans and freebies!

NMLSTA Session: Children Like Art but Hate Science; Let's Do Something About That (Gen)
(Elementary–High School) *R09, Convention Center*
Barbara U. Walker, Ottumwa (Iowa) Community Schools
Rebecca (Becky) Knipp, Retired Educator, West Harrison, Ind.
Have fun painting with liquid latex, creating polariscopes, and shrinking a polymer while investigating acid/base neutralization, diffraction, and properties of polymers. Handouts and free materials available.

2:00–3:00 PM Exhibitor Workshop

33 Ways to Integrate Science (Gen)
(Grades 2–4) *216, Convention Center*
Sponsor: Delta Education/School Specialty Science–Seeds
Elizabeth C. Shafer and **Suzy Loper,** Lawrence Hall of Science, University of California, Berkeley
Discover how to increase reading comprehension and science knowledge simultaneously for ALL students. Take away 33 ready-to-use strategies for incorporating science trade books into your classroom. Learn integration strategies that provide a better way to teach both science and literacy. Free classroom materials!

2:00–3:30 PM Exhibitor Workshop

Light and Optics: A Series of EnLIGHTening Experiments! (Phys)
(Grades 6–12) *221, Convention Center*
Sponsor: CPO Science/School Specialty Science
Erik Benton, CPO Science/School Specialty Science, Nashua, N.H.
Experience CPO's Optics with Light and Color kit complete with LED flashlights, laser, lenses, a mirror, and more. Try color mixing, relate it to human vision, and examine different spectra. Shine a laser through a prism and see for yourself the phenomenon of total internal reflection. We make studying light exciting!

2:00–4:00 PM Exhibitor Workshop

Taking Science Outdoors with FOSS K–8 (Gen)
(Grades K–8) *215, Convention Center*
Sponsor: Delta Education/School Specialty Science–FOSS
Erica Beck Spencer and **Joanna Snyder,** Lawrence Hall of Science, University of California, Berkeley
Experience exciting new outdoor initiatives from FOSS that can expand your classroom walls and help you and your students embrace the school yard environment. Learn about helpful outdoor teaching techniques, proven outdoor investigations, and lessons learned from other successful school yard initiatives. We'll go outside to experience outdoor activities.

2:15–3:30 PM Exhibitor Workshops

New Ways to Prepare Your Students Using 21st-Century STEM Initiatives—GO DIGITAL! (Bio)
(Grades 9–College) *203, Convention Center*
Sponsor: Swift Optical Instruments, Inc.
Cynthia Syverson-Mercer *(cynthia@swiftoptical.com)* and **David Doty** *(david@swiftoptical.com),* Swift Optical Instruments, Inc., San Antonio, Tex.
The future of science classrooms and workplaces is digital technology. Prepare your students for this future by incorporating Motic software, Swift digital cameras, and microscopes into your STEM curriculum. Learn how to integrate digital technology and assessment into your current teaching. Get students involved digitally!

eCYBERMISSION: Free STEM Competition for Middle School Students Offers Exciting Rewards (Gen)
(Grades 6–9) *204, Convention Center*
Sponsor: eCYBERMISSION
Josh Roth *(josh.roth@ecybermission.com),* eCYBERMISSION, Belcamp, Md.
eCYBERMISSION is a free web-based STEM competition for students in grades 6–9. Sponsored by the U.S. Army, eCYBERMISSION shares the importance of STEM education with tomorrow's leaders, while offering students the opportunity to earn up to $8,000 in U.S. EE savings bonds.

Chemistry In-the-Bag Hands-On Inquiry Workshop (Chem)
(Grades 7–12) *205, Convention Center*
Sponsor: Science Kit & Boreal Laboratories
Jamie Vander Wiede, Bridgewater Middle School, Winter Garden, Fla.
Learn how to easily incorporate fun and exciting inquiry activities into your classroom using ScholAR's new In-the-Bag Inquiry Activity series. These easy-to-perform demonstrations are designed to engage students and then incorporate guided inquiry exercises so students can further explore and understand the concept.

Ecology Adventures: Motivating Students Through Project Based Learning (Gen)
(Grades 3–8) *207, Convention Center*
Sponsor: Houghton Mifflin Harcourt
Michael Heithaus, Florida International University, North Miami
Join Houghton Mifflin Harcourt author Mike Heithaus to learn about exciting new video-based lessons that take your class on scientific adventures! Videos of real scientists studying sharks, sea turtles, dolphins, and more guide students through all the steps of the scientific method. Challenge your students to develop hypotheses, join research teams as they collect data, and then conduct their own data collection and analysis.

Using the OHAUS Harvard Junior as a STEM-focused Skill Platform (Gen)
(Grades 2–6) *208, Convention Center*
Sponsor: Frey Scientific/Ohaus Corp.
Frey Scientific and Neo/SCI
Have an opportunity to learn about STEM education and how to integrate the OHAUS Harvard Junior balance in building critical STEM-focused skills like measuring! Learn how to use STEM-based virtual labs and bench activities to enhance student learning! By performing a STEM-focused activity, participants will learn how to integrate STEM-focused measuring, balance theory, and data analysis skills into their curriculum. All participants receive a FREE OHAUS Harvard Junior sampler containing STEM activities and one person will receive a FREE OHAUS Harvard Junior balance.

What the Hands Do, the Brain Does: Lasting Understanding Using Notebook Foldables® (Gen)
(Grades K–12) *209, Convention Center*
Sponsor: Dinah-Might Adventures, LP
Nancy Wisker *(nancy@dinah.com),* Dinah Zike Academy, San Antonio, Tex.
Add dimensionality to student notebooks and transform them into brain-smart tools with Notebook Foldables. Make learning and assessment tools that will revolutionize your classroom. Take home material packets.

Teaching About Climate Change in a Climate of Controversy: Presenting Science with Rigor and Relevance (Bio)
(Grades 9–12) *210, Convention Center*
Sponsor: Pearson
Joseph Levine, Author, Concord, Mass.
Climate science, which blends ecology and Earth science, is complex and highly politicized. Learn to teach the real, solid science behind sound-bite-driven headlines.

Hands-On Science with Classroom Critters (Bio)
(Grades K–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Animals broaden inquiry-based explorations and student interest in science. Through fun, simple hands-on activities, participants learn about termites and insect pheromones; how isopods are great for teaching evolution, adaptation, and behavior; and experiments that incorporate measuring into beetle activities. Session includes care and handling information, free samples, and literature.

2:30–4:30 PM NSTA ESP Symposium

NSTA's Exemplary Science Programs (ESP): Meeting the Reform Features Recommended in the National Science Education Standards (Gen)
(General) *R07, Convention Center*

The ESP series identifies people and places where the reforms recommended have emerged, including 1) Exemplary Science in Grades PreK–4; 2) Exemplary Science in Grades 5–8; 3) Exemplary Science in Grades 9–12; 4) Exemplary Science: Best Practices in Professional Development; 5) Inquiry: The Key to Exemplary Science; 6) Exemplary Science in Informal Education Settings; and 7) Exemplary Science for Resolving Societal Challenges. The exemplars are discussed in ESP symposia at all NSTA conferences.

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

Coordinators: Pradeep M. Dass (dasspm@appstate.edu), *Appalachian State University, Boone, N.C.; Susan B. Koba* (skoba@cox.net), *NSELA President, Omaha, Neb.*

Inquiry: Changing the Teaching of Science (from ESP #5)
Holly Harrick *(hharrick@ctsciencecenter.org),* Connecticut Science Center, Hartford

"Why Wasn't I Taught This Way?" (from ESP #5)
Joseph I. Stepans *(jstepans@uwyo.edu),* University of Wyoming, Laramie

3:00–4:30 PM Exhibitor Workshop

Science Gnus: Scientists Famous and Forgotten… and Their Process Skills (Gen)
(Grades K–8) *220, Convention Center*
Sponsor: Delta Education/School Specialty Science
John Cafarella, Consultant, Canadensis, Pa.
Hear about fascinating and dramatic stories of scientists, their discoveries, and the process skills used. Plus, the sometimes fine line between being famous or being forgotten by history. We'll replicate notable activities, too. The stories in science are high interest for both teachers and students. Liberal doses of Science Gnus humor, too.

3:00–9:00 PM Meeting

CESI Board Meeting
(By Invitation Only) *La Galerie 4, Marriott*
For information, please visit *cesiscience.org.*

3:30–4:30 PM Presentations

SESSION 1

Potentials and Challenges—Integrating Formative Assessment in a Chinese High School Chemistry Classroom (Chem)

(High School) *201, Convention Center*

Xinying Yin *(yinx@indiana.edu)*, Indiana University, Bloomington

Examine formative assessment through the lens of a Chinese high school chemistry classroom. Discuss results from a seven-week project and its influence on students' learning in a high-stakes context.

SESSION 2

Teaching Culturally Relevant Ecology: Strategies for Improving Environmental Science Literacy (Env)

(Middle Level–High School) *202, Convention Center*

Sarah Haines (*shaines@towson.edu*), Towson University, Towson, Md.

Explore strategies for improving student understanding of key topics in environmental science. Learn how to develop culturally relevant science lessons in your region.

SESSION 3 (two presentations)

(General) *217, Convention Center*

Tune In! Using Multimedia and Online Collaboration in Your Formative Assessment (Gen)

Robert Miller *(millermail@mac.com),* Port Orange Elementary School, Port Orange, Fla.

Are you using NSTA's Formative Assessment Probes in your classroom? See how one teacher integrates multimedia and social media tools to add another dimension to this resource!

iPads—From Apps to Lessons (Gen)

Christine J. Pfaffinger *(cpfaffinger@d125.org),* **Christina H. Wood** *(cwood@d125.org),* and **Amerigo E. Carnazzola** *(acarnazzola@d125.org),* Adlai E. Stevenson High School, Lincolnshire, Ill.

The iPad provides experiences not possible with textbooks and microscopes. See how three teachers are using iPads during formative assessments and to enhance collaborative learning.

SESSION 4

A Framework for K–12 Science Education **(Gen)**

(General) *222, Convention Center*

Brett Moulding, Utah Partnership for Effective Science Teaching and Learning, Ogden

Presider: Francis Q. Eberle, NSTA Executive Director, Arlington, Va.

In July 2011, the National Research Council released *A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* that identifies the key scientific ideas and practices all students should learn by the end of high school. These expectations will inform the development of new standards for K–12 science education and, subsequently, revisions to curricula, instruction, assessment, and professional development for educators. This session will explore the vision, goals, structure, and implications of the framework.

SESSION 5

Physics in High School—More Necessary Today Than Ever Before (Phys)

(High School) *225, Convention Center*

Karen L. Belciglio *(kbelciglio@charlottecatholic.com)* and **Terry Jordan** *(tdjordan@charlottecatholic.com),* Charlotte Catholic High School, Charlotte, N.C.

Physics is critical at the high school level to foster interest in STEM careers. We'll explore why and offer activities and resources for high school physics teachers.

SESSION 6

Focusing On STEM in Early Childhood Graduate Teacher Programs (Gen)

(College) *226, Convention Center*

John W. Payne *(payne_jw@mercer.edu)* and **Jane Metty** *(metty_jm@mercer.edu),* Mercer University, Lithia Springs, Ga.

Hear about a graduate science endorsement program for early childhood teachers. The presenters will share the problems and successes of the development process and the results following the first year of implementation.

SESSION 7

The Reflective Assessment Technique: 15 Minutes to Improved Instruction (Gen)

(Elementary–Middle Level) *227, Convention Center*

Cathleen A. Kennedy *(cathy@kacgroup.com),* KAC Group, San Carlos, Calif.

Kathy Long *(klong@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

Arthur H. Camins *(arthurcamins@gmail.com),* Charles V. Schaefer School of Engineering, Stevens Institute of Technology, Hoboken, N.J.

Learn a quick assessment technique that pinpoints what students need to learn next—without giving a quiz. See how it improved student performance and teacher effectiveness in a national study.

SESSION 8

Big World, Small Planet: Climate Science Literacy with Digital Media (Env)

CANCELED

(General) *228, Convention Center*

Christina DeYoung *(christina_deyoung@wgbh.org),* WGBH, Boston, Mass.

Investigate the causes and impacts of climate change and other climate science topics with open educational resources, including short clips from public media programs.

SESSION 9

NSTA Avenue Session: America's Home Energy Education Challenge (Env)

(Elementary–Middle Level) *232, Convention Center*

Ray Ann Havasy, Center for Science Teaching and Learning, Rockville Centre, N.Y.

Sponsored by the U.S. Department of Energy and administered by NSTA, America's Home Energy Education Challenge is designed to educate grades 3–8 students about energy usage and energy efficiency and engage students and their families in a save energy, save money campaign. Learn about energy-efficiency resources available to schools, teachers, students, and families. Find out how your students can earn an Energy Fitness Award from the U.S. Secretary of Energy.

SESSION 10

NSTA Press Session: Team Teaching Science—You Can Do It! (Gen)

(General) *R01, Convention Center*

Ed Linz *(coachlinz@cox.net),* Retired Science Teacher and Author, Springfield, Va.

Mary Jane Heater *(mjheater@fcps.edu),* West Springfield High School, Springfield, Va.

An experienced team of co-teachers discuss the challenges and rewards of team teaching K–12 science and present a game plan for success.

3:30–4:30 PM Workshops

STEM in Action—I'm Ready for the Real World! (Earth)

(Middle Level–High School/Supv.) *218, Convention Center*

Barry Fried *(bfried@schools.nyc.gov)* and **Honora Dash** *(hdash@schools.nyc.gov),* John Dewey High School, Brooklyn, N.Y.

Learn how we provide authentic science experiences through STEM education and partnerships to prepare students to become contributing members of society and the 21st-century workforce.

Scaffolded Inquiry: Success for All Students (Gen)

(Supervision/Administration) *219, Convention Center*

Karen L. Ostlund *(klostlund@mail.utexas.edu),* NSTA President-Elect, and Retired Professor, The University of Texas at Austin

Find out how scaffolded inquiry provides the platform for exploring STEM content. Learn how to guide students' inquiry as they progress from teacher-directed to teacher-facilitated to student-directed inquiries for a continuous deepening of understanding of the skills and knowledge fundamental to answering scientific questions.

Scale the Universe **(Gen)**
(Middle Level–High School) *224, Convention Center*
Christine A. Royce *(caroyce@aol.com),* NSTA Director, Professional Development, and Shippensburg University, Shippensburg, Pa.
How big is big? How small is small? Let us "Scale the Universe" as we investigate a variety of different scaling activities.

Dive In with Physical Models: Impact of Water on Protein Structure **(Bio)**
(High School–College) *229, Convention Center*
Shannon Colton *(colton@msoe.edu)* and **Tim Herman** *(herman@msoe.edu),* Milwaukee School of Engineering, Center for BioMolecular Modeling, Milwaukee, Wis.
Discover the physical and chemical properties of water using magnetic water molecules. Explore how the chemical principles of water influence protein structure using physical models.

Technology and the Interactive Notebook **(Gen)**
(Elementary–High School) *R02, Convention Center*
Gina Oldendorf *(chemteacher55@gmail.com),* Parkview Baptist School, Baton Rouge, La.
The Interactive Science notebook will be reworked for the 21st century. This common teacher tool will be reexamined and redone using free internet tools for any grade level.

Atomic Cookies and Other Culinary Science **(Gen)**
(Elementary–Middle Level) *R03, Convention Center*
Sarah J. Kemp *(sarahjayn1980@gmail.com)* and **Jane M. Kemp** *(jane.kemp@sdhc.k12.fl.us),* Hillsborough County Public Schools, Tampa, Fla.
Hungry for engaging science lessons that leave our upper elementary and middle school students satisfied and full of knowledge? Then culinary science is your recipe for success!

Demo of Carnivorous Plants in Action—Snap! **(Bio)**
(Elementary/Informal Ed) *R04, Convention Center*
Rick A. Ranew *(rick.ranew@dmr.ms.gov),* Grand Bay National Estuarine Research Reserve, Moss Point, Miss.
Using volunteers from the audience, get a "hands-on" feel for carnivorous pitcher plants. Receive an overview of the different types of carnivorous plants and their adaptations to their nutrient-deficient environment. See dissection of a modified leaf for frass (remains of insects).

Electrify Your Elementary Science Lessons (Gen)
(Elementary) *R05, Convention Center*
Steven M. Bernhisel *(steveb@linfield.edu),* Linfield College, McMinnville, Ore.
Let's investigate electricity while exploring engaging, inexpensive, and safe ways to help elementary children learn about energy, inquiry, and science process skills.

Inquiry in Action (Chem)
(Elementary) *R06, Convention Center*
Adam M. Boyd *(a_boyd@acs.org)* and **Patricia M. Galvan** *(p_galvan@acs.org),* American Chemical Society, Washington, D.C.
Explore characteristic physical properties of four similar-looking household liquids. Then as a final challenge, identify four unknowns. Explanations of observations and a handout of all activities will be provided.

GreenSchools! (Env)
(Informal Education) *R08, Convention Center*
Al Stenstrup *(astenstrup@forestfoundation.org)* and **Jackie Stallard** *(jstallard@forestfoundation.org),* Project Learning Tree, Washington, D.C.
Project Learning Tree's (PLT) GreenSchools! program connects PLT classroom activities and environmental service-learning projects. Join us to learn more about the program, how to organize a GreenSchools! training, and get free access to PLT GreenSchools! resources and materials online.

Stellar Life Cycles (Earth)
(General) *R09, Convention Center*
Doug Lombardi *(lombardi.doug@gmail.com),* Southern Nevada Regional Professional Development Program, North Las Vegas
Donna L. Young *(donna@aavso.org)*, Chandra E/PO Office, Cambridge, Mass.
Pamela B. Perry *(pperry@lewistonpublicschools.org),* Lewiston High School, Lewiston, Maine
Learn how stars evolve from formation in giant clouds of gas and dust to destruction in catastrophic explosions and how this process sets the stage for planet formation.

3:30–4:30 PM Exhibitor Workshop

The 4 "Its" of Science (Gen)
(Grades 2–4) *216, Convention Center*
Sponsor: Delta Education/School Specialty Science–Seeds
Elizabeth C. Shafer and **Suzy Loper**, Lawrence Hall of Science, University of California, Berkeley
Do it. Talk it. Read it. Write it. Experience how Seeds of Science/Roots of Reading® provides teachers with systematic, explicit instruction and students with engaging materials for hands-on and resource-based investigations. A better way to teach science; a better way to teach literacy—proven results in both!

4:00–5:15 PM Exhibitor Workshops

Cool Tech Tools for Middle School Science: Really Easy Data Collectors (Phys)
(Grades 5–8) *205, Convention Center*
Sponsor: Science Kit & Boreal Laboratories
Tracey Rich, Lamar Consolidated Independent School District, Rosenberg, Tex.
Go beyond how to use RED (Really Easy Data) probeware—and learn how to integrate the RED technology into your classroom. Walk away with middle school–level hands-on, inquiry-based activities that support science content and fit national standards as well as suggestions for data analysis and experimental setup.

Engaging Students and Enhancing Learning Outcomes with Project-based Videos (Bio)
(Grades 9–12) *207, Convention Center*
Sponsor: Houghton Mifflin Harcourt
Michael Heithaus, Florida International University, North Miami
Grab students' attention with the cutting-edge research and fast-paced, high-quality production of *That's Amazing* project-based videos. Starting with a question about the bizarre, the cool, and the exciting, Mike Heithaus takes students on a scientific investigation with the experts, but it is up to the students to work with the data collected to solve the mystery or debate its merits! Learn more about this exciting teaching tool.

Stop Teaching and Start Coaching AP Chemistry (Chem)

(Grades 9–12) *210, Convention Center*

Sponsor: Pearson

Ed Waterman, Retired Educator, Fort Collins, Colo.

Make the transition from AP Chemistry teacher to coach and help students score well on the AP Chemistry exam, even with limited time. Acquire rich resources, including an AP Test Prep book that gets results. This session is correlated to *Chemistry, The Central Science* by Brown and LeMay.

Introduction to Electrophoresis (Bio)

(Grades 9–12) *211, Convention Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Explore the basics of electrophoresis as you load your own gels and perform electrophoresis, separating brightly colored dyes on Agarose gels to determine which dyes are present in an unknown mix. Gels are run using economical, sturdy gel boxes that can be powered by inexpensive power supplies or batteries.

4:00–5:30 PM Exhibitor Workshop

Genetics: Crazy Traits and Adaptation Survivor (Phys)

(Grades 6–12) *221, Convention Center*

Sponsor: CPO Science/School Specialty Science

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

Students learn new vocabulary when they study genetics—such as traits, alleles, and genotypes. How can you predict the traits of offspring when you know the genetic makeup of the parents? These ideas will come alive as you create crazy creatures with a unique kit and study the resulting population.


Lynn Fagerholm

8:00–9:00 AM Presentations

SESSION 1

The Missing Link: Inquiry Helps Religious Students Study Evolution! (Bio)

(Middle Level–College) *201, Convention Center*

Lee Meadows *(lmeadows@uab.edu),* The University of Alabama at Birmingham

Emphasis will be placed on how inquiry can teach evolution without either waging a frontal assault on religion or undermining evolution as crucial science content.

SESSION 2

Bring the Science of Cars into the Classroom (Chem)

(High School) *202, Convention Center*

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

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

Students love cars but dislike science? Here are some lessons using the car to teach major science concepts. Yes, even if you are mechanically challenged!

SESSION 3 (two presentations)

(Elementary–Middle Level) *219, Convention Center*

Plan a Stellar Science Night—Even on a Black Hole Budget! (Gen)

Breigh Rainey *(breigh.rainey@zacharyschools.org),* **Bianca Deliberto**, and **Maegan LaBorde,** Zachary Elementary School, Zachary, La.

Tammy Wood, Zachary (La.) Community Schools

Em LeBlanc *(em.leblanc@gmail.com),* Dufrocq Elementary School, Baton Rouge, La.

Whether you're a rookie or a rocket scientist, discover a multitude of formats, activities, and organizational tools that can be tailored to suit your school's needs.

Biology Bob: The Wonders of Life (Bio)

Robert M. Everett *(robert.everett@ucf.edu),* University of Central Florida, Orlando

Come join Biology Bob as he sings concept-specific life science songs. Bring your singing voices; he encourages audience participation.

SESSION 4

ASEE Session: eGFI: Engineering, Go For It!—Dream Up the Future (Gen)

(General) *225, Convention Center*

Stacie Harrison *(s.harrison@asee.org),* and **Dennis Cummings** *(d.cummings@asee.org),* American Society for Engineering Education, Washington, D.C.

Presider: Nicholas J. Altiero *(altiero@tulane.edu),* Tulane University, New Orleans, La.

The American Society for Engineering Education (ASEE) and university faculty will introduce participants to innovative ways for incorporating engineering into the K–12 classroom.

SESSION 5

Mathematics Anxiety in the Science Classroom (Phys)

(General) *226, Convention Center*

DesLey V. Plaisance *(desley.plaisance@nicholls.edu),* Nicholls State University, Thibodaux, La.

Students struggling with math in your course? Find out how to help your students cope with math anxiety.

SESSION 6

CSI Web Adventures (Bio)

(General) *227, Convention Center*

Leslie M. Miller *(lmm@rice.edu)* and **Lynn Lauterbach** *(lynnlauterbach@gmail.com),* Rice University, Houston, Tex.

Engage students in technology, teach forensic science, and encourage STEM careers. Developed with CBS and the American Academy of Forensics, this free award-winning website provides rookie training plus cases for students to solve. Handouts!

SESSION 7

Kindergarten Inquiry Engagement: Learning to Think Like a Scientist (Gen)

(Preschool–Middle Level/Informal) *228, Convention Center*

Andrea Zdinak Andretta, Jefferson Science Magnet School, Norwalk, Conn.

To help young learners become lifelong scientists, we teach them to observe and notice using their five senses and to wonder by asking questions.

SESSION 8

NSTA Avenue Session: America's Home Energy Education Challenge (Env)

(Elementary–Middle Level) *232, Convention Center*

Ray Ann Havasy *(homeenergychallenge@nsta.org),* Center for Science Teaching and Learning, Rockville Centre, N.Y.

Sponsored by the U.S. Department of Energy and administered by NSTA, America's Home Energy Education Challenge is designed to educate grades 3–8 students about energy usage and energy efficiency and engage students and their families in a save energy, save money campaign. Learn about energy-efficiency resources available to schools, teachers, students, and families. Find out how your students can earn an Energy Fitness Award from the U.S. Secretary of Energy.

SESSION 9

NABT Session: Stand Up for REAL Science: Unite to Fight Attempts to Legislate Nonscience in the Classroom (Bio)

(General) *R05, Convention Center*

Patsye Peebles *(aepeebles@aol.com),* Retired Educator, Baton Rouge, La.

Barbara Forrest *(bforrest@selu.edu),* Southeastern Louisiana University, Hammond

There have been numerous attempts to inject nonscience into the classroom and attack evolution. Meet an expert witness from the Dover trial, hear tales from the trenches, and share YOUR experiences.

SESSION 10

AAPT Session: Physics from the Internet (Phys)

(General) *R06, Convention Center*

Rhett Allain *(rallain@selu.edu),* Southeastern Louisiana University, Hammond

There are many examples of great physics online. Just a little bit analysis needs to be applied for some great learning opportunities.

8:00–9:00 AM Workshops

Saved Our Lake, Let's Save Our Coast (Env)

(General) *217, Convention Center*

JoAnn Burke *(joann@saveourlake.org),* Lake Pontchartrain Basin Foundation, Metairie, La.

Lisa Coulon *(lcoulon@newmanschool.org),* Newman School, New Orleans, La.

Engage in activities to demonstrate a watershed, a program of water monitoring to determine and evaluate water quality in nearby streams and lakes, and finally discover the means of saving the coastal areas we live in.

Wind Power (Phys)

(Middle Level–High School) *218, Convention Center*

Jacklyn Bonneau *(bonneau@wpi.edu),* Massachusetts Academy of Math & Science, Worcester

Charge up your lessons on energy and power with a STEM-focused, creative, and authentic activity using wind power.

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

(Preschool–Elementary) *222, Convention Center*

Jennifer C. Williams *(jenniferwilliams@newmanschool.org),* Isidore Newman School, New Orleans, La.

Promote your students' enthusiasm and understanding of scientific concepts by integrating children's literature into hands-on, inquiry-based experiments and activities. This workshop will demonstrate the seamless blend of "story time" and science.

Using Process-Oriented Guided Inquiry Learning to Enhance Learning Communities in Science Classrooms (Chem)

(High School) *224, Convention Center*

Jennifer M. Miller *(jmiller1030@gmail.com)* and **Jessica Toth** *(toth@robbinsville.k12.nj.us),* Robbinsville High School, Robbinsville, N.J.

Experience the process of designing and implementing POGIL (Process-Oriented Guided Inquiry Learning) techniques in the chemistry and biology classrooms.

Teaching Science Outdoors and Making Local Connections (Env)
(Informal Education) *229, Convention Center*
Joanna Snyder *(joanna_snyder@berkeley.edu)* and **Erica Beck Spencer** *(ebspencer@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Join us and experience inquiry-based connections to ecological concepts and the local environment. Learn effective strategies for managing students and empower them to be agents of change in their communities by cultivating compelling knowledge and connections to place. Receive access to instructional resources created at the Lawrence Hall of Science. Most of this workshop will be outdoors!

Nature–ally Good Teaching in Early Childhood Education (Env)
(Preschool–Middle Level/Informal) *230, Convention Center*
Nancy A. Varian *(nvarian@malone.edu)* and **Beth A. Clark-Thomas** *(bcthomas@malone.edu),* Malone University, Canton, Ohio
Nature deficit can be evidenced in students' behaviors and preparedness for learning. Explore innovative ways to integrate inquiry-based experiences in early childhood settings with emphasis on natural world experiences.

ACS Middle Level Session: Solids, Liquids, and Gases: The Kinetic-molecular Theory of Matter (Chem)
(Middle Level) *R07, Convention Center*
Patricia M. Galvan *(p_galvan@acs.org)* and **Adam M. Boyd** *(a_boyd@acs.org),* American Chemical Society, Washington, D.C.
Explore solids, liquids, and gases on the molecular level to discover how heating and cooling affect matter.

ACS Session One: Equilibrium and Concentration (Chem)

(High School) *R08, Convention Center*

Jerry A. Bell *(j_bell@acs.org),* American Chemical Society, Washington, D.C.

Visualizing the dynamic nature of equilibria is sometimes difficult for students. Putting the concepts in textbooks to work explaining observations from activities makes the Le Chatelier concept more tangible. Extension to quantitative studies further deepens understanding of equilibria. Bring your USB flash drive and take away the presentation and the activities to use in your classes.

Let's Get Well Grounded! (Earth)

(General) *R09, Convention Center*

Parker O. Pennington IV *(p.o.pennington@gmail.com),* Retired Educator, Ann Arbor, Mich.

David F. Mastie *(mastie@umich.edu),* Retired Educator, Chelsea, Mich.

Roberta Johnson *(rmjohnsn@gmail.com),* National Earth Science Teachers Association, Boulder, Colo.

This NESTA workshop presents multiple exemplary activities for the geology classroom that bring fundamental concepts in Earth science to life for your students. Handouts!

8:00–9:00 AM Exhibitor Workshops

Biology: Cell Respiration in Germinating Peas (Bio)

(Grades 9–12) *212, Convention Center*

Sponsor: PASCO Scientific

Brent Phillipe, PASCO Scientific, Roseville, Calif.

This hands-on workshop applies PASCO's state-of-the-art science teaching solutions to one of the toughest aspects of biological investigations—cell respiration. Participate in standards-based probeware lab activities from PASCO's new biology curriculum. Be one of the first to experience how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

Bio-Rad—Genes in a Bottle™ Kit (Bio)

(Grades 6–College) *214, Convention Center*

Sponsor: Bio-Rad Laboratories

Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.

How do you fit a person in a bottle? Your DNA contains all of the information that makes you who you are. Isolate your own DNA and capture your unique essence in a stylish glass necklace!

8:00–9:15 AM Exhibitor Workshops

DNA and Enzymology-based Experiments for Classroom Forensic Science (Bio)

(Grades 7–College) *203, Convention Center*

Sponsor: Edvotek

Khuyen Mai *(info@edvotek.com)* and **Jack Chirikjian,** Edvotek, Bethesda, Md.

Join us for two experiments. The first integrates concepts of DNA fingerprinting as EDVOTEK Ready-to-Load™ samples demonstrate how DNA evidence is used in modern forensics. The second focuses on concepts of forensic enzymology as students determine levels of salivary amylase from two drivers to determine who was responsible for a car accident.

The Layered Earth! (Earth)

(Grades 5–12) *204, Convention Center*

Sponsor: Simulation Curriculum Corp.

Herb Koller, Simulation Curriculum Corp., Aurora, Ont., Canada

Join us for an interactive Earth science curriculum designed for today's classroom! What powers the internal processes that produce volcanoes, earthquakes, and mountains? What is the rock cycle and how does it work? What really is an earthquake, and when and where will the next earthquake be? Exactly how are volcanoes formed? Come experience The Layered Earth, a 3-D interactive geology curriculum.

Cool Tech Tools for Life Science: Really Easy Data Collectors (Bio)
(Grades 6–10) *205, Convention Center*
Sponsor: Science Kit & Boreal Laboratories
Tracey Rich, Lamar Consolidated Independent School District, Rosenberg, Tex.
Go beyond how to use RED (Really Easy Data) probeware—and learn how to integrate RED technology into your life science classroom and laboratory. Take home middle school–and high school–level hands-on, inquiry-based activities that support science content and fit national standards as well as suggestions for data analysis and experimental setup.

Misconception Mania: Exciting and Engaging Ways to Address Common Misunderstandings in K–8 Science (Gen)
(Grades K–8) *207, 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. Expand your awareness of common science myths through game show–style interactions and engage in a variety of easy-to-repeat and inexpensive activities that effectively correct students' misunderstandings.

Taking a Human Approach to Biology Education (Bio)
(Grades 9–12) *208, Convention Center*
Sponsor: Kendall Hunt Publishing Co.
Cyndi Long, Kendall Hunt Publishing Co. , Dubuque, Iowa
Learn about the new *BSCS Biology: A Human Approach*, fourth edition—a fully interactive, activity-driven, digital biology curriculum by a renowned author team. It uses human examples to present fundamental biology concepts and engages students through meaningful investigations that present biology in a way that unifies life and is relevant to students' lives.

Teaching Science with Toys and Treats! (Gen)
(Grades 3–11) *209, Convention Center*
Sponsor: McGraw-Hill School Education Group
Ralph Feather, Jr., Bloomsburg University, Bloomsburg, Pa.
Learn fun, practical, and engaging hands-on teaching ideas using toys and treats. Everyone is a winner—with strategies that you can use immediately. The positive reputation of this workshop precedes itself.

From Science to Engineering (Gen)
(Grades K–8) *210, Convention Center*
Sponsor: Pearson
Kathryn Thornton, University of Virginia, Charlottesville
Typical science activities focus on demonstrating a science concept whereas engineering focuses on solving a problem. Brainstorm ideas on how to extend your science activities into engineering design.

Introducing Inquiry into the Chemistry Lab (Chem)
(Grades 9–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Gain hands-on 5E (engage, explore, explain, elaborate, and evaluate) learning cycle experience to help your high school students master abstract concepts. Convert a cookbook lab into an inquiry in science experience! Also, learn more about Carolina's Inquiries in Science® lab series. Free door prizes.

Teaching About Batteries (Chem)
(Grades 6–12) *216, Convention Center*
Sponsor: Lab-Aids, Inc.
Mark Koker, Lab-Aids, Inc., Ronkonkoma, N.Y.
Although they live a battery-powered lifestyle, most middle school and high school students have no idea how batteries work. In this hands-on workshop, participants make a wet cell battery, explore the effect of using different metal electrodes on battery output, and consider ways to reduce the number of discarded batteries in the waste stream. Strong inquiry and state standard connections…and free handouts and materials!

Inquiring Minds Provide Spark for Science Lessons (Gen)
(Grades 2–8) *220, Convention Center*
Sponsor: Delta Education/School Specialty Science
Tom Graika, Consultant, Lemont, Ill.
Johanna Strange, Consultant, Richmond, Ky.
Inquiry is at the heart of science teaching. Using topics from magnetism and electricity, learn how inquiry strategies can provide a variety of learning opportunities for students. Participants will be involved in guided, challenge, and open inquiries. Take home a resource packet.

8:00–9:30 AM Exhibitor Workshops

K–8 Science with Vernier (Gen)

(Grades K–8) *213, Convention Center*

Sponsor: Vernier Software & Technology

David Carter *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.

In this hands-on workshop, you will learn how easy it is for your students to use Vernier probeware to explore temperature, heart rate, magnetic fields, and more. Try experiments from two of our popular lab books, *Elementary Science with Vernier* and *Middle School Science with Vernier*. Learn the advantages of using the Vernier LabQuest™ handheld or our low-cost line of Go! products.

Genetics: Crazy Traits and Adaptation Survivor (Phys)

(Grades 6–12) *221, Convention Center*

Sponsor: CPO Science/School Specialty Science

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

Students learn new vocabulary when they study genetics—such as traits, alleles, and genotypes. How can you predict the traits of offspring when you know the genetic makeup of the parents? These ideas will come alive as you create crazy creatures with a unique kit and study the resulting population.

8:00–10:00 AM CESI Breakfast

Metamorphosis: Transforming Elementary Science Outdoors and In (M-1)

(Tickets Required; $34) *R02, Convention Center*

Steve Rich *(bflywriter@comcast.net),* Author and Regional Coordinator, Georgia Youth Science & Technology Centers, University of West Georgia, Carrollton

Join our keynote speaker, Steve Rich, and members of CESI for this breakfast. Steve will discuss how to transform your science instruction with materials you can find in the school yard and ideas from the book *Outdoor Science: A Practical Guide.* Whether you take students outdoors or not, you'll find resources that enhance your inquiry lessons, including ideas for integrating science with mathematics, reading, writing, and social studies.

Steve Rich taught elementary and middle grades science in Georgia for 15 years, earning National Board Certification, two NSTA teaching awards, and the Presidential Award for Excellence in Science Teaching. After leaving the classroom, Steve served as Georgia's K–8 Science Specialist at the Department of Education in Atlanta. He is currently the coordinator of the West Georgia Youth Science & Technology Center, and holds degrees from Georgia State University and The University of Georgia. He is the author of three books for teachers, including the 2010 NSTA Press best seller, Outdoor Science: A Practical Guide.

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 12 Noon on Thursday.

8:00–10:30 AM Exhibitor Workshop

Using Student Science Notebooks to Assess Learning (Experienced Users) (Gen)

(Grades 2–8) *215, Convention Center*

Sponsor: Delta Education/School Specialty Science–FOSS

Ellen Mintz, Charleston County Schools, Charleston, S.C.

Virginia Reid, Consultant, Olympia, Wash.

Brian Campbell and **Jessica Penchos,** Lawrence Hall of Science, University of California, Berkeley

Already using student science notebooks? What more can you do with them? We will use materials from the FOSS Variables Module to look for evidence of student learning that will inform instruction, and we'll explore strategies for providing feedback to students. Sample FOSS materials will be distributed.

8:00–11:00 AM Short Courses

An Inquiry Approach to the Solar System (SC-3)
(Middle Level) *La Galerie 1, Marriott*
Tickets Required: $11
Lisa O. Brown *(lisa.r.brown@nasa.gov),* NASA Johnson Space Center, Houston, Tex.
For description, see page 37.

Brain Basics for Dummies: Classroom Applications That Make a Difference (SC-4)
(General) *La Galerie 3, Marriott*
Tickets Required: $51
Kathy Brandon, Christy Bucker, Laurie Ilgenfritz, Robert Sayers, and **Wendy Jordan,** STARBASE Louisiana: Barksdale Air Force Base
For description, see page 38.

8:00–11:30 AM Short Course

Build Your Own Video Game (SC-5)
(General) *La Galerie 2, Marriott*
Tickets Required: $23
Erik Nickerson *(erik@olotolo.com), www.olotolo.com,* Boulder, Colo.
For description, see page 38.

9:00 AM–5:00 PM Exhibits

Hall A, Convention Center

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

9:30–10:30 AM Featured Presentation

Cool Computer Activities for Science and Social Studies (Gen)
(General) *La Louisiane Ballroom, Convention Center*

Tammy Worcester *(tammyw@essdack.org),* Instructional Technology Specialist, ESSDACK, Hutchinson, Kans.

Presider: Carolyn Smith, Science Chair, El Dorado (Ark.) School District

Are you looking for new and creative ways to use the computer in your science classroom? This fast-paced session will feature dozens of quick and easy tools and activities that you can use immediately! Come see how science lessons and learning can be enlivened, enhanced, and updated through the integration of resources and tools found on the internet and on the classroom computer.

Tammy Worcester is actively engaged in improving educational practices by sharing unique and creative ways to use traditional computer tools in the classroom.

Worcester began her career as a teacher of various grade levels from kindergarten to middle school. While teaching, she also served as the technology coordinator for her K–8 school. For the past 12 years, she has worked for ESSDACK, an educational service center, as an instructional technology specialist, providing staff development and training in the area of technology integration.

Her outreach efforts extend to authoring nearly a dozen technology resources books and developing software applications for teachers. In addition, her website www.tammyworcester.com *is a popular online resource for teachers around the world.*

9:30–10:30 AM Presentations

SESSION 1

AMSE Session: Using STEM for Medical Career Exploration (Gen)

(High School) *201, Convention Center*

Robert L. Ferguson *(r.l.ferguson1@csuohio.edu),* Cleveland State University, Cleveland, Ohio

Join us for inquiry-based science concept lessons developed for urban high school students participating in a Health Careers Summer Institute.

SESSION 2

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

(High School) *202, Convention Center*

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. Handouts and samples will be provided.

SESSION 3

Teach Science Inquiry Skills via Killing the Electric Car (Gen)

(High School–College) *218, Convention Center*

John E. Clark *(jeclark@volusia.k12.fl.us),* Deltona High School, Deltona, Fla.

Go beyond the traditional approach of teaching scientific inquiry through learning the steps of the scientific method. Use this unique lesson plan involving the documentary *Who Killed the Electric Car?* to teach your students an approach to scientific inquiry that they can actually use in the real world after they graduate.

SESSION 4

Texas Teacher Rocks the Science World (Bio)

(Middle Level–College) *219, Convention Center*

Paul O. Briones *(profpaul31@gmail.com),* Kermit High School, Kermit, Tex.

Professor Paul is passionate when he explains, "All students learn from three inputs: the auditory, visual, and kinesthetic." His latest approach uses the '80s era keytar to make learning science fun and effective.

SESSION 5

Urban Science Education Leadership Efforts: Elementary STEM Summer Learning in Baltimore City Public Schools (Gen)

(Elementary/Supervision) *222, Convention Center*

Katya Denisova *(eddenisova@bcps.k12.md.us),* **Linda Evans** *(levans@bcps.k12.md.us),* and **Evelyn R. Tolliver** *(etolliver@bcps.k12.md.us),* Baltimore (Md.) City Public Schools

Chanell Brooks *(ckbrooks@bcps.k12.md.us),* Rosemont Elementary/Middle School #63, Baltimore, Md.

Terrell M. Davis *(tdavis01@bcps.k12.md.us),* Montebello Elementary Junior Academy, Baltimore, Md.

Adren C. Thompson *(acthompson@bcps.k12.md.us),* Garrett Heights Elementary Middle School, Baltimore, Md.

This year, Baltimore City Public Schools launched an Elementary STEM Teacher Clinic with the goal of providing opportunities to engage in Project Based Learning in science, math, and literacy to K–5 students in 22 schools that are most struggling. Join us as STEM Master teachers share details of the program and have participants engage in sample activities from the curriculum.

SESSION 6

ASEE Session: UTeach*Engineering:* NASA Design Challenges (Gen)

(General) *225, Convention Center*

Lisa Guerra *(lisa.a.guerra@nasa.gov),* The University of Texas at Austin

Presider: Nicholas J. Altiero *(altiero@tulane.edu),* Tulane University, New Orleans, La.

Receive an overview of the UTeach*Engineering* high school course being piloted, including how the NASA design challenges are being incorporated. Participants will learn about future replication plans and associated professional development.

SESSION 7

Engaging Students in Chemistry Outside the Classroom: A Look at ChemClub (Chem)

(General) *226, Convention Center*

Michael T. Mury *(m_mury@acs.org),* American Chemical Society, Washington, D.C.

Presider: Cheryl Pierce, Lakeland High School, Lakeland, Fla.

Chemistry students are provided enrichment through various activities in ChemClub. Join us to learn about this free, exciting program. Hear from club leaders.

SESSION 8

Medical Mysteries Web Adventures (Bio)

(General) *227, Convention Center*

Leslie M. Miller *(lmm@rice.edu)* and **Lynn Lauterbach** *(lynnlauterbach@gmail.com),* Rice University, Houston, Tex.

Teach microbiology, reinforce process skills, and incorporate technology into your curriculum. Experience this free online adventure game that promotes scientific inquiry and STEM careers while teaching about infectious diseases, immunity, and the scientific method. Handouts!

SESSION 9

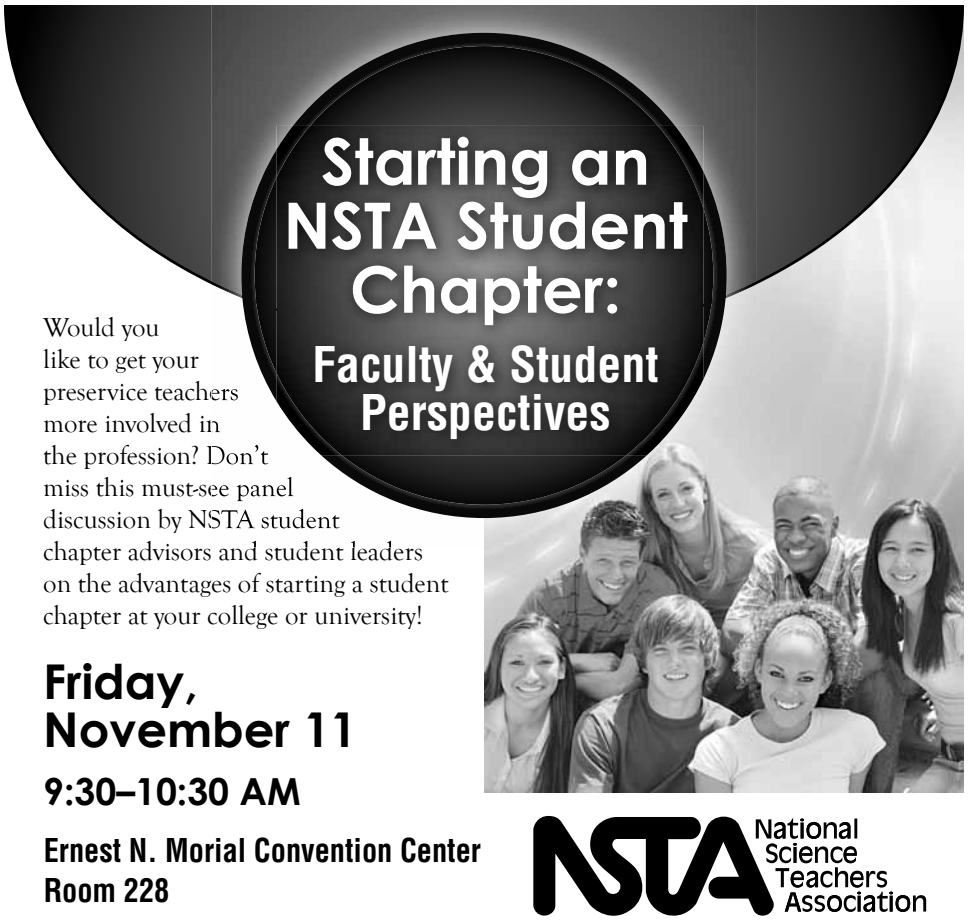
Starting an NSTA Student Chapter: Faculty and Student Perspectives (Gen)

(General) *228, Convention Center*

Howard Wahlberg *(hwahlberg@nsta.org),* Assistant Executive Director, Member, Chapter, and Customer Relations, NSTA, Arlington, Va.

Teshia Birts *(tbirts@nsta.org),* Senior Manager, Chapter Relations, NSTA, Arlington, Va.

Interested in getting your preservice teachers more involved in the profession? You won't want to miss this must-see panel discussion conducted by NSTA student chapter advisors on the advantages of starting an NSTA student chapter at your college or university.



SESSION 10

Write for NSTA's Journals **(Gen)**

(General) *231, Convention Center*

Ken Roberts, Assistant Executive Director, Journals, NSTA, Arlington, Va.

Meet with the editors of NSTA's award-winning journals to learn how to prepare and submit a manuscript for publications. Editors will be available to discuss and critique your article ideas.

SESSION 11 (two presentations)

(Middle Level–High School/Informal) *232, Convention Center*

NARST Session: Strategies for Fostering Scientific Creativity in the Chemistry Classroom **(Gen)**

CANCELED

Allison Antink Meyer *(aantink@iit.edu),* Illinois Institute of Technology, Chicago

Walk away with classroom strategies appropriate for grades 6–12 that emphasize student scientific creativity.

NARST Session: Bridging the Epistemological Gap for Out-of-School Time (OST) and Non-OST Science Learners **(Gen)**

Karen Benn Marshall *(karen.marshall@montgomerycollege.edu*), Montgomery College, Takoma Park, Md.

Let's discuss the findings of a qualitative study involving the impact of an informal science program on upper elementary schoolchildren. The theoretical perspective of epistemology employed in this study may shed new light on the ways in which OST science experiences might impact children's learning.

9:30–10:30 AM Workshops

Fudge Chemistry **(Chem)**

(High School) *224, Convention Center*

Shirley Elizabeth Mire *(semire@caddo.k12.la.us)***,** Booker T. Washington New Technology High School, Shreveport, La.

Students make fudge while learning fundamental chemistry skills such as measurement and conversions, data collection and analysis using a graphing calculator, and matter identification along with its properties.

Facilitating Early Childhood Education with Project Learning Tree **(Env)**

(General) *229, Convention Center*

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

Learn about and experience effective hands-on activities to introduce science concepts to young children using PLT's new early childhood curriculum. Each participant will receive PLT's Environmental Experiences for Early Childhood activity guide and accompanying music CD.

To Infinity and Beyond! **(Earth)**

(Elementary) *230, Convention Center*

Christy I. Flynn *(christy.flynn@gpsb.org),* South Grant Elementary School, Dry Prong, La.

From balloon rockets to heat containment shields, your students can create them all. Come explore some fun hands-on activities using amazing NASA resources.

NSTA Press Session: Picture-Perfect Science, K–4 **(Gen)**

(Elementary) *R01, Convention Center*

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

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

Learn how to use picture books to guide inquiry in the primary classroom.

NABT Session: The Making of the Fittest: HHMI's Night at the Movies in Your Classroom (Bio)
(Middle Level–College) *R05, Convention Center*
Mary Colvard *(mcolvard@tds.net),* Howard Hughes Medical Institute, Chevy Chase, Md.
Be one of the first to view Howard Hughes Medical Institute's (HHMI) new short film, *The Making of the Fittest*, which covers natural selection and adaptation. Participants will receive classroom-ready film guides, activities, and a FREE copy of all three films in the DVD series. The guides and activities are appropriate for all levels of high school biology.

AAPT Session: Nano Self-Assembly: Modeling Force and Motion (Phys)
(Informal Education) *R06, Convention Center*
John R. Thacker *(john.thacker@stpsb.org)* and **Kassie Dasher,** Covington High School, Covington, La.
Build your own mechanical model to illustrate principles of force and motion in self-assembly at the nanoscale.

ACS Middle Level Session: Changes of State: Evaporation and Condensation (Chem)
(Middle Level) *R07, Convention Center*
Patricia M. Galvan *(p_galvan@acs.org)* and **Adam M. Boyd** *(a_boyd@acs.org),* American Chemical Society, Washington, D.C.
Explore evaporation and condensation on the molecular level to discover how heating and cooling affect the rate of these processes.

ACS Session Two: Equilibrium and Energy (Chem)
(High School) *R08, Convention Center*
Jerry A. Bell *(j_bell@acs.org),* American Chemical Society, Washington, D.C.
Some chemical reactions produce energy and others require energy to proceed. Are energy and equilibrium related? How do we find out? Under what conditions can the energetics of a chemical system be changed and what are the consequences? Bring your USB flash drive and take away the presentation and the activities to use in your classes.

Climate Change Classroom Toolkit (Earth)
(General) *R09, Convention Center*
Roberta Johnson *(rmjohnsn@nestanet.org),* National Earth Science Teachers Association, Boulder, Colo.
Explore the scientific foundations of what we know about climate change, greenhouse gases, and energy consumption through hands-on and data-rich classroom activities. Handouts!

9:30–10:30 AM Exhibitor Workshop

Physics and Physical Science: Investigating Motion (Phys)
(Grades 6–12) *212, Convention Center*
Sponsor: PASCO Scientific
Brent Phillipe, PASCO Scientific, Roseville, Calif.
Explore the differences between speed and velocity in this hands-on, probeware-based workshop featuring PASCO carts and the new PAStrack. Your hands-on experience will include use of one of PASCO's standards-based SPARKlabs to improve student understanding of motion, a foundation topic in the study of physics and physical science. Additional activities will be demonstrated.

9:30–11:30 AM Exhibitor Workshop

Bio-Rad—Forensic DNA Fingerprinting Kit (AP Biology Lab 6) (Bio)
(Grades 9–College) *214, Convention Center*
Sponsor: Bio-Rad Laboratories
Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.
Use molecular scissors to create a DNA fingerprint. Restriction enzyme digestion and DNA gel electrophoresis help determine which suspect committed the crime. In this workshop, you will get hands-on experience with micropipettes and DNA gel electrophoresis equipment. Extend this kit with a plasmid mapping activity.

10:00–11:15 AM Exhibitor Workshops

Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (Chem)
(Grades 8–College) *203, Convention Center*
Sponsor: Wavefunction, Inc.
Paul Price *(sales@wavefun.com),* Wavefunction, Inc., Irvine, Calif.
Widely recognized as a powerful teaching tool, molecular modeling is now a common component of introductory chemistry classes at the college level. Join us for this hand-on workshop and learn how to integrate state-of-the-art modeling into the high school curriculum for both regular and AP chemistry. Bring your own laptop (Windows or Mac OS X) or use a laptop provided for the workshop.

Explore the Blue Near You: Bring Critical Aquatic Issues to Life with New Resources! (Gen)
(Grades K–5) *204, Convention Center*
Sponsor: Discovery Education
Jannita Demian, Discovery Education, Silver Spring, Md.
Teaching your students about the value of clean and healthy waterways…as well as the importance of outdoor recreational activities…is more important than ever before. The Take Me Fishing™ campaign and Discovery Education's *Explore the Blue* workshop will investigate these aquatic issues with hands-on and digital activities that you can use in your classroom throughout the school year. Come see a demo of the resources available, including elementary standards-aligned lesson plans, the unique virtual fishing game *Thrill of the Catch*, tips for creating an aquarium terrarium, and more. Enter a free raffle to win a classroom's worth of Ready2Fish fishing rods and reel combos from Take Me Fishing and Discovery Education.

Cool Tech Tools for Physical Science: Really Easy Data Collectors (Phys)
(Grades 6–10) *205, Convention Center*
Sponsor: Science Kit & Boreal Laboratories
Brenda Royal, Webb School, Knoxville, Tenn.
Go beyond how to use RED (Really Easy Data) probeware—and learn how to integrate RED technology into your physical science classroom and laboratory. Walk away with middle school– and high school–level hands-on, inquiry-based activities that support science content and fit national standards as well as suggestions for data analysis and experimental setup.

Fantastic Physical Science Demonstrations from Flinn Scientific (Phys)
(Grades 6–12) *206, Convention Center*
Sponsor: Flinn Scientific, Inc.
Lori Kessler, Flinn Scientific, Inc., Batavia, Ill.
Amaze your students with quick demonstrations that teach common physical science topics, including sound, color dynamics, energy, pressure, density, rotation, and scientific inquiry. More than a dozen effective demonstrations will be performed.

Effective STEM Challenges for the Classroom (Gen)
(Grades 3–8) *207, Convention Center*
Sponsor: Houghton Mifflin Harcourt
Michael DiSpezio, Science Writer and Educational Consultant, North Falmouth, Mass.
Join Michael DiSpezio for this high-energy, entertaining workshop that explores effective and realistic STEM construction challenges. Experience how a bit of guidance can direct student experience toward addressing specific content standards in science and math. Engineer and test models of air bag–cushioned Mars Landers and catapults and test your designs against others. Join in the fun and leave with new ideas.

Nonstandard Standards (Gen)
(General) *208, Convention Center*
Sponsor: Educational Innovations, Inc.
Margaret Flack *(maflack@insightbb.com)*, Educational Innovations, Inc., Norwalk, Conn.
Learn how using products from Educational Innovations can help you teach the science standards. You will hear the words "cool" and "wow" throughout your classroom. Door prizes and freebies!

Teaching Science with Toys and Treats! (Gen)
(Grades 3–11) *209, Convention Center*
Sponsor: McGraw-Hill School Education Group
Ralph Feather, Jr., Bloomsburg University, Bloomsburg, Pa.
Learn fun, practical, and engaging hands-on teaching ideas using toys and treats. Everyone is a winner—with strategies that you can use immediately. The positive reputation of this workshop precedes itself.

Destructive Forces of Nature: Earthquakes (Earth)
(Grades K–8) *210, Convention Center*
Sponsor: Pearson
Michael Wysession, Washington University in St. Louis, Mo.
Earthquakes are fascinating phenomena—dramatic and exciting. Many fear them because they are deadly and unpredictable. Scientists are drawn to them because of the important role they play in discovering how our planet works. Join us as Michael Wysession, a Pearson author and world-renowned seismologist, gives an exciting account of what we know about earthquakes and answers any questions you may have.

Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (Bio)
(Grades 6–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Explore animal diversity by comparing and contrasting anatomical adaptations of the pig, rat, perch, and frog. Participants use hands-on dissection to identify characteristics of these popular vertebrates. This is an excellent comparative dissection activity featuring our very best Carolina's Perfect Solution specimens. Free dissection supplies and great door prizes.

Teaching About Gene Expression (Bio)
(Grades 6–12) *216, Convention Center*
Sponsor: Lab-Aids, Inc.
Mark Koker, Lab-Aids, Inc., Ronkonkoma, N.Y.
SGI Biology is the new high school biology course from Science Education for Public Understanding Program (SEPUP). Developed with NSF support, the course has five units: sustainability, ecology, cell biology, genetics, and evolution. In this workshop from the genetics unit, participants use model chromosomes to explore how genes are "turned off and on" by transcription factors.

Integrating Science and Literacy: Grades 1–6 (Gen)
(Grades 1–6) *220, Convention Center*
Sponsor: Delta Education/School Specialty Science
Johanna Strange, Consultant, Richmond, Ky.
Tom Graika, Consultant, Lemont, Ill.
We'll show you various strategies and Delta products that can integrate reading and language arts into your science programs. Learn how your students can experience the enjoyment of learning science with Delta Science Modules and make the literacy connection. Receive a workshop packet and related Delta materials.

10:00–11:30 AM Exhibitor Workshops

Exploring Science with Vernier (Gen)
(Grades 7–College) *213, Convention Center*
Sponsor: Vernier Software & Technology
Matt Anthes-Washburn *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.
Use sensors and software to graph and analyze scientific data with state-of-the-art technology for your science classroom. In this hands-on session, you'll learn from master teachers and technology experts about Vernier LabQuest™ handheld and Logger *Pro* software. Explore how probeware can help you teach core topics in physics, chemistry, biology, Earth science, and environmental science.

Chemistry and the Atom: Fun with Atom Building Games! (Phys)
(Grades 6–12) *221, Convention Center*
Sponsor: CPO Science/School Specialty Science
Patsy Eldridge, CPO Science/School Specialty Science, Nashua, N.H.
Our understanding of matter is so abstract that students have a hard time making sense of these fascinating concepts. In this workshop, you will experience innovative games and activities that give students with different learning styles opportunities to explore and grasp atomic structure and the periodic table.

11:00 AM–12 Noon Presentations

SESSION 1
Write Your Way to Success: Grant-writing Strategies for You and Your Chemistry Students (Chem)
(High School) *202, Convention Center*
Kenetia Thompson *(k_thompson2@acs.org)* and **Michael T. Mury** *(m_mury@acs.org),* American Chemical Society, Washington, D.C.
Looking to fund your innovative ideas? We will give you pointers for writing a fundable proposal and share grant opportunities from the American Chemical Society.

SESSION 2
NASA CERES S'COOL Project: Be a S'COOL Cloud Observer! (Earth)
(Elementary–High School) *217, Convention Center*
Susan W. Moore *(susan.w.moore@nasa.gov)* and **Preston M. Lewis** *(preston.lewis@nasa.gov),* SSAI/NASA Langley Research Center, Hampton, Va.
Engage your students in making real-world cloud and weather observations for NASA. Become a S'COOL cloud observer! Plenty of handouts!

SESSION 3

Successful Grant Writing (Gen)

(General) *222, Convention Center*

Shannon Lafont, Chairperson, NSTA New Orleans Area Conference, and Lafourche Parish School Board, Thibodaux, La.

Presider: Michelle Moriant, Thibodaux Elementary School, Thibodaux, La.

Are you in need of hands-on classroom materials? Leave this session with the knowledge and resources needed to locate and write successful teacher grants.

SESSION 4

ASEE Session: Using Project-based Engineering to Engage Middle School Students (Gen)

(General) *225, Convention Center*

Joseph Calantoni, Naval Research Laboratory Detachment, NASA Stennis Space Center, Miss.

Presider: Nicholas J. Altiero *(altiero@tulane.edu),* Tulane University, New Orleans, La.

Department of Defense engineers will share lessons learned and examples of inquiry and design activities that have been developed in partnership with middle school teachers for use in the classroom and in informal educational settings.

SESSION 5

Not Just Hot Air: Exploring Climate Change's Interconnections and Sustainable Solutions (Earth)

(General) *226, Convention Center*

Thomas Allison, Facing the Future, Summerfield, Fla.

Equip your students to explore the web of climate change issues. Hands-on lessons investigate the interconnections between Earth systems and human actions using carbon footprint, emissions trading, and energy policy. Free curriculum!

SESSION 6

Meeting the Challenge of Cultivating Student Learning in Large Classroom Environments (Bio)

(High School–College) *227, Convention Center*

Thomas H. Nassif *(nassif@gwu.edu),* George Washington University, Washington, D.C.

Motivate your students with interactive websites, visually stimulating presentations, and inquiry-based discussions to capture student interest and accommodate different learning styles in large classroom environments!

SESSION 7

Preservice Elementary Teachers' Performance and Reflection on Formative Assessment Probes (Gen)

(General) *228, Convention Center*

Christine A. Royce *(caroyce@aol.com),* NSTA Director, Professional Development, and Shippensburg University, Shippensburg, Pa.

Let's examine preservice students' performances on Formative Assessment Probes in different areas as well as their reflections as to where they believe they "learned" the material.

SESSION 8

NSTA Avenue Session: Toshiba/NSTA ExploraVision (Gen)

(General) *231, Convention Center*

Brian P. Short *(exploravision@nsta.org),* Assistant Director, Science Education Competitions, NSTA, Arlington, Va.

ExploraVision is a K–12 competition that motivates students and challenges them to think creatively about scientific innovation 20 years into the future. Discover how students can win up to $240,000 in savings bonds for envisioning new technologies. Learn how ExploraVision supports classroom goals; illustrates connections between science and technology; and offers recognition, computers, and other prizes for schools, students, teachers, and mentors. Session participants have a chance to win a Toshiba product!

SESSION 9 (two presentations)
(Informal Education) *232, Convention Center*
NARST Session: What Creationist Students May Be Thinking About as You Teach Evolution (Bio)
David E. Long *(delong@valdosta.edu),* Valdosta State University, Valdosta, Ga.
Examine student understandings and attitudes about evolution through interviews with creationist students. Hear about their existential anxiety as they contemplate evolution, and its relationship toward their conceptions of faith.

NARST Session: Teaching Elementary Science in the Age of School Reform: A Look at Teachers' Personal Agency Beliefs (Gen)
CANCELED
Jessica Gale, Emory University, Atlanta, Ga.
Join us as we examine the self-efficacy and context beliefs (personal agency beliefs) of elementary science teachers in the context of comprehensive school reform. Attention will be paid to the contradictions that come with simultaneous implementation of science education initiatives and certain comprehensive school reform models.

SESSION 10
AAPT Session: Simple and Inexpensive Physics Demos (Phys)
(Informal Education) *R06, Convention Center*
Rhett Allain *(rallain@selu.edu),* Southeastern Louisiana University, Hammond
Invigorate your lessons with physics demos. These simple and low-cost demonstrations are sure to excite and inspire your students.

11:00 AM–12 Noon Workshops

Nano-Size Me: Helping Students Understand Size-dependent Properties (Chem)
(High School) *218, Convention Center*
Whitney H. Cobb *(wcobb@mcrel.org),* McREL, Denver, Colo.
Learn effective strategies for integrating nanoscience learning goals related to size-dependent properties into secondary science classrooms. Handouts provided plus a free copy of the NanoLeap CD.

Kinesthetic Is Kool (Gen)
(Middle Level–College) *219, Convention Center*
Chuck Downing *(cdowning@tvusd.k12.ca.us),* Great Oak High School, Temecula, Calif.
Many students today process material best when moving—they are kinesthetic learners. Come experience several different kinesthetic activities in life science.

Technology Makes STEM Instruction Easy (Chem)
(Middle Level–High School) *224, Convention Center*
Gregory B. Dodd *(gbdodd@gmail.com),* Kanawha County Schools, Charleston, W.Va.
Learn how the use of appropriate technology in the classroom can integrate science, math, and engineering concepts and make STEM instruction a snap.

Global Connections: Forests of the World (Env)
(General) *229, Convention Center*
Al Stenstrup *(astenstrup@forestfoundation.org)* and **Jackie Stallard** *(jstallard@forestfoundation.org)*, Project Learning Tree, Washington, D.C.
The forests of the world are changing. Project Learning Tree's new secondary module, *Global Connections: Forests of the World*, explores this vital component of Earth's natural systems. Take home an activity module and poster sets.

NSTA Press Session: A Framework and Tools to Make Tough Grades 3–5 Science Topics Approachable (Gen)
(Elementary/Supervision) *R01, Convention Center*
Susan B. Koba *(skoba@cox.net),* NSELA President, Omaha, Neb.
Carol T. Mitchell *(cstillwaters@aol.com; cmitchell@unomaha.edu),* University of Nebraska, Omaha
Use our NSTA Press book, *Hard-to-Teach Science Concepts: A Framework to Support Learners, Grades 3–5*, to enhance lessons on tough topics and improve learning.

CESI Session: Council for Elementary Science International Share-a-Thon (Gen)
(Preschool–Middle Level) *R03, Convention Center*
Barbara Z. Tharp *(btharp@bcm.edu),* Baylor College of Medicine, Houston, Tex.
Betty Crocker *(betty.crocker@unt.edu),* Retired Educator, Denton, Tex.
Bianca Deliberto *(bianca.deliberto@zacharyschools.org),* **Kristy Gilpin** *(kristy.gilpin@zacharyschools.org),* and **Breigh Rainey** *(breigh.rainey@zacharyschools.org),* Zachary Elementary School, Zachary, La.
Sarah Gehling, Gwen Savario, Shannon Wall, and **Heather Williams,** Northwestern Elementary School, Zachary, La.
Debra Hardy *(debra.hardy@krumisd.net),* Krum (Tex.) Independent School District
Tammy Wood, Zachary (La.) Community Schools
Join CESI as we share a wealth of ready-to-use, classroom-tested, hands-on activities created just for the K–8 teacher. Handouts and website links!

NABT Session: Seashell Taxonomy: A Venomous Topic (Bio)
(Middle Level–College) *R05, Convention Center*
Mary Colvard *(mcolvard@tds.net),* Science Teachers Association of New York State, Deposit
This new free interactive lesson from the Howard Hughes Medical Institute explores concepts such as evolution, phylogeny, and DNA fingerprinting. Take home a free DVD and activity kit.

ACS Middle Level Session: Density—A Molecular View (Chem)
(Middle Level) *R07, Convention Center*
Patricia M. Galvan *(p_galvan@acs.org)* and **Adam M. Boyd** *(a_boyd@acs.org),* American Chemical Society, Washington, D.C.
Explore the density of different materials to understand how atoms and molecules affect the density of different substances.

ACS Session Three: Rate (Chem)
(High School) R08, Convention Center
Jerry A. Bell *(j_bell@acs.org),* American Chemical Society, Washington, D.C.
Chemistry is about change. Some chemical changes are very slow and others are very fast. How are the rates (speeds) of chemical reactions measured? What are the factors that affect the rates? Are these factors the same as those that are responsible for changes in equilibria? Bring your USB flash drive and take away the presentation and the activities to use in your classes.

Activities from Across the Earth System (Earth)
(General) R09, Convention Center
David F. Mastie *(mastie@umich.edu),* Retired Educator, Chelsea, Mich.
Roberta Johnson *(rmjohnsn@gmail.com),* National Earth Science Teachers Association, Boulder, Colo.
Parker O. Pennington IV *(p.o.pennington@gmail.com),* Retired Educator, Ann Arbor, Mich.
In this fast-paced workshop, educators and scientists share their repertoire of hands-on, inquiry-based activities spanning the five "spheres" of Earth system science. Handouts provided.

11:00 AM–12 Noon Exhibitor Workshop

Middle School—Investigating Earthquakes: Bringing Science and Technology Together (Phys)
(Grades 6–8) 212, Convention Center
Sponsor: PASCO Scientific
Holly Vida, PASCO Scientific, Roseville, Calif.
Experience authentic STEM learning! Integrate technology in real science investigations as you explore plate tectonics, earthquakes, and force. Everyday materials, SPARKscience technology, and Sally Ride Science SPARKlabs are used to develop a deeper understanding of STEM concepts and solve real-life problems.

11:30 AM–1:30 PM Exhibitor Workshop

FOSS Planetary Science for Middle School (Gen)
(Grades 5–8) 215, Convention Center
Sponsor: Delta Education/School Specialty Science–FOSS
Larry Malone, Alan D. Gould, and **Jessica Penchos,** Lawrence Hall of Science, University of California, Berkeley
How have we come to understand the solar system? How many other planetary systems are there and how can we find and explore them? Students engage these questions in the new FOSS Planetary Science Course. This introduction of the new edition will highlight new features, strategies, and content of this course.

12 Noon–1:15 PM Exhibitor Workshops

Molecular Modeling in Middle and High School Classrooms: Engage Your Students! (Chem)
(Grades 8–College) 203, Convention Center
Sponsor: Wavefunction, Inc.
Paul Price *(sales@wavefun.com),* Wavefunction, Inc., Irvine, Calif.
Do you see your students struggle with the key concepts of molecular science? Would you like to teach more effectively with the help of molecular simulations that are scientifically sound? Attend this hands-on workshop and learn how to truly engage your students. Bring your own laptop (Windows or Mac OS X) or use a laptop provided for the workshop.

Forensic Science: Understanding the Math and Science of Blood Spatter (Bio)
(Grades 8–12) 205, Convention Center
Sponsor: Science Kit & Boreal Laboratories
Brenda Royal, Webb School, Knoxville, Tenn.
By using simulated blood, participants will interpret and understand blood spatter. Learn how to determine if red splashes and spatter are blood, interpret blood drop patterns from different vertical heights, interpret blood spatter on different surfaces, and interpret and measure blood drop patterns from an angled impact.

Sparking Interest and Learning with Chemistry: A Part 1 Experience (Chem)

(Grades 9–12) *207, Convention Center*

Sponsor: Houghton Mifflin Harcourt

Jerry Sarquis, Professor Emeritus, Miami University, Oxford, Ohio

Mickey Sarquis, Terrific Science, Healdsburg, Calif.

Join Jerry and Mickey Sarquis, recognized leaders in chemistry education and authors of *Modern Chemistry,* for a session full of hands-on activities and engaging demos using inexpensive and readily available materials. Learn how to spark imagination and interest in chemistry with simple but powerful tricks and tips! (The Part 2 Experience, page 107, will include a unique set of activities.)

Art *vs.* Science: The Role of Science in Wine Making (Gen)

(Grades 8–12) *208, Convention Center*

Sponsor: Fisher Science Education

Robert Marshall *(marshallr@carnegiesciencecenter.org),* Carnegie Science Center, Pittsburgh, Pa.

From the vineyard to the table, modern winemakers employ a multitude of scientific techniques to help them control every stage of the wine-making process. Learn how contemporary winemakers use scientific equipment and testing to help them face the challenge of producing the highest quality wines, while still maintaining the integrity of their art. Gain hands-on experience with real-world equipment used by enologists and learn about national degree programs in viniculture and enology. Take home activity guides.

I See What You Mean! Developing Visual Literacy (Gen)

(Grades K–6) *209, Convention Center*

Sponsor: McGraw-Hill School Education Group

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

Interpreting and understanding the visuals and illustrations that students encounter in their science textbooks take more than just luck. Hear what current research shows and experience some new instructional strategies.

The Next Generation of Science Virtual Labs for the Entire Science Curriculum! No Cleanup (Gen)

(Grades 9–12) *210, Convention Center*

Sponsor: Pearson

Brian Woodfield, Brigham Young University, Provo, Utah

Brian Woodfield, author and creator of Pearson's Virtual Lab series, will demo some of his latest eye-popping virtual labs that are so visually realistic you have to see them to believe them! Whether you are short on time or short on lab materials, virtual labs gives students the opportunity to experiment numerous times with various materials with no cleanup.

Strawberry DNA and Molecular Models (Bio)

(Grades 6–12) *211, Convention Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Remove your students' abstract notion of DNA structure and function through hands-on techniques. Follow a simple laboratory procedure to extract and visualize actual DNA from fresh strawberries. Then use models to show DNA structure. These kits will quickly make the fascinating world of DNA approachable and tangible in the classroom.

Teaching About Gas Exchange (Bio)

(Grades 6–12) *216, Convention Center*

Sponsor: Lab-Aids, Inc.

Mark Koker, Lab-Aids, Inc., Ronkonkoma, N.Y.

Don't hold your breath, but many students have misconceptions about respiration, a key life process and important science concept. In this hands-on workshop, participants learn about gas exchange in the lungs and determine how much CO_2 is in their exhaled breath. This session is suitable for middle school and high school levels and includes free handouts and materials.

12 Noon–1:30 PM Luncheon

Preservice and New Teachers Luncheon (M-2)

(Tickets Required; $12) *R02, Convention Center*

Sponsored by Kendall Hunt Publishing Co.

Join us for this lively function where you'll learn about resources from NSTA for your science classroom and career. Enjoy lunch (generously sponsored by Kendall Hunt Publishing Company).

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 12 Noon on Thursday.

Note: Tickets will be provided only to preservice teachers or teachers with up to five years of teaching experience.

12 Noon–1:30 PM Exhibitor Workshops

Exploring Science with Vernier (Gen)

(Grades 7–College) *213, Convention Center*

Sponsor: Vernier Software & Technology

Matt Anthes-Washburn *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.

Use sensors and software to graph and analyze scientific data with state-of-the-art technology for your science classroom. In this hands-on session, you'll learn from master teachers and technology experts about Vernier LabQuest™ handheld and Logger *Pro* software. Explore how probeware can help you teach core topics in physics, chemistry, biology, Earth science, and environmental science.

Light and Optics: A Series of EnLIGHTening Experiments! (Phys)

(Grades 6–12) *221, Convention Center*

Sponsor: CPO Science/School Specialty Science

Erik Benton, CPO Science/School Specialty Science, Nashua, N.H.

Experience CPO's Optics with Light and Color kit complete with LED flashlights, a laser, lenses, a mirror, and more. Try color mixing, relate it to human vision, and examine different spectra. Shine a laser through a prism and see for yourself the phenomenon of total internal reflection. We make studying light exciting!

12:30–1:30 PM Presentations

SESSION 1

Middle School Motivation and Classroom Centers (Bio)

(Middle Level–High School) *201, Convention Center*

Stephanie B. Gautreaux *(stephaniegautreaux@gmail.com),* Patterson Junior High School, Patterson, La.

Classroom centers target all levels of learning to reinforce student comprehension. I'll explain how to incorporate review centers to help meet the needs of all learners. Emphasis will be placed on how to motivate middle and junior high students while incorporating literacy strategies into all content areas. Help students to give more than their BEST!

SESSION 2

Corrosion Is Everywhere—Use It to Make Chemistry Relevant and Fun (Chem)

(High School) *202, Convention Center*

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

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

Use corrosion to teach practical applications of chemistry concepts. Make reactivity, oxidation/reduction, solution chemistry, and corrosion prevention contextual and exciting using inquiry-based labs. Handouts available!

SESSION 3

Using Science Stories to Teach Chemistry (Chem)

(High School) *219, Convention Center*

Marta Gmurczyk *(m_gmurczyk@gmail.com)* and **Michael J. Tinnesand** *(mjtinnesand@gmail.com),* American Chemical Society, Washington, D.C.

In this presentation, we examine how magazine articles about science can be used to help students understand basic chemistry concepts and enrich their ability to apply what they have learned to everyday life.

SESSION 4

ASEE Session: VEX Robotics in the Classroom and in Competition (Gen)

(General) *225, Convention Center*

Jason Morrella *(jason_morrella@roboticseducation.org),* Robotics Education and Competition Foundation, Campbell, Calif.

Presider: Nicholas J. Altiero *(altiero@tulane.edu),* Tulane University, New Orleans, La.

Engage students in STEM in the classroom and in competition with the VEX Robotics Platform. Students in more than 4,000 schools and 200 competitions learn and play with VEX Robotics. Find out how to incorporate VEX Robotics in your classroom.

SESSION 5

NASA's High-Energy Vision—Chandra and the X-ray Universe (Earth)

(General) *226, Convention Center*

Donna L. Young *(donna@aavso.org),* Chandra E/PO Office, Cambridge, Mass.

Doug Lombardi *(lombardi.doug@gmail.com),* Southern Nevada Regional Professional Development Program, North Las Vegas

Pamela B. Perry *(pperry@lewistonpublicschools.org),* Lewiston High School, Lewiston, Maine

Listen to the latest discoveries from NASA's Chandra X-ray Observatory—including massive black holes, neutron stars, supernova events, stellar evolution, colliding galaxies, and dark matter.

SESSION 6

Professional Development: Travel, Share, and Learn (Bio)

(Elementary–High School) *227, Convention Center*

Alice A.S. Moraes *(alice.moraes@converse.edu),* Converse College, Spartanburg, S.C.

Professional development programs deepen your knowledge in science, keep you up to date with current issues, and bring new teaching strategies to enlighten your students. Find out about several professional development opportunities available for K–12 teachers and get tips on how to obtain fellowships/scholarships to finance them.

SESSION 7

Resources and Research for Professional Development Providers (Gen)

(Supervision/Administration) *228, Convention Center*

Christine A. Royce *(caroyce@aol.com),* NSTA Director, Professional Development, and Shippensburg University, Shippensburg, Pa.

Jeanne Fox *(jfox@bcbe.org),* Daphne Middle School and Northcentral University, Daphne, Ala.

Christine Howard Nassar *(chnassar@mcpss.com),* Mobile (Ala.) County Public Schools

Join members of the NSTA Professional Development Committee for a roundtable discussion as they provide short synopses of the current literature and research available in the PD area.

SESSION 8

NSTA **NSTA Avenue Session: Disney's Planet Challenge: Project Based Learning and Service Learning–based Lesson Development and Funding (Env)**

(Elementary–Middle Level/Supervision) *231, Convention Center*

Breigh Rainey *(breigh.rainey@zacharyschools.org),* Zachary Elementary School, Zachary, La.

Learn about Project Based Learning (PBL) opportunities from previous Disney's Planet Challenge participating teachers as they discuss their winning projects, provide tips for successfully engaging your students, and offer advice on how to secure grants and funding for your own classroom projects. Presenters will share how they have raised significant dollars in classroom funding and give insight into their experience in creating engaging and successful PBL and environmental service lessons. Join the discussion and learn what you can do to help your classroom!

SESSION 9

NSELA Session: Tools for Science Leaders (Gen)
(Supervision/Administration) 232, Convention Center
Susan B. Koba *(skoba@cox.net),* NSELA President, Omaha, Neb.
Elizabeth Allan *(eallan@uco.edu),* University of Central Oklahoma, Edmond
Jerry D. Valadez *(jdvscience@yahoo.com),* California State University, Fresno
William Veal *(vealw@cofc.edu),* College of Charleston, S.C.
Ted Willard *(twillard@aaas.org),* AAAS Project 2061, Washington, D.C.
Join us as we share tips, tools, and tactics that support various science leaders, from teacher leaders to district and state coordinators, in their efforts to support quality science teaching and learning. Small group sessions will focus on in-depth discussions on specific tools/ideas relating to a participant's context.

SESSION 10

NABT Session: Phylogenetic Trees: How to Illustrate Evolutionary Relationships Using Real Data (Bio)
(Middle Level–College) R05, Convention Center
Adrienne S. Lopez *(alopez@lsu.edu)* and **Bryan C. Carstens** *(carstens@lsu.edu),* Louisiana State University, Baton Rouge
Explore the concept of phylogeny and how it can be integrated into biology curricula. Learn about current research in evolutionary biology through activities that illustrate the concepts of heredity, descent with modification, and biological classification. Discover web-based tools enabling you to build phylogenetic trees from several familiar groups of organisms. Lesson plans are targeted for grades 9–12.

12:30–1:30 PM Workshops

Forests, Carbon, and Climate Change (Env)
(Informal Education) 217, Convention Center
Maria Ghiso *(mghiso@ra.org),* Rainforest Alliance, New York, N.Y.
Al Stenstrup *(astenstrup@forestfoundation.org),* Project Learning Tree, Washington, D.C.
Rainforest Alliance and Project Learning Tree have created hands-on lessons to help students understand the carbon cycle and the role forests play in climate change.

Science Facilities 101: Safe and Sustainable Facilities (Gen)
(Supervision/Administration) 222, Convention Center
LaMoine L. Motz *(llmotz@comcast.net),* 1988–1989 NSTA President, and Science Education and Facilities Specialist, White Lake, Mich.
Juliana Texley *(jtexley@att.net),* Palm Beach State College, Boca Raton, Fla.
Sandra West Moody *(sw04@txstate.edu),* Texas State University, San Marcos
James T. Biehle *(biehlej@sbcglobal.net),* Inside/Out Architecture, Inc., Kirkwood, Mo.
Presider: LaMoine L. Motz
So you want new facilities? Does your curriculum define your science teaching facility? Hear from the experts on planning and designing safe, sustainable, and flexible facilities for inquiry/project-based science. Join the authors of *NSTA Guide to Planning School Science Facilities (2nd Ed.)* and learn the "basics" of science facility planning, designing, and budgeting. See page 119 for "Science Facilities 102."

Inquiry-based Hands-On Activities and Demonstrations (Chem)
(Middle Level–High School) 224, Convention Center
John W. Fedors *(jfedors@wavecable.com),* Science Activities, Lincoln, Calif.
Explore energy, magnetism, diffusion, passive transport, cell organelles, heat transfer, hydrophilic/hydrophobic materials, and forensic potentials.

Drop the Lecture and Let the Students Pick Up the Learning in Environmental Science (Env)
(High School) 229, Convention Center
Kristen R. Dotti *(kristen_dotti@yahoo.com),* Christ School, Arden, N.C.
Using a game of chance to simulate island biogeography, an "Olympic" committee to judge water quality, and a biogeochemical cycle group challenge, this session will add several new activities to your bag of tricks for teaching in-depth Advanced Placement Environmental Science (APES) topics in an engaging and memorable manner.

Energy, Energy, ENERGY! (Phys)
(Elementary) 230, Convention Center
Tammy Wood, Zachary (La.) Community Schools
Heather Williams *(heather.williams@zacharyschools.org),* **Sarah Gehling** *(sarah.gehling@zacharyschools.org),* **Gwen Savario** *(gwen.savario@zacharyschools.org),* **Karen Collins** *(karen.collins@zacharyschools.org),* **Shannon Wall** *(shannon.wall@zacharyschools.org),* and **Leagh Carlton**, Northwestern Elementary School, Zachary, La.
Presider: Karen Collins
This hands-on, dynamic workshop will actively engage participants in learning about ENERGY through art, literature, and math connections; drama; embedded technology; and student-centered experiments.

CESI Session: Council for Elementary Science International Presents Opportunities Galore (Gen)
(Preschool–Middle Level) R03, Convention Center
Barbara Z. Tharp *(btharp@bcm.edu),* Baylor College of Medicine, Houston, Tex.
Join CESI and get involved at home and internationally as we share a wealth of ready-to-go resources tailored to the K–8 teacher.

AAPT Session: The Ultra-sensitive Electroscope (Phys)
(High School) R06, Convention Center
Greg Sollie *(gsollie@catholichigh.org),* Catholic High School, Baton Rouge, La.
Build an electroscope capable of detecting an electric field from a significant distance. Demonstrations will show how to use this device in your classroom.

ACS Middle Level Session: The Periodic Table, Energy Levels, and Bonding (Chem)
(Middle Level) R07, Convention Center
Patricia M. Galvan *(p_galvan@acs.org)* and **Adam M. Boyd** *(a_boyd@acs.org),* American Chemical Society, Washington, D.C.
Do an activity to explore the first 20 elements of the periodic table and take a fresh look at covalent and ionic bonding.

ACS Session Four: Catalysis (Chem)
(High School) R08, Convention Center
Jerry A. Bell *(j_bell@acs.org),* American Chemical Society, Washington, D.C.
Your body is loaded with catalysts that speed up the chemical reactions necessary for life without themselves being used up in the reactions. As we explore the nature of catalysis, keep in mind that one goal of chemistry is creating catalysts to increase the efficiency of the processes involved in producing the goods that help make our lives longer and more pleasant. Bring your USB flash drive and take away the presentation and the activities to use in your classes.

12:30–4:30 PM Short Course

Mass *vs.* Weight: A Heavy-Duty Concept (SC-6)
(Upper Elementary–Middle Level) La Galerie 1, Marriott
Tickets Required: $11
Steve Culivan *(stephen.p.culivan@nasa.gov),* NASA Stennis Space Center, Miss.
For description, see page 38.

1:00–2:00 PM Exhibitor Workshop

Chemistry—Atmospheric Pressure (Chem)
(Grades 9–12) 212, Convention Center
Sponsor: PASCO Scientific
Tom Loschiavo, PASCO Scientific, Roseville, Calif.
This workshop applies PASCO's state-of-the-art science teaching solutions to a topic covered in all levels of chemistry classes—gases in the atmosphere. Use this standards-based, guided-inquiry activity as a platform to teach your students about pressure, gases, stoichiometry, and so much more. Experience how SPARKscience can change your teaching practice and improve student understanding of core chemistry topics.

1:00–2:15 PM Exhibitor Workshop

Are You a Problem (Solving) Teacher? Want to Become One? (Gen)

(Grades K–8) *220, Convention Center*

Sponsor: Delta Education/School Specialty Science

Tom Graika, Consultant, Lemont, Ill.

Johanna Strange, Consultant, Richmond, Ky.

We would like to show you how a problem-based approach to science lessons provides an opportunity for students to be engaged in activities that incorporate Science, Technology, Engineering, and Math. Problem activities from Delta Science Modules will be emphasized.

1:00–2:30 PM Exhibitor Workshop

Bio-Rad—Enzymes and Biofuels: Go from Grass to Gas! (AP Biology Lab 2) (Bio)

(Grades 9–College) *214, Convention Center*

Sponsor: Bio-Rad Laboratories

Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.

Reveal the power of enzyme kinetics by illustrating the theory through a real-world application of biofuels. In this workshop, you will determine the rate of reaction for the enzyme cellobiase, a key enzyme in the production of cellulosic. Can biofuels solve global warming? Let your students decide if this is possible!

1:00–4:00 PM Short Courses

Developing a "Naturalist" Approach in the Teaching of Science Concepts and Inquiry (SC-7)

(General) *La Galerie 3, Marriott*

Tickets Required: $71

William J. Klein, Western Iowa Tech Community College, Sioux City

For description, see page 38.

Adventures Beyond the Classroom: Exploring Local Biodiversity (SC-8)

(Grades 3–10) *La Galerie 5, Marriott*

Tickets Required: $18

Joanna Snyder *(joanna_snyder@berkeley.edu),* and **Erica Beck Spencer** *(ebspencer@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

For description, see page 39.

2:00–3:00 PM Featured Presentation

All Eyes on Brain-STEM: Merging Brain Research and STEM Education to Reach All Students (Gen)

(General) *La Louisiane Ballroom, Convention Center*

Kenneth Wesson *(kenawesson@aol.com),* Educational Consultant, Neuroscience, San Jose, Calif.

Presider: Mary Helen Blanchard, Sustaining Science Success for All Students Strand Leader, NSTA New Orleans Area Conference, Baton Rouge, La.

As the car trunk closes, six ecstatic travelers turn to one another asking, "Where are we going? How do we get there? And how will we know we've arrived?"

Educational and business leaders crisscross the nation espousing their unequivocal support for STEM education, as journalists provide a steady stream of gleaming stories about innovative STEM classrooms around the country. Yet, one might notice a glaring lack of uniformity from one story to the next. However, despite the wide range of divergence in details and the vast number of variables, all of this gets overshadowed by the sudden renewal of student "excitement, enthusiasm, and engagement" we witness everywhere regardless of the surroundings. These "Three E's" are unmistakably the "constants," which are essential emotional elements in human learning.

This session will highlight research on how the brain learns best, applying that research to meet the goals of STEM education. We will take STEM from "promising" to "operational" in 60 minutes.

Kenneth Wesson works as an educational consultant for preschool through university institutions and organizations. An expert on the neuroscience of learning and methods for creating classrooms and learning environments that are "brain considerate," Wesson regularly addresses educational organizations and institutions. His work is frequently referenced in Parents *Magazine and the journal* Brain World. *Wesson regularly addresses counseling associations, school districts, and parenting organizations on establishing "brain-considerate" learning environments.*

2:00–3:00 PM Presentations

SESSION 1

American Chemical Society Guidelines and Recommendations for Teaching High School Chemistry: A Resource for High School Chemistry Teaching (Chem)

(High School–College/Supervision) *202, Convention Center*

Sean P. Madden *(smadden1@greeleyschools.org),* Greeley West High School, Greeley, Colo.

Brian J. Kennedy, Thomas Jefferson high School for Science and Technology, Alexandria, Va.

Marta Gmurczyk, American Chemical Society, Washington, D.C.

Join us for an interactive discussion on the revised ACS Guidelines and Recommendations on Teaching High School Chemistry and how they can be used to enhance your program activities and leverage for resources.

SESSION 2

Exploring the Science Framework (Gen)

(General) *222, Convention Center*

Francis Q. Eberle *(feberle@nsta.org),* NSTA Executive Director, Arlington, Va.

Harold Pratt *(hspratt@comcast.com),* NSTA Parliamentarian, 2001–2002 NSTA President, and Educational Consultants, Inc., Littleton, Colo.

Presider: Patricia Simmons, NSTA President, and North Carolina State University, Raleigh

In July the National Research Council released *A Framework for K–12 Science Education* that identifies the key scientific ideas and practices all students should learn by the end of high school. The framework now serves as the foundation for new K–12 science education standards, but also stands alone as a useful tool for many in the science education community. Join us as we explore different instructional implications of the framework for science teaching, such as science and engineering practices, cross-cutting concepts, the inclusion of engineering, and more.

SESSION 3

MY NASA DATA: Using Earth Systems Data Visualization in the Classroom (Earth)

(Elementary–High School) *226, Convention Center*

Susan W. Moore *(susan.w.moore@nasa.gov)* and **Preston M. Lewis** *(preston.lewis@nasa.gov),* SSAI/NASA Langley Research Center, Hampton, Va.

Learn how to engage your students in using MY NASA DATA as a data visualization tool for NASA Earth Systems satellite data. Plenty of handouts!

SESSION 4

Go West, Lewis and Clark! Enhancing History with STEM Integration (Bio)

(Elementary–High School) *227, Convention Center*

Robert Miller *(millermail@mac.com),* Port Orange Elementary School, Port Orange, Fla.

See how one class integrates science, math, and orienteering in a culminating excursion that models the scientific ventures of Lewis and Clark.

SESSION 5

Before and After Retirement: Practicalities and Possibilities (Gen)

(General) *228, Convention Center*

Howard Wahlberg *(hwahlberg@nsta.org),* Assistant Executive Director, Member, Chapter, and Customer Relations, NSTA, Arlington, 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 6

NSTA Avenue Session: The NSTA Learning Center: Free Professional Development Resources and Opportunities for Educators (Gen)

(General) *231, Convention Center*

Flavio Mendez, Senior Director, NSTA Learning Center, NSTA, Arlington, Va.

Lost when it comes to finding online professional development resources? With more than 6,000 resources (25% of which are free) and quality professional development opportunities, the NSTA Learning Center has the answers! Attend and receive free access to some of the fee-based resources. (Ice cream provided.)

SESSION 7

NSELA Session: Preservice Teachers and Science Leadership: Collaborating in Support of New Teachers to Impact Student Learning (Gen)

(Supervision/Administration) *232, Convention Center*

Susan B. Koba *(skoba@cox.net),* NSELA President, Omaha, Neb.

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

William Veal *(vealw@cofc.edu),* College of Charleston, S.C

This session examines what new teachers are supposed to

know and do, and what can be done to improve their skills and their students' performance.

SESSION 8

NABT Session: Applicious Science (Bio)

(General) *R05, Convention Center*

Rebecka Rocquin *(rebecka.rocquin@tangischools.org),* Ponchatoula High School, Ponchatoula, La.

Christina Lee Verberne *(christina.verberne@tangischools.org),* Loranger High School, Loranger, La.

Do you have an iPod Touch, iPhone, or iPad? Do you need new ways to enhance your instruction and engage your students? Come explore interesting free biology and science educational apps for grades 6–12.

SESSION 9

AAPT Session: Forces, Motion, and Newton's Laws: The Hovercraft (Phys)

(General) *R06, Convention Center*

Larry Blanchard *(lblancha@uno.edu),* University of New Orleans, La.

Judy McShan *(scienceismagicjm@yahoo.com),* Chalmette High School, Chalmette, La.

Forces and motions are what we experience at all times! Newton clarified this in the simplest three laws of motion. Discover a clever and complete classroom demonstration using the hovercraft to illustrate these laws. Handouts!

2:00–3:00 PM Workshops

Forensics Science Can Turn Every Science into a Relevant Science (Gen)
(Middle Level–High School) *217, Convention Center*
Jacklyn Bonneau *(bonneau@wpi.edu),* Massachusetts Academy of Math & Science, Worcester
Using forensic activities in your science classroom makes science relevant and fun. Take part in an activity that requires minimal technology and pick up handouts on activities for all science disciplines.

21st-Century Learning: Mission Possible (Gen)
(General) *218, Convention Center*
Cathi Cox-Boniol *(ccox@lincolnschools.org),* New Tech @ Ruston, La.
Your mission, should you choose to accept it, is to explore 21st-century skills and how they should be impacting your science classroom.

Science in the Media: Bringing Cutting-Edge Astronomy from Scientists to Students (Phys)
(High School) *224, Convention Center*
A. Marie Pool *(marie.pool@clintonokschools.org),* Clinton High School, Clinton, Okla.
How does a scientific discovery go from scientists to interested audiences? Let your students try their hands at it with NASA's *Astronomy in the News*.

ASEE Session: NASA's BEST Students (Beginning Engineering, Science, and Technology) (Gen)
(General) *225, Convention Center*
John Boffenmyer *(john.c.boffenmyer@nasa.gov),* NASA Stennis Space Center, Miss.
Presider: Nicholas J. Altiero *(altiero@tulane.edu),* Tulane University, New Orleans, La.
"Nice Ride!" Children are natural engineers! Learn to capture the excitement of space exploration and engineering by designing and building an exploration buggy. Zoom, Zoom!

7 Billion and Counting: Lessons for Our Planet's Future (Env)
(Middle Level–High School) *229, Convention Center*
Sue Ellen Lyons *(slyons@holycrosstigers.com),* Holy Cross School, New Orleans, La.
Engage in innovative activities to explore connections between human population growth, resource consumption, and the changing face of our planet. Free CD-ROM of activities.

Elastic Power: Wind Up Your Engines and Explore (Phys)
(Elementary–Middle Level) *230, Convention Center*
Norm Barstow *(barstow@hartford.edu),* Hartford, Conn.
Use an elastic-powered wooden car to explore energy transfer and force and motion. Continued exploration focuses on mass, friction, inertia, motion, momentum, and force.

ACS Middle Level Session: Polarity of the Water Molecule and Its Consequences (Chem)
(Middle Level) *R07, Convention Center*
Patricia M. Galvan *(p_galvan@acs.org)* and **Adam M. Boyd** *(a_boyd@acs.org)*, American Chemical Society, Washington, D.C.
Investigate why water is a polar molecule and explore how water's polarity affects evaporation and dissolving.

ACS Session Five: Light as a Reactant and/or Product (Chem)
(High School) *R08, Convention Center*
Jerry A. Bell *(j_bell@acs.org),* American Chemical Society, Washington, D.C.
Some chemical reactions produce energy and others require energy to proceed. Light is a form of energy, so it is natural to wonder whether and under what conditions reactions might produce light or whether light (perhaps from the Sun) could be harnessed to drive reactions that otherwise would not proceed. Bring your USB flash drive and take away the presentation and the activities to use in your classes.

National Earth Science Teachers Association Earth Science Share-a-Thon (Earth)
(Elementary–High School) *R09, Convention Center*
Michelle Harris *(michelle.harris@apsva.us),* Wakefield High School, Arlington, Va.
Roberta Johnson *(rmjohnsn@nestanet.org),* National Earth Science Teachers Association, Boulder, Colo.
Wendy DeMers *(2ydnew2@gmail.com),* Louisiana Earth Science Teachers Association, New Orleans
Alan D. Gould *(agould@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Janie Hamby *(jhamby@mpsb.us)* and **Donna Harrell** *(dharrell@mpsb.us),* Morehouse Magnet School, Bastrop, La.
Louisa Hodges *(louisa.hodges@mybcsmail.com),* Bethany Christian School, Baker, La.
Pamela Whiffen *(pwpwr@aol.com),* NASA Educator Ambassador, Phoenix, Ariz.
Cathy Williamson *(cwilliamson@sciport.org),* Sci-Port: LOUISIANA'S Science Center, Shreveport
Join NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

2:00–3:15 PM Exhibitor Workshops

Detecting Radiation in Our Radioactive World (Gen)
(Grades 5–12) *203, Convention Center*
Sponsor: American Nuclear Society
Toni Bishop *(tbishop@ans.org),* American Nuclear Society, La Grange Park, Ill.
Discover how to use Geiger counters to detect radioactivity and teach principles of nuclear science. Expand your knowledge of the ways nuclear technology is applied in the everyday life of our society.

Science of Everyday Life (Gen)
(Grades K–12) *204, Convention Center*
Sponsor: Discovery Education
Jannita Demian, Discovery Education, Silver Spring, Md.
Science is more than just Bunsen burners and beakers. Help students discover how science is a part of our everyday lives. A partnership with Discovery Education and 3M, *http://scienceofeverydaylife.com* offers teachers and families tools to facilitate learning and promote innovative thinking with hands-on lesson plans and interactive features designed to inspire K–12 students. Also learn how to prepare your students for the Discovery Education 3M Young Scientist Challenge. Join us for a chance to win an innovation kit filled with 3M supplies!

Forensic Science: Understanding the Math and Science of Blood Using Blood Spatter (Bio)
(Grades 8–12) *205, Convention Center*
Sponsor: Science Kit & Boreal Laboratories
Brenda Royal, Webb School, Knoxville, Tenn.
By using simulated blood, participants will interpret and understand blood spatter. Learn how to determine if red splashes and spatter are blood, interpret blood drop patterns from different vertical heights, interpret blood spatter on different surfaces, and interpret and measure blood drop patterns from an angled impact.

Connecting to Chemistry: Igniting Student Motivation with STEM Examples and Ideas (Chem)
(Grades 9–12) *207, Convention Center*
Sponsor: Houghton Mifflin Harcourt
Michael DiSpezio, Science Writer and Educational Consultant, North Falmouth, Mass.
Join Michael DiSpezio for this minds-on/hands-on overview of inspiring examples that integrate STEM into your chemistry curriculum. Learn ways to teach gas solubility based upon the bends and the building of the Brooklyn Bridge! Who is Synthia and is she proof positive that biochemists can create artificial life-forms? Will fuel cells propel us into the future? Find out how to hook your students on the STEM/Chem connection!

Using the OHAUS Triple Beam Balance™ as a STEM-focused Skill Platform (Gen)
(Grades 5–10) *208, Convention Center*
Sponsor: Frey Scientific/Ohaus Corp.
Frey Scientific and Neo/SCI
Have an opportunity to learn about STEM education and how to integrate the OHAUS Triple Beam balance in building critical STEM-focused skills like measuring! Learn how to use STEM-based virtual labs and bench activities to enhance student learning. By performing a STEM-focused activity, participants will learn how to integrate STEM-focused measuring, balance theory, and data analysis skills into their curriculum. All participants receive a FREE OHAUS Triple Beam sampler containing STEM activities, and one person will receive a FREE OHAUS Triple Beam Balance.

Fun, Fabulous Foldables® (Gen)
(Grades K–8) *209, Convention Center*
Sponsor: McGraw-Hill School Education Group
Dinah Zike, Dinah-Might Adventures, LP, San Antonio, Tex.
Experience how these 3-D graphic organizers can transform your science lesson into an engaging, interactive learning experience. These interactive tools offer endless possibilities for collecting data, building understanding, and assessing student comprehension.

Using Mastering to Improve Learning Outcomes (Gen)
(Grades 9–12) *210, Convention Center*
Sponsor: Pearson
Margaret Benoit, Pearson, Boston, Mass.
Are you interested in enhancing your students' learning while collecting diagnostic information to support just-in-time teaching? Find out how Mastering—Pearson's powerful online homework and tutorial system—can help you boost student performance in honors and Advanced Placement courses.

Drive Student Inquiry with Carolina's Advanced Environmental Science Labs (Env)
(Grades 9–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
What do water quality, soil properties, and the Coriolis effect have in common? All three are explored in Carolina's exciting inquiry-based lab series for AP Environmental Science. Get hands-on experience with activities designed to inspire students to learn new concepts and apply them in their local environment. Free materials provided.

What Is the Difference Between Heat and Temperature? (Chem)
(Grades 9–12) *216, Convention Center*
Sponsor: Lab-Aids, Inc.
Mark Koker, Lab-Aids, Inc., Ronkonkoma, N.Y.
How many of your students can answer this question? We will show you a powerful, intuitive, and nearly foolproof way to teach this key idea in chemistry. The concept of heat and the flow of energy is a modern way to look at a core concept that appears in many of your standards. Also, we will use a classroom-rugged new probe system that stores data on a portable SD card!

2:00–3:30 PM Exhibitor Workshops

Exploring Science with Vernier **(Gen)**
(Grades 7–College) *213, Convention Center*
Sponsor: Vernier Software & Technology
Matt Anthes-Washburn *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.
Use sensors and software to graph and analyze scientific data with state-of-the-art technology for your science classroom. In this hands-on session, you'll learn from master teachers and technology experts about Vernier LabQuest™ handheld and Logger *Pro* software. Explore how probeware can help you teach core topics in physics, chemistry, biology, Earth science, and environmental science.

Sound, Waves, and Music **(Phys)**
(Grades 6–12) *221, Convention Center*
Sponsor: CPO Science/School Specialty Science
Erik Benton, CPO Science/School Specialty Science, Nashua, N.H.
Come create and control beautiful standing wave patterns resonating on a vibrating string with CPO's wave machine. Use a synthesizer to explore the wave properties of sound. Play music on a set of PVC palm pipes and learn how to make sets of your own.

2:00–4:00 PM Exhibitor Workshop

Developing Language Using FOSS (Gen)
(Grades K–8) *215, Convention Center*
Sponsor: Delta Education/School Specialty Science–FOSS
Brian Campbell, Diana Velez, and **Joanna Totino,** Lawrence Hall of Science, University of California, Berkeley
Active learning requires active thinking, and thinking involves language. Discover the ways language is used to help students make sense of their active-learning FOSS experiences. We will model a FOSS investigation using listening and speaking, reading and writing, and language-development strategies to further content knowledge, scientific practices, and academic literacy.

2:30–3:30 PM Exhibitor Workshop

Renewable Energy Exploration: Solar and Wind Power (Env)
(Grades 9–12) *212, Convention Center*
Sponsor: PASCO Scientific
Brent Phillipe, PASCO Scientific, Roseville, Calif.
Investigate energy output from a solar cell and wind turbine under varying environmental conditions in this hands-on workshop featuring Horizon Renewable Energy SPARKlabs. This collection of 10 guided inquiry labs, developed jointly by PASCO and Horizon Fuel Cell Technologies, provides a standards-based, state-of-the-art science teaching solution to support your high school Earth or environmental science program. Additional labs from the collection will be demonstrated.

3:00–5:30 PM Exhibitor Workshop

Bio-Rad—GMO Investigator Kit (Bio)
(Grades 10–College) *214, Convention Center*
Sponsor: Bio-Rad Laboratories
Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.
Have your favorite foods been genetically modified (GM)? This hands-on workshop teaches the basics of DNA extraction, PCR, and gel electrophoresis and how these techniques are used to test common grocery store food products for the presence of GM foods. Are GM crops a good thing? You decide!

3:15–4:45 PM Presentation

SESSION 1
USEL Forum: State of K–16 Science Education Post Katrina—Voices from Louisiana (Gen)
(General) *R01, Convention Center*
Bobby Jeanpierre *(bobby.jeanpierre@ucf.edu),* University of Central Florida, Orlando
Wendy DeMers *(2ydnew2@gmail.com),* Hynes Charter School, New Orleans, La.
Dana Gonzalez *(dana_gonzalez@nops.k12.la.us),* Orleans Parish School Board, New Orleans, La.
Presider: Bobby Jeanpierre
The Urban Science Education Leadership forum will report on the challenges and successes of facilitating quality science education in New Orleans' schools post-Katrina from the perspectives of classroom teachers and administrators. The session will conclude with a brief question-and-answer period.

3:30–4:30 PM Presentations

SESSION 1

Inquiry in AP Biology—It Doesn't Have to Be an Oxymoron (Bio)

(High School–College) *201, Convention Center*

Chuck Downing *(cdowning@tvusd.k12.ca.us),* Great Oak High School, Temecula, Calif.

Walk away with several strategies, along with examples, for adding inquiry "chunks" to existing and future curricula in both AP and "regular" biology classes.

SESSION 2

Teaching and Learning in the Digital Age: Chemistry Resources Teachers and Students Can Rely On (Chem)

(General) *202, Convention Center*

Lynn M. Diener *(dienerl@mtmary.edu),* Mount Mary College, Milwaukee, Wis.

Marta Gmurczyk *(m_gmurczyk@acs.org)*, American Chemical Society, Washington, D.C.

Discover ChemEd DL's (Chemical Education Digital Library) innovative collection of reliable and free digital resources for high school teachers, including Models 360, ChemTeacher, and the award-winning Periodic Table Live!

SESSION 3

NSTA Avenue Session: Communicate, Collaborate, and Create: Changing Your Classroom and the World (Env)

(General) *204, Convention Center*

Jannita Demian *(jannita_demian@discovery.com),* Discovery Education, Silver Spring, Md.

Step in and learn how to transform teaching and learning in your classroom through simple online tools that allow you and your students to communicate, collaborate, and create. Take it a step further by providing an authentic audience and purpose to change your world through *www.wecanchange.com,* the premier national K–12 student sustainability competition. We'll highlight the challenge process and wide variety of free resources available to help you and your class make an impact.

SESSION 4

Dazzling Deceptions: Discrepant Events That Delight and Mystify! (Gen)

(General) *217, Convention Center*

Alan J. McCormack *(amccorma@mail.sdsu.edu),* NSTA Retiring President, and San Diego State University, San Diego, Calif.

Science experiences that seem contrary to "common sense" are great motivators. Pique children's interest and imagination, and build creative and logical-thinking skills with discrepant events.

SESSION 5

Real-World Math: Engaging Students with Math and Science Through Global Issues (Gen)

(General) *218, Convention Center*

Thomas Allison, Facing the Future, Summerfield, Fla.

Bring contemporary global issues like climate change, sustainable design, and population growth alive in your class. Participate in hands-on lessons that use real-world data to integrate math and science. Free teacher's guide!

SESSION 6

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

(General) *222, Convention Center*

Rob LaSalvia, NASA Glenn Research Center, Cleveland, Ohio

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

NASA Explorer Schools (NES) has searched thousands of materials on the NASA website to provide a comprehensive set of free STEM concepts teaching materials for grades 4–12.

SESSION 7

ASEE Session: eGFI: Engineering, Go For It!—Dream Up the Future (Gen)

(General) *225, Convention Center*

Stacie Harrison *(s.harrison@asee.org)* and **Dennis Cummings** *(d.cummings@asee.org),* American Society for Engineering Education, Washington, D.C.

Presider: Nicholas J. Altiero *(altiero@tulane.edu),* Tulane University, New Orleans, La.

The American Society for Engineering Education (ASEE) and university faculty will introduce participants to innovative ways for incorporating engineering into the K–12 classroom.

SESSION 8

Using NASA Resources to Create a Summer Experience (Earth)
(General) *226, Convention Center*
John F. Loehr *(jfloehr@cps.k12.il.us),* Chicago (Ill.) Public Schools
Join me as I highlight how the Chicago Public Schools and its partners used NASA resources to create a summer experience for students and teachers.

SESSION 9

UVA Research Experience for Teachers Program: Demos of K–12 Engineering Teaching Kits (Bio)
(General) *227, Convention Center*
Juliet J. Trail *(trail@virginia.edu),* University of Virginia, Charlottesville
Discover new cutting-edge engineering materials for your classroom. The National Science Foundation's Research Experience for Teachers (RET) program sponsors K–12 teachers for a summer of conducting research in a University of Virginia STEM laboratory. Join us as teachers from Summer 2010 demonstrate hands-on innovative kits geared toward elementary, middle, and high school students.

SESSION 10

Let's Get Clicking (Gen)
(Elementary) *232, Convention Center*
Sharon Serigny, W.S. Lafargue Elementary School, Thibodaux, La.
Michelle Morvant, Thibodaux Elementary School, Thibodaux, La.
Presider: Sharon Serigny
Organize science units electronically for the 21st century. You can digitally store lessons by embedding videos, interactive board activities, and hands-on explorations enhancing class activities.

SESSION 11

NABT Session: Reorganize and REVITALIZE with the Louisiana Association of Biology Educators (Bio)
(General) *R05, Convention Center*
Patsye Peebles *(aepeebles@aol.com),* Retired Educator, Baton Rouge, La.
Networking and sharing effective teaching ideas are the goals of this LABE (Louisiana Association of Biology Educators) reorganization session. Honor the 2011 Outstanding Biology Teacher awardee and win a door prize for sharing.

3:30–4:30 PM Workshops

NASA: Size and Scale of the Universe (Earth)
(Middle Level–High School) *219, Convention Center*
Pamela Whiffen *(pwpwr@aol.com),* NASA Educator Ambassador, Phoenix, Ariz.
Come experience inquiry-based hands-on activities that explore the astonishing structure of the universe. Take home a NASA CD-ROM with lesson plans, PowerPoints, and useful websites.

Bargain Bag Science for Elementary School Teachers: Cheap and Easy Science Ideas (Gen)
(Preschool–Elementary) *224, Convention Center*
Jennifer C. Williams *(jwilliams@newmanschool.org),* Isidore Newman School, New Orleans, La.
Bring inquiry-based experiments and activities to every classroom regardless of the budget. Create inexpensive, literature-based, "portable" hands-on scientific activities to quench students' curiosity.

School Energy Survey (Env)
(Elementary–High School) *229, Convention Center*
Doug Keaton, National Energy Education Development Project, Manassas, Va.
Use your school building as a living laboratory! Walk away with lessons and online resources that allow your students to do an audit and calculate energy costs and emissions.

Ramps and Pathways: An Inquiry-based Approach to Physical Science in Early Childhood (Phys)
(Preschool–Elementary) *230, Convention Center*
Betty Zan *(betty.zan@uni.edu),* University of Northern Iowa, Cedar Falls
Participants will engage in active experimentation with ramps and pathways and learn how to support young children's learning about force and motion and inquiry.

ACS Middle Level Session: Chemical Change: Breaking and Making Bonds (Chem)
(Middle Level) *R07, Convention Center*
Patricia M. Galvan *(p_galvan@acs.org)* and **Adam M. Boyd** *(a_boyd@acs.org),* American Chemical Society, Washington, D.C.
Explore the production of a gas, a precipitate, and changes in temperature as a result of chemical reactions.

ACS Session Six: Half-Life (Chem)
(High School) *R08, Convention Center*
Jerry A. Bell *(j_bell@acs.org),* American Chemical Society, Washington, D.C.
Half-life is familiar as a way of characterizing the decay of radioactive nuclei and using radioactive isotopes as "clocks" to date past events. The concept of half-life is broader than this and applicable to many changes that are easy to explore safely in the classroom. Bring your USB flash drive and take away the presentation and the activities to use in your classes.

National Earth Science Teachers Association (NESTA) Rock and Mineral Raffle (Earth)
(General) *R09, Convention Center*
Roberta Johnson *(rmjohnsn@nestanet.org),* National Earth Science Teachers Association, Boulder, Colo.
NESTA offers more than 50 specimens to choose from for a chance to win display-quality specimens of rocks, minerals, fossils, and other Earth science–related materials.

4:00–5:15 PM Exhibitor Workshops

Applications in Chemistry with the kena™ Digital Microscope (Gen)
(Grades 9–12) *203, Convention Center*
Sponsor: Ken-A-Vision Manufacturing Co.
Twanelle Walker Majors *(twanellemajors@yahoo.com),* Warren County High School, McMinnville, Tenn.
With few limitations, the kena microscope allows for capture of events in solutions and chemical reactions, demystifying abstract concepts that are often difficult for science students. Students of all levels have an increased chance of success in upper-level science courses when technologies allow the teacher to reach the students whose cognitive level does not yet meet the expectations of state standards.

Cool Tech Tools for Chemistry: Really Easy Data Collectors (Chem)
(Grades 7–11) *205, Convention Center*
Sponsor: Science Kit & Boreal Laboratories
Jamie Vander Wiede, Bridgewater Middle School, Winter Garden, Fla.
Join us for this fast-paced workshop that goes far beyond how to use the Really Easy Data (RED) units and focuses on how to integrate the RED technology into your classroom or laboratory. Engage in hands-on activities examining concepts such as antacid comparisons (using the pH probe), reduction potentials measurement (using the voltage sensor), and vapor pressure (using the pressure probe and temperature probe).

Sparking More Interest with Chemistry: A Part 2 Experience (Chem)
(Grades 9–12) *207, Convention Center*
Sponsor: Houghton Mifflin Harcourt
Jerry Sarquis, Professor Emeritus, Miami University, Oxford, Ohio
Mickey Sarquis *(mickey@terrificscience.org),* Terrific Science, Healdsburg, Calif.
Roll up your sleeves with *Modern Chemistry* authors Jerry and Mickey Sarquis and prepare to become engaged in chemistry activities, demos, challenges, and tips to help spark your students' interest and facilitate their understanding of chemistry. This Part 2 Experience provides a different set of topics from Part 1 (page 92) but continues the emphasis on using inexpensive, readily available materials.

***Living By Chemistry:* Create a Table (Chem)**
(Grades 9–12) *208, Convention Center*
Sponsor: Key Curriculum Press
Jeffrey Dowling *(jdowling@keypress.com),* Key Curriculum Press, Emeryville, Calif.
Teach rigorous chemistry with guided inquiry! Let's explore activities that introduce the periodic table and other core chemistry concepts through a historical context. Take home free sample lessons and materials from the *Living By Chemistry* curriculum.

Fun, Fabulous Foldables® (Gen)
(Grades K–8) *209, Convention Center*
Sponsor: McGraw-Hill School Education Group
Dinah Zike, Dinah-Might Adventures, LP, San Antonio, Tex.
Experience how these 3-D graphic organizers can transform your science lesson into an engaging, interactive learning experience. These interactive tools offer endless possibilities for collecting data, building understanding, and assessing student comprehension.

***Marine Science: The Dynamic Ocean:* A New High School STEM Offering (Earth)**
(Grades 9–12) *210, Convention Center*
Sponsor: Pearson
Meghan Marrero and **Glen Schuster,** U.S. Satellite Laboratory, Inc., Rye, N.Y.
Meet the authors and learn how STEM pedagogical strategies help students understand integrated science content in the context of the ocean. Not only does this new course blend life, Earth, and physical science, it also presents Earth's greatest resource—our ocean. Discover it in the context of tracking marine animals and socio-scientific issues.

Introduction to Wisconsin Fast Plants® (Bio)
(Grades K–12) *211, Convention Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Small, fast-growing Wisconsin Fast Plants (35- to 40-day generation cycle) are ideal classroom tools for exploring variation and life cycle. Learn how to plant and germinate seeds, and about plant growth/development, flower dissection, and hand pollination. These interdisciplinary science materials offer opportunities for student inquiry and learning. Samples included.

Teaching About the Rock Cycle and Earth Time (Earth)
(Grades 4–8) *216, Convention Center*
Sponsor: Lab-Aids, Inc.
Mark Koker, Lab-Aids, Inc., Ronkonkoma, N.Y.
Do your middle level students have trouble with complex concepts like the rock cycle and geologic time? Come experience motivating hands-on techniques and strategies for learning about these and related topics, like plate tectonics and continental drift. Support for literacy and technology will be addressed.

4:00–5:30 PM Exhibitor Workshop

Chemistry and the Atom: Fun with Atom Building Games! (Phys)
(Grades 6–12) *221, Convention Center*
Sponsor: CPO Science/School Specialty Science
Patsy Eldridge, CPO Science/School Specialty Science, Nashua, N.H.
Our understanding of matter is so abstract that students have a hard time making sense of these fascinating concepts. In this workshop, you will experience innovative games and activities that give students with different learning styles opportunities to explore and grasp atomic structure and the periodic table.

5:00–6:30 PM Social

LSTA Awards Social
(By Invitation Only) *R02/R03, Marriott*
Louisiana teachers of science, both formal and informal, are invited to attend the annual Louisiana Science Teachers Association award reception and meeting.


I ♥ bugs
Member
1703814
April Sterrett
Teacher
Tierra Linda Middle School
San Carlos CA
Elem
MULT


IVESTRONG
Member
1298138
Jeffry Earl Darrow
6th Grade Science Teacher
McKinley Institute of Technology

8:00–9:00 AM Presentations

SESSION 1

Square Pegs: Science for Those Other Kids (Gen)
(Middle Level–High School) *201, Convention Center*
Juliana Texley *(jtexley@att.net),* Palm Beach State College, Boca Raton, Fla.
"Alternative" education takes many forms in districts across the country. Unorthodox behaviors or learning styles make students "square pegs." Learn great science for them.

SESSION 2

Global Achievement (Gen)
(Middle Level–High School) *202, Convention Center*
Minoo Srivastava *(minoo.srivastava@bossierschools.org),* Louisiana New Tech @ Plain Dealing
How do we as educators structure curricula to meet the needs of 21st-century students? Find a new way of meeting the needs of your students and designing and delivering curricula. Explore how students can be enticed with Project Based Learning aimed at addressing real-world problems and questions that matter.

SESSION 3

What in the World Is a Bioplastic? (Chem)
(High School) *225, Convention Center*
Sherri Conn Rukes *(luvchem@gmail.com),* Libertyville High School, Libertyville, Ill.
Get a better understanding of what a bioplastic is and how it is made. Take home a CD with information.

SESSION 4

Science in Our Lives Photo Essay (Gen)
(Elementary–Middle Level) *226, Convention Center*
Todd F. Hoover *(thoove2@bloomu.edu),* Bloomsburg University of Pennsylvania, Bloomsburg
Experience how photo essays can demonstrate your students' science content knowledge. Great for diverse learning styles, photo essays can be used to assess knowledge prior to, during, or after classroom learning.

SESSION 5

A Peek into a STEM Lab (Gen)
(High School) *227, Convention Center*
Emily C. McLendon *(emily_mclendon@nops.k12.la.us),* Warren Easton Charter High School, New Orleans, La.
Funded through the U.S. Department of Education's Gulf Coast Recovery Grant, our STEM Academy with its STEM Lab is striving to improve STEM education for all students. Learn how students are being exposed to various STEM careers and are taking their learning to new heights through activities in science, technology, engineering, and math.

SESSION 6

Using Interactive Science Notebooks in the Middle School Classroom (Gen)
(Middle Level) *231, Convention Center*
Katherine L. Bryant *(kbryant@effingham.k12.ga.us),* South Effingham Middle School, Guyton, Ga.
Interactive science notebooks (ISN) are fun, motivating, effective, and researched-based tools that can increase student mastery of content. Implementation of ISNs will be modeled.

SESSION 7

Discover Discovery Boxes (Gen)
(Elementary–Middle Level/College) *232, Convention Center*
CANCELED
Sherri A. Cianca, Niagara University, Lewiston, N.Y.
Involve students in research and inquiry-based experimentation. Learn to create topic-specific discovery boxes to challenge students to discover and deepen their understanding of science.

SESSION 8

Lab Reports and the Scientific Method (Gen)
(Elementary–High School) *R07, Convention Center*
Helen A. Buttemer *(helenb@u.washington.edu),* University of Washington, Seattle
This presentation highlights a simple tool (RERUN) for helping students of all ages organize a logical lab report based on the scientific method.

8:00–9:00 AM Workshops

Hands-On/Minds-On Science: Using Interactive White Board and Hands-On Activities to Reach All Learners (Earth)
(General) *217, Convention Center*
Maribeth Lowe *(mlowe@greenecountyschools.com)* and **Leah Talbert** *(ltalbert@greenecountyschools.com),* William Monroe High School, Stanardsville, Va.
Find out about an exciting, interactive approach demonstrating how the use of high-tech and low-tech materials can give students the optimum learning experience.

Use Science Olympiad to "STEM"ulate Student Engagement in Science (Gen)
(Elementary–High School) *218, Convention Center*
Kelly Price *(price_kel@yahoo.com),* Forsyth County Schools, Cumming, Ga.
Jennifer Kopach *(jrkopach@comcast.net),* Science Olympiad, Oakbrook Terrace, Ill.
Want to get your students excited about STEM from day one of your class? Ditch Chapter 1 and get students excited about learning science with Science Olympiad.

Science Success: How Do I Spell Thee in an All-inclusive Learning Environment? (Earth)
(Supervision/Administration) *219, Convention Center*
Barry Fried *(bfried@schools.nyc.gov)* and **Honora Dash** *(hdash@schools.nyc.gov),* John Dewey High School, Brooklyn, N.Y.
Learn how to differentiate instruction and engage students in the learning process to effectively address the needs of all students through technology, inquiry-based projects, and investigations while increasing science literacy to create a community of science learners.

Swamp Rabbit Habitat: An Introduction to the Ecology of the Bottomland Hardwoods Ecosystem (Bio)
(Elementary) *222, Convention Center*
Amy G. Ouchley *(biouchley@yahoo.com),* Delta Regional Educators' Academy (DREAM), Monroe, La.
Meet Swamper, the swamp rabbit, and learn about his habitat—the bottomland hardwood swamp ecosystem. Find out how energy flows through this system and how Swamper survives in Mossy Slough, Louisiana. There are many challenges in the swamp: predators, floods, and loss of habitat. A literacy component and hands-on activity are included.

EarthKAM: Taking Pictures of Earth from Space (Earth)
(Middle Level) *224, Convention Center*
Leesa Hubbard *(leesa@sallyridescience.com),* Sally Ride Science, San Diego, Calif.
Julie Miller *(jmillerirc@olatheschools.com),* Olathe (Kans.) Public Schools USD 233
Your students can take pictures of Earth from space with NASA and EarthKAM (Earth Knowledge Acquired by Middle School Students)! Learn how to get your students involved, while participating in engaging hands-on activities.

Romancing the Stone (Earth)
(Middle Level–High School) *229, Convention Center*
Parker O. Pennington IV *(p.o.pennington@gmail.com),* Retired Educator, Ann Arbor, Mich.
Examine mineral packets to find patterns within the rock families, simplifying geology content to key concepts. Take-home activities, specimen samples, and handouts provided.

NSTA Press Session: Bringing Outdoor Science into Your Classroom (Gen)
(Elementary–Middle Level) *R01, Convention Center*
Steve Rich *(bflywriter@comcast.net),* Georgia Youth Science & Technology Center, Carrollton
Get your hands on materials that can be used in the classroom or school yard. Either way, you'll find a wealth of resources. Free seeds!

Sea Turtle CSI (Bio)
(Middle Level–High School/Informal) *R02, Convention Center*
Joan R. Turner *(jturner@disl.org),* Dauphin Island Sea Lab, Dauphin Island, Ala.
Sea turtle CSI is designed as an inexpensive, investigative, hands-on classroom activity to examine the life of a sea turtle through DNA modeling.

Dark Sky Rangers: Protecting Our Night Skies (Earth)
(General) *R03, Convention Center*
Robert T. Sparks *(rsparks@noao.edu),* National Optical Astronomy Observatory, Tucson, Ariz.
Learn why our dark night skies are important to wildlife, astronomy, and human health as well as how your students can help protect the night sky through the citizen science program Globe at Night.

In Pursuit of Science Discourse: Moving Students from Strategy to Self-Determination (Gen)
(General) *R04, Convention Center*
Quinton A. Freeman, Northbrook High School, Houston, Tex.
Scientific inquiry has its own unique discourse. For sustained success, all students must have access to and become proficient in the discourse of science.

Motivate and Engage Your Students with Arts Integration and Artful Thinking (Gen)
(Elementary–High School) *R05, Convention Center*
Jennifer G. Smith *(jgsmith1@aacps.org)* and **Pat Klos,** *(pklos@aacps.org)*, Bates Middle School, Annapolis, Md.
Motivate and engage students while increasing critical and creative thinking by implementing arts integration strategies and "Artful Thinking" routines in your science classroom.

Performance Task: Preparing for the Future (Gen)
(General) *R06, Convention Center*
Chanikki K. Brown-Allen, Charles Drew High School, Riverdale, Ga.
Bring the workforce into your classroom and show your students how science relates to all jobs. Participants will create a performance task and rubric as well as discuss assessing of exemplars. *Note:* Activities are available to the first 30 attendees.

Differentiated Instruction Through the 5 Es (Gen)
(Middle Level–High School) *R08, Convention Center*
Madge Nanney *(nanneym@duvalschools.org)* and **Erin Busch** *(busche@duvalschools.org),* Duval County Public Schools, Jacksonville, Fla.
Margaret Hayden *(haydenm@coe.ufl.edu),* University of Florida, Gainesville
Differentiate instruction in science? Now what? Get specific strategies for the Engage, Explore, Explain, Extend, and Elaborate stages of the 5E lesson format. Templates and resources samples will shared.

Nuts and Bolts on How Things Work (Phys)
(General) *R09, Convention Center*
Robert O. Jesberg *(r.jesbergjr@comcast.net),* Education Consultant, Chalfont, Pa.
How are students ever going to have a STEM career if they don't know how things work? Let's explore real and model simple machines, discover how each makes work easier, and investigate the science, technology, engineering, and math concepts that describe their operation.

8:00–9:15 AM Exhibitor Workshops

Preparing Your Students to Become Tomorrow's Innovators with STEM Education (Gen)
(Grades K–12) *210, Convention Center*
Sponsor: Pearson
Anne Rice, Pearson, Boston, Mass.
STEM education strives to encourage and interest students in STEM fields as well as develop a competitive workforce and increase science literacy. Learn how to integrate the four areas of STEM around a central question in your science classroom using project-based activities and help prepare your students for 21st-century careers.

Teaching About Hydrogen Fuel Cells (Env)
(Grades 7–12) *216, Convention Center*
Sponsor: Lab-Aids, Inc.
John Howarth, Lawrence Hall of Science, University of California, Berkeley
Explore SEPUP's new module, *Introduction to Alternative Energy: Hydrogen Fuel Cells*, which teaches chemistry standards such as conservation of energy, stoichiometry, and redox reactions around the issue of using hydrogen fuel cells for transportation. Take home a SEPUP activity on fuel cells appropriate for high school chemistry or environmental science.

FDA Food Science Workshop (Bio)
(Grades 6–12) *220, Convention Center*
Sponsor: FDA
Laurie A. Hayes *(lauriehayes@cart.org),* Center for Advanced Research and Technology, Clovis, Calif.
Come learn about FDA's free food safety curriculum, lesson plans, and materials you can use in your classroom. Participate in hands-on activities to take back to your students. Learn from a master teacher with extensive experience working with FDA's Center for Food Safety and Applied Nutrition.

8:00–9:30 AM Exhibitor Workshop

Bio-Rad—Light Up Your Classroom with Prize-winning GFP! (AP Biology Lab 6) (Bio)

(Grades 9–College) *214, Convention Center*

Sponsor: Bio-Rad Laboratories

Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.

What happens when you cross a jellyfish with *E. coli?* You create your own pGLO green-glowing bacteria! By the end of this workshop, you'll become a genetic engineer—modifying genes and transforming bacteria with the Green Fluorescent Protein (GFP). See purified GFP from transformed bacteria via a biomanufacturing process—chromatography. Take home a free lab-prep DVD!

8:30–11:00 AM Science Matters Community Event

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, and students about the exciting world of science.

Science Matters is NSTA's newest initiative designed to rekindle a national sense of urgency and action among schools and families about the importance of science education. During this FREE community event for elementary teachers, parents, school officials, and students, we'll engage in exciting hands-on activities and discover new ways to bring science to life for students and children.

Presenters include numerous Louisiana-based science organizations, including Sci-Port Science Center, Louisiana's Geography Education Alliance, the USGS National Wetlands Research Center, University of New Orleans, Pontchartrain Institute for Environmental Sciences, Red Stick Robotics, and many more. Also featured are many nationally recognized presenters and organizations, including Jason Lindsey, an award-winning science educator; Sharon Bowers of the National Institute of Aerospace; representatives from Educational Innovations and NOAA; as well as many others.

Visit *www.nsta.org/sciencematters* for more information.

9:00–11:00 AM Meeting

AMSE Board Meeting

(By Invitation Only) *Regent, Marriott*

Visit *www.amsek16.org* for more information.

9:00 AM–12 Noon Exhibits

Hall A, Convention Center

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

9:00 AM–3:00 PM Meeting

Council of State Science Supervisors Regional Meeting

(By Invitation Only) *Bonaparte, Marriott*

9:30–10:30 AM Presentations

SESSION 1

Formative Assessment for the 21st Century (Gen)

(Middle Level–High School) *201, Convention Center*

Gina Oldendorf *(chemteacher55@gmail.com),* Parkview Baptist School, Baton Rouge, La.

Participants will take away classroom-ready and tested ideas about rethinking the use of formative assessment. CDs and handouts!

SESSION 2

Climate Expeditions: Checking Out Your Team (Earth)

(Middle Level–High School) *218, Convention Center*

Linda M. Morris *(linda.m.morris@dartmouth.edu),* Dartmouth College, Hanover, N.H.

Murat Aydin, University of California, Irvine,

Partner with ice-drilling scientists or engineers to excite your students with knowledge and skills related to climate change content and careers. Join us for team-based activities.

SESSION 3

Just a Theory: Using the Evolution Discussion to Teach the Nature of Science (Bio)

(General) *219, Convention Center*

Ian C. Binns *(iancbinns1@gmail.com),* **Adrienne S. Lopez** *(alopez@lsu.edu),* and **Bryan C. Carstens** *(carstens@lsu.edu),* Louisiana State University, Baton Rouge

Barbara Forrest *(bforrest@selu.edu),* Southeastern Louisiana University, Hammond

Patsye Peebles *(aeppeebles@aol.com),* Retired Educator, Baton Rouge, La.

Learn nature of science activities that can help strengthen your unit on evolution. Receive a free CD containing lesson descriptions and materials.

SESSION 4

Raise Your Students' IQ: Come Learn How to Do That! (Gen)

(General) *224, Convention Center*

Fred W. Goerisch, Buhl Middle School, Buhl, Idaho

In this session, we will work through the learning process so that you can, in fact, teach your students how to learn and how to raise their IQ. You will learn strategies to increase real learning in your classroom and in your life.

SESSION 5

Hands-On Investigations and Inquiry for K–8 Students (Gen)

(Elementary–Middle Level) *226, Convention Center*

Donna L. Knoell *(dknoell@sbcglobal.net),* Educational Consultant, Shawnee Mission, Kans.

Develop higher level thinking and enhanced literacy skills in your K–8 students with hands-on investigative science supported by literacy strategies. Connecting science with reading, mathematics, and expository writing gives students the opportunity to process, apply, and organize their science learning, and to refine their ability to communicate it with others.

SESSION 6

Educating Students for the 21st-Century Workforce Using Inquiry-based Teaching Methods (Gen)

(High School) *227, Convention Center*

Jeannette Adkins *(jadkins@christchurchschool.org)* and **Dean Goodwin**, Christchurch School, Christchurch, Va.

Our school has designed an integrated science curriculum embedding skills needed for workers in the 21st century through authentic hands-on, experiential, inquiry-based learning. Discover how this innovative program develops a student's innate curiosity regardless of his or her weaknesses or strengths.

SESSION 7

Teaching Science in the Context of Substance Abuse with FREE Online Web Adventures (Gen)

(Middle Level) *231, Convention Center*

Yvonne Klisch *(yvonne.klisch@rice.edu),* **Leslie M. Miller** *(lmm@rice.edu), and* **Lynn Lauterbach** *(lynnlauterbach@gmail.com),* Rice University, Houston, Tex.

Web adventures provide virtual experiments and visualizations to teach about body systems, neuroscience, and the biological effects of substance abuse.

SESSION 8

Global Sustainability Science Connections: Engaging Lessons for the Primary Grades (Gen)

(General) *232, Convention Center*

Thomas Allison, Facing the Future, Summerfield, Fla.

Global sustainability is an engaging context for elementary science content and literacy skills. Experience hands-on lessons about food and environment, systems, and biodiversity. Free curriculum guide!

9:30–10:30 AM Workshops

Stellar Bar Codes (Earth)

(High School) *222, Convention Center*

Pamela B. Perry *(pperry@lewistonpublicschools.org),* Lewiston High School, Lewiston, Maine

Donna L. Young *(donna@aavso.org),* Chandra E/PO Office, Cambridge, Mass.

Doug Lombardi *(lombardi.doug@gmail.com),* Southern Nevada Regional Professional Development Program, North Las Vegas

Use spectra of different types of stars to investigate how the study of spectra provides scientists with important information about stellar temperatures and evolutionary history.

No Confusion Inclusion (Earth)

(Middle Level–High School) *229, Convention Center*

Jennifer Pollock *(jpollock77@yahoo.com; jpollock@k12tn.net),* Tullahoma High School, Tullahoma, Tenn.

Brenda Pollock *(brenda.pollock@lcsk12.org),* East Limestone High School, Athens, Ala.

Find out about activities developed jointly by a science teacher and a special education teacher for a full-inclusion classroom. Participants will complete activities tested in a high school Earth science classroom through collaborative teaching methods addressing accommodation for various disabilities. Handouts!

Let's Get Helical: Exploring DNA Structure/Function with Interactive Physical Models (Bio)
(High School–College) *230, Convention Center*
Tim Herman *(herman@msoe.edu)* and **Shannon Colton** *(colton@msoe.edu),* Milwaukee School of Engineering, Center for BioMolecular Modeling, Milwaukee, Wis.
Explore DNA structure and information storage with an interactive, magnetic DNA model and a paper bioinformatics exercise focusing on the beta subunit of hemoglobin.

Visible Vocabulary (Gen)
(General) *R01, Convention Center*
Anna M. Newman *(anewman@lfcisd.net),* Los Fresnos (Tex.) Consolidated Independent School District
What does the game "Jenga®" have to do with balancing chemical equations? What does Buddha have to do with biomolecules? Creative! Innovative! Fun!

Science Access for All! (Gen)
(General) *R02, Convention Center*
Pamela L. Hanshaw and **Deborah Magill,** Fitzgerald Elementary School, Woodbridge, Va.
Emphasis will be placed on teaching special needs students in grades K–5. Learn how to apply multiple strategies to present content and engage students with intellectual challenges in meaningful science learning.

Engage Students with the Mystery Powder Inquiry Lab (Chem)
(Elementary–High School) *R04, Convention Center*
Alicia Jackson Ngala *(ajacks15@houstonisd.org),* Welch Middle School, Houston, Tex.
Engage students with an inquiry-based hands-on investigation that involves critical-thinking skills. Leave with lessons to apply the scientific method to explore and solve the identity of unknown powders.

Green Your School! Integrating Science with Service Learning (Gen)
(Elementary–High School) *R05, Convention Center*
Joyce B. Tugel *(jtugel@mmsa.org),* Maine Mathematics and Science Alliance, Augusta
Learn how teachers and students can link science content with service learning to identify and research environmental science issues, explore solutions, and implement change.

Linking Home and School with P.A.S.S.© (Portable Affordable Simple Science) (Gen)
(General) *R06, Convention Center*
Renee G. O'Leary, Holy Angels School, Newark, Del.
Peggy Vavalla, DuPont, Wilmington, Del.
Discover simple, multisensory, hands-on early childhood/elementary explorations (preK–2)—in zippered plastic bags—with take-home and multidisciplinary follow-up. Walk away with sample lesson plans, bags, and follow-up.

Teaching About Corals: Using NOAA Resources (Bio)
(Elementary–High School) *R07, Convention Center*
Lindsay Knippenberg *(lindsay.knippenberg@noaa.gov),* Einstein Fellow, NOAA, Washington, D.C.
Grab your students' attention by incorporating coral reefs into your existing curriculum. Several NOAA resources will be highlighted, including demos, labs, activities, and multimedia.

Working with Partners to Increase Comprehension in Science (Gen)
(Middle Level–High School) *R08, Convention Center*
Tami J. Ellis, Beth Clary *(clarye@mail.okaloosa.k12.fl.us),* **Susan Mikel,** and **Ann Flanagan** *(flanagana@mail.okaloosa.k12.fl.us),* Pryor Middle School, Fort Walton Beach, Fla.
Increase students' learning through interaction with peers! In this hands-on workshop, experience partner and group activities that can enhance understanding of science content.

My Kids Don't Know the Vocabulary—Can Robert Marzano's Research-based Six-Step Strategy Do the Trick? (Gen)
(General) *R09, Convention Center*
Robert O. Jesberg *(r.jesbergjr@comcast.net),* Education Consultant, Chalfont, Pa.
Let's complete activities that will help our students internalize the vocabulary. Apply Robert Marzano's research-based strategies to the toughest vocabulary and watch the students excel.

9:30–11:30 AM Workshop

SCST Session: Marooned in the Galápagos: A Scenario-based Approach to Teaching Evolution (Bio)
(General) *R03, Convention Center*
Donald P. French *(dfrench@okstate.edu),* Oklahoma State University, Stillwater
Connie Russell *(crussell@angelo.edu),* Angelo State University, San Angelo, Tex.
Biologists don't just spend their time looking for evidence for evolution, why teach as if they do? Come see our model for teaching evolution.

10:00–10:30 AM Presentation

SESSION 1
Integrating Informal Science Experiences into Classroom Curricula (Env)
(General) *217, Convention Center*
Mary L. Keppler *(mkeppler@fairchildgarden.org),* Fairchild Tropical Botanic Garden, Coral Gables, Fla.
Learn how to provide greater science education accessibility to students from diverse backgrounds by integrating classroom teaching with experiences at informal science education centers.

10:00–11:00 AM Exhibitor Workshop

Creating a Biotechnology Skills Course with Bio-Rad (Bio)
(Grades 9–College) *214, Convention Center*
Sponsor: Bio-Rad Laboratories
Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.
Empower your students to become tomorrow's leaders by giving them the skills they need to become independent thinkers. Learn how to set the foundation of your program with equipment, supplies, and Bio-Rad's new lab textbook, *Biotechnology: A Laboratory Skills Course* by J. Kirk Brown. Hear words of wisdom from model biotech programs and learn how to prepare students with career and college-ready skills.

11:00 AM–12 Noon Presentations

SESSION 1
Writing in Science: The Effective Use of Argument (Gen)
(High School) *201, Convention Center*
Janet J. Hogan *(janet.hogan@mansfieldschools.com),* **Bill Sheehan** *(william.sheehan@mansfieldschools.com),* **Debbie Fournier, Anne Carroll** *(anne.carroll@mansfieldschools.com),* and **Jim Carver-Brown** *(james.carver-brown@mansfieldschools.com),* Mansfield High School, Mansfield, Mass.
Encourage independent thinking through writing. Inspire students to explore science topics through individualized writing assignments that require research and argumentation.

SESSION 2
Experimental Design CAN Happen (Gen)
(Middle Level) *225, Convention Center*
Lynn Lauterbach *(lynnlauterbach@gmail.com),* Rice University, Houston, Tex.
Using a graphic design organizational tool and a free online program, you can guide students of any level to understand and complete the experimental design process. Handouts. Free online site.

SESSION 3
Career Currents: Teaching About Careers in the Energy Industry (Gen)
(Middle Level–College) *227, Convention Center*
Doug Keaton, National Energy Education Development Project, Manassas, Va.
Help your students develop the right skills for up and coming jobs. Learn about careers in energy and the pathways to reach those careers.

SESSION 4
Connecting Students with Science Through Mentored Experiences in Nature (Gen)
(High School–College/Informal) *228, Convention Center*
Jessica Soule *(jsoule@ncseonline.org)* and **Susan Carlson** *(susan@ncseonline.org),* National Council for Science and the Environment, Washington, D.C.
Discuss how integrating mentoring, classroom activities, local environments, and technology (webinars, online community, and digital toolkits) enhance students' and teachers' innovation.

SESSION 5

Using VoiceThread in the Science Classroom (Gen)
(General) *230, Convention Center*
Michael R. Gilchrist, Jennifer A. Brown, **Erin Reilly,** and **Russ McKinney** *(rmckinn1@aum.edu),* Auburn University, Montgomery, Ala.
Learn how you can enhance your science lessons with VoiceThread, a collaborative multimedia slide show that holds images, documents, and videos, and allows people to navigate slides and leave comments.

SESSION 6

Global Science Lab (Gen)
(High School) *231, Convention Center*
Roger Cowan *(roger.cowan@grasslands.ab.ca)* and **Cameron Bernhard** *(cameron.bernhard@grasslands.ab.ca),* Brooks Composite High School, Brooks, Alta., Canada
Science teachers in Grasslands Public Schools are harnessing the power of interactive technologies and collaborative professional development to engage students, enhance learning, and bring science to life.

SESSION 7

Making the Most of NSDL's Science Literacy Maps (Gen)
(Elementary–High School) *232, Convention Center*
Ted Willard *(twillard@aaas.org),* AAAS Project 2061, Washington, D.C.
Learn how to interpret the Science Literacy Maps from the National Science Digital Library (NSDL) and how to get the most for you and your students by using them.

11:00 AM–12 Noon Workshops

Exciting Engineering Projects (Gen)
(Middle Level) *217, Convention Center*
Alison D. Fine *(afine@rashi.org),* The Rashi School, Dedham, Mass. CANCELED
This hands-on workshop will focus on the design process and how to incorporate engineering into all areas of science. We will explore several inexpensive projects, involving balloon-powered cars, bridges, animal habitats, and more. Sure to be fun and interactive!

Sneaking in STEM (Gen)
(General) *218, Convention Center*
Kathy Brandon, Laurie Ilgenfritz, Christy Bucker, Robert Sayers, and **Wendy Jordan,** STARBASE Louisiana, Barksdale Air Force Base
Discover creative and inspiring ways to seamlessly weave STEM emphasis into your curriculum. Enjoy fun and practical ideas to point students toward STEM career choices.

Bring Literacy and Science Together: "B.L.A.S.T."© for Success at School and Home (Gen)
(General) *219, Convention Center*
Renee G. O'Leary, Holy Angels School, Newark, Del.
Peggy Vavalla, DuPont, Wilmington, Del.
Discover simple, multisensory, hands-on elementary (grades 2–5) explorations using fairy tales as catalysts with take-home and language arts follow-up. Receive sample plans and materials.

Differentiating Strategies in Science for Early Childhood Settings (Gen)
(Elementary) *222, Convention Center*
John W. Payne *(payne_jw@mercer.edu),* Mercer University, Lithia Springs, Ga.
Brent Daigle *(daigle_ba@mercer.edu),* Mercer University, McDonough, Ga.
Science education and special education preservice teachers have collaborated to design activities around national and state science standards. This workshop is designed to help elementary teachers who wish to differentiate their science instruction. Handouts.

Projects with a Purpose (Bio)
(Middle Level–High School) *224, Convention Center*
Sarah Wages *(sarah.wages@newtechruston.org),* New Tech @ Ruston, La.
Experience some of the scaffolding activities in the "Genetic Detectives" project, including a unique modeling of DNA, RNA, transcription, and translation. Learn how this genetic unit highlights the use of 21st-century skills to master content.

What Is Your Cosmic Connection to the Elements? (Earth)

(Middle Level–High School) *229, Convention Center*

A. Marie Pool *(marie.pool@clintonokschools.org),* Clinton High School, Clinton, Okla.

We'll trace the chemical elements all around us to their origins in cosmic events—the Big Bang, stars, stellar explosions, and cosmic rays. Free NASA materials.

Bringing the Microscopic World to Your iPad/iPod (Gen)

(General) *R04, Convention Center*

Adrienne S. Lopez *(alopez@lsu.edu),* Louisiana State University, Baton Rouge

Experience true science inquiry with the AirMicro! We will go through activities to showcase how to incorporate this new mobile, handheld microscope into any classroom.

Building a Better Student Scientist (Gen)

(Elementary–Middle Level) *R05, Convention Center*

Wendy DeMers *(2ydnew2@gmail.com),* Hynes Charter School, New Orleans, La.

Discover strategies that engage the student scientist; help build a foundation of inquiry skills, collaboration, and problem solving; and promote achievement of academic goals.

Point, Game, Set, Match: Science Wins with Tennis Ball Containers (Gen)

(General) *R06, Convention Center*

David F. Mastie, Retired Educator, Chelsea, Mich.

Used tennis ball containers—free, *green*, transparent, unbreakable, and infinitely adaptable—offer hands-on activities that make density, porosity, permeability, capillarity, core-sampling, and other elusive ideas visible.

Science Facilities 102: The Architects Have Started Without Me—What Do I Do Now? (Gen)

(General) *R07, Convention Center*

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

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

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

James T. Biehle *(biehlej@sbcglobal.net),* Inside/Out Architecture, Inc., Kirkwood, Mo.

Presider: LaMoine L. Motz

Is your district planning/designing new science facilities? Learn about budgeting, working with the architect, space requirements, technology, flexibility, safety, new types of spaces, and special adjacencies. In an advanced course (an extension of Science Facilities 101 session, page 95), the NSTA author team for *NSTA Guide to Planning School Science Facilities (2nd Ed.)* will present more detailed information and examples of functional, flexible science facilities for inquiry/project-based science. Resource packet available.

The Time for Inquiry Is Now! (Gen)

(Middle Level–High School) *R08, Convention Center*

Gregory B. Dodd *(gbdodd@gmail.com),* Kanawha County Schools, Charleston, W.Va.

Join me for a hands-on inquiry activity using probes to discover the properties of ingredients in some common beverages.

Fermi Problems with the Fermi Space Telescopes (Phys)

(Middle Level–High School) *R09, Convention Center*

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

Learn how to teach Fermi problems—order of magnitude problems that help students estimate almost anything from the number of licks to get to the center of a Tootsie Pop to the number of atoms in the universe—with simple mathematical techniques.

11:00 AM–12 Noon Exhibitor Workshop

Bio-Rad—Protein Expression and Purification Series **(Bio)**

(Grades 11–College) *214, Convention Center*

Sponsor: Bio-Rad Laboratories

Sherri Andrews *(biotechnology–explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.

From biomanufacturing industrial enzymes to cancer therapy, protein purification is essential! Make teaching the core process of protein expression and purification easy. Experience this new hands-on affinity purification series that provides an adaptable set of techniques and content to match the goals of the beginning protein educator up to an advanced college level course.

11:00 AM–1:00 PM Workshop

Marine Education Share-a-Thon **(Bio)**

(Elementary–High School) *R02, Convention Center*

Chris Verlinde, Southern Association of Marine Educators, Milton, Fla.

The Southern Association of Marine Educators invites one and all to our annual share-a-thon. This is a great opportunity to pick up marine education resources and find out what educational programs are available from chapter members in the Gulf region.

1:00–4:00 PM Workshop

MY NASA DATA: Using an Online Earth Science Visualization Tool for the Modern Classroom **(Earth)**

(Elementary–High School) *La Galerie 2, Marriott*

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

MY NASA DATA is an online data visualization tool that has endless uses in the science classroom. During this three-hour workshop, I'll provide content background information on the subjects of the atmosphere, radiation budget, clouds, as well as other Earth science topics that are covered in the visualization tool. I'll provide strategies for the integration of inquiry and problem-based learning exercises/activities. Related science content will be presented, followed by practice of online lessons featuring current and relevant science data/topics. Participants will also explore how data visualization can be used to enhance their curricula and how students can use real NASA data for inquiry and problem-based learning.


Channon Jackson

Exhibitors

Some exhibitors have classified their products by grade level and subject area. Subject areas are abbreviated here as follows:

Biology/Life Science	B
Chemistry/Physical Science	C
Earth/Space Science	EA
Environmental Science	EN
Integrated/General Science	G
Physics/Physical Science	PH
Professional Development	PD
Technology Education	T

A foldout floor plan of the Exhibit Hall is available at Program Pickup.

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A.D.A.M Education is the leading provider of innovative digital content and interactive curriculum resources used in classrooms internationally for teaching and learning about the human body. With teams of educators, industry professionals, and subject matter experts, we've developed products providing in-depth, compelling information to increase retention for difficult subject matters.

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American Chemical Society **#525**
1155 16th St. NW C, G
Washington, DC 20036 K–12, College
Phone: 202-872-6269
E-mail: *p_isikoff@acs.org*
Website: *www.acs.org*

The American Chemical Society (ACS) is the world's largest scientific society. ACS will exhibit textbooks, reference materials, videos, and other materials to supplement the K–12 and college curriculum. ACS will also provide information on programs for students and teachers.

American College of Emergency Physicians **#941**
PD
1125 Executive Circle 1–8
Irving, TX 75060
Phone: 800-798-1822
E-mail: *dfly@acep.org*
Website: *www.acep.org*

ACEP is a national medical specialty society representing emergency medicine with more than 27,000 members. ACEP is committed to advancing and supporting EMS and EMS Medical Directors through continuing education, research, public education, public policy, and advocacy. ACEP also plays a national leadership role in disaster preparedness and planning for EMS, hospitals, and the public.

American Lab Design **#737**
PO Box 2351 B, C, EA, PH
Daytona Beach, FL 32115
Phone: 800-494-3237
E-mail: *mikelee.inc@gmail.com*
Website: *www.americanlabdesign.com*

American Meteorological Society **#931**
1120 G St. NW, Suite 800 EA, EN, PH, PD
Washington, DC 20005 K–12, College
Phone: 202-737-1043
E-mail: *amsedu@ametsoc.org*
Website: *www.ametsco.org/amsedu*

The AMS Education Program offers content-rich, professional development courses, and training workshops for teachers in the geosciences. Along with workshops in meteorology (Project Atmosphere) and oceanography (Maury Project), the AMS guides Local Implementation Teams throughout the U.S. to offer DataStreme Atmosphere, DataStreme Ocean, and DataStreme Earth's Climate System (ECS).

American Nuclear Society **#739**
555 N. Kensington Ave. G
La Grange Park, IL 60526 4–12
Phone: 708-352-6611
E-mail: *tbishop@ans.org*
Website: *www.ans.org*

The American Nuclear Society exhibit offers teachers free, classroom-ready resources for teaching about nuclear science and technology. Educators may preview teacher handbooks offered through ANS teacher workshops and receive sample copies of the ANS teacher newsletter ReActions.

American Society for Engineering Education–eGFI (Engineering, Go For It!) **#432**
All
1818 N St. NW All
Washington, DC 20036
Phone: 202-331-3502
E-mail: *d.cummings@asee.org*
Website: *www.egfi-k12.org*

Introduce your class to engineering with eGFI (Engineering, Go For It!), the K–12 outreach program from the American Society for Engineering Education (ASEE), which includes free STEM lessons, class activities, an award-winning magazine and website, fun cards for the classroom, a brand-new picture book, and affordable teacher kits.

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Website: *www.carolina.com*

Carolina Biological Supply Company is a worldwide leader in providing top-quality, innovative science and math materials for educators. Carolina serves the K–12 and college markets with everything needed to equip a science laboratory or classroom. A complete catalog, Carolina™ Science is available free to educators and health professionals.

Carolina Curriculum **#825**
2700 York Rd. B, C, EA, G, PH, PD
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Website: *www.carolinacurriculum.com*

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Phone: 828-687-0807
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CNL World is a nonprofit science education outreach and professional development resource group for environmental and Earth sciences that provides materials, spatial data, information, geospatial technology, and application training. WETMAAP, a CNL World program, provides basic training in ecological concepts, technological skills and interpretation methods for understanding and assessing wetland and upland habitat change for grades 6-14 formal and informal educators.

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Discovery Education presents several of its key partner programs, such as Explore the Blue, a resource that emphasizes the importance of outdoor recreational activities and Science of Everyday Life, a program for K–12 that encourages students to examine the science that surrounds them every day.

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NSTA National Science Teachers Association

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Phone: 202-463-2475
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Manassas, VA 20110
Phone: 800-875-5029
E-mail: *info@need.org*
Website: *www.riverworksdiscovery.org*

The NEED Project is a national nonprofit organization providing free energy education resources to educators. RiverWorks Discovery is a national education outreach effort teaching children about the commerce, culture, and conservation of America's rivers. Visit the booth to find out how to incorporate these lessons into your classroom.

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Website: *www.smartschoolsystems.com*

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The SME/GEM Mineral Coalition booth is sponsored by the SME Foundation. The booth is staffed with local volunteers who provide teachers with rock and mineral samples, literature, and CDs as well as answer any questions the teachers may have.

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Website: *www.exploravision.org*

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Triangle Coalition for Science and Technology Education #549 PD
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Arlington, VA 22201
Phone: 703-516-5960
E-mail: *culbertsonk@triangle-coalition.org*
Website: *www.trianglecoalition.org*

Representing the Albert Einstein Distinguished Educator Fellowship Program, Triangle will provide information on the program, the work of the Fellows, and the process of becoming a Fellow.

The University of Southern Mississippi, Gulf Coast Research Lab Marine Education Center #451 B, EA, EN
703 East Beach Dr. 4–12, College
Ocean Springs, MS 39564
Phone: 228-818-8890
E-mail: *marine.education@usm.edu*
Website: *www.usm.edu/gcrl/mec*

The Marine Education Center (MEC) is the education and outreach arm of the University of Southern Mississippi's Gulf Coast Research Laboratory. The MEC endeavors to enlighten the citizenry to produce a cadre of well-informed and knowledgeable stewards of our coastal ecosystems.

Exhibitors

Vandalia Science Education **#838**
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Huntington, WV 25726-2705 7–12, College
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E-mail: *info@vandaliascied.com*
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American Nuclear Society (Booth #739)

Friday, Nov. 11	2:00–3:15 PM	203, Convention Center	Detecting Radiation in Our Radioactive World (p. 101)

Bio-Rad Laboratories (Booth #635)

Friday, Nov. 11	8:00–9:00 AM	214, Convention Center	Bio-Rad—Genes in a Bottle™ Kit (p. 78)
Friday, Nov. 11	9:30–11:30 AM	214, Convention Center	Bio-Rad—Forensic DNA Fingerprinting Kit (AP Biology Lab 6) (p. 85)
Friday, Nov. 11	1:00–2:30 PM	214, Convention Center	Bio-Rad—Enzymes and Biofuels: Go from Grass to Gas! (AP Biology Lab 2) (p. 97)
Friday, Nov. 11	3:00–5:30 PM	214, Convention Center	Bio-Rad—GMO Investigator Kit (p. 104)
Saturday, Nov. 12	8:00–9:30 AM	214, Convention Center	Bio-Rad—Light Up Your Classroom with Prize-winning GFP! (AP Biology Lab 6) (p. 114)
Saturday, Nov. 12	10:00–11:00 AM	214, Convention Center	Creating a Biotechnology Skills Course with Bio-Rad (p. 117)
Saturday, Nov. 12	11:00 AM–12 Noon	214, Convention Center	Bio-Rad—Protein Expression and Purification Series (p. 120)

Carolina Biological Supply Co. (Booth #725 and #825)

Thursday, Nov. 10	8:00–9:15 AM	212, Convention Center	Dive into STEM with GEMS® Ocean Sciences Sequence (p. 52)
Thursday, Nov. 10	10:00–11:15 AM	211, Convention Center	Autopsy: Forensic Dissection Featuring Carolina's Perfect Solution® Pigs (p. 54)
Thursday, Nov. 10	10:00–11:15 AM	212, Convention Center	New Tools for STEM Education from Carolina™ Curriculum (p. 54)
Thursday, Nov. 10	12:30–1:45 PM	211, Convention Center	Amplify Your Genetics Teaching Skills with Carolina's Inquiries in Science® Biology Kits (p. 62)
Thursday, Nov. 10	12:30–1:45 PM	212, Convention Center	Implementing STEM in Your Classroom with Carolina™ Curriculum and the Smithsonian Institution (p. 62)
Thursday, Nov. 10	2:15–3:30 PM	211, Convention Center	Hands-On Science with Classroom Critters (p. 68)
Thursday, Nov. 10	4:00–5:15 PM	211, Convention Center	Introduction to Electrophoresis (p. 73)
Friday, Nov. 11	8:00–9:15 AM	211, Convention Center	Introducing Inquiry into the Chemistry Lab (p. 79)
Friday, Nov. 11	10:00–11:15 AM	211, Convention Center	Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (p. 87)
Friday, Nov. 11	12 Noon–1:15 PM	211, Convention Center	Strawberry DNA and Molecular Models (p. 92)
Friday, Nov. 11	2:00–3:15 PM	211, Convention Center	Drive Student Inquiry with Carolina's Advanced Environmental Science Labs (p. 102)
Friday, Nov. 11	4:00–5:15 PM	211, Convention Center	Introduction to Wisconsin Fast Plants® (p. 108)

CPO Science/School Specialty Science (Booth #629)

Thursday, Nov. 10	8:00–9:30 AM	221, Convention Center	Chemistry and the Atom: Fun with Atom Building Games! (p. 53)
Thursday, Nov. 10	10:00–11:30 AM	221, Convention Center	Genetics: Crazy Traits and Adaptation Survivor (p. 55)
Thursday, Nov. 10	12 Noon–1:30 PM	221, Convention Center	Sound, Waves, and Music (p. 56)
Thursday, Nov. 10	2:00–3:30 PM	221, Convention Center	Light and Optics: A Series of EnLIGHTening Experiments! (p. 66)
Thursday, Nov. 10	4:00–5:30 PM	221, Convention Center	Genetics: Crazy Traits and Adaptation Survivor (p. 73)
Friday, Nov. 11	8:00–9:30 AM	221, Convention Center	Genetics: Crazy Traits and Adaptation Survivor (p. 80)
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Friday, Nov. 11	12 Noon–1:30 PM	221, Convention Center	Light and Optics: A Series of EnLIGHTening Experiments! (p. 93)
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Delta Education/School Specialty Science (Booth #624)

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Thursday, Nov. 10	10:00–11:15 AM	220, Convention Center	Delta Science Modules (DSM)…Never Heard of It? Want to Know More? (p. 54)
Thursday, Nov. 10	1:00–2:30 PM	220, Convention Center	What's Going On in There? Inquiry Science for Supervisors, Trainers, and Teachers (p. 63)
Thursday, Nov. 10	3:00–4:30 PM	220, Convention Center	Science Gnus: Scientists Famous and Forgotten…and Their Process Skills (p. 68)
Friday, Nov. 11	8:00–9:15 AM	220, Convention Center	Inquiring Minds Provide Spark for Science Lessons (p. 79)
Friday, Nov. 11	10:00–11:15 AM	220, Convention Center	Integrating Science and Literacy: Grades 1–6 (p. 87)
Friday, Nov. 11	1:00–2:15 PM	220, Convention Center	Are You a Problem (Solving) Teacher? Want to Become One? (p. 97)

Delta Education/School Specialty Science–FOSS (Booth #624)

Thursday, Nov. 10	8:00–10:30 AM	215, Convention Center	Using Science Notebooks with FOSS (p. 53)
Thursday, Nov. 10	11:30 AM–1:00 PM	215, Convention Center	FOSS Program Evolution and the Next Generation Science Standards (p. 55)
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Friday, Nov. 11	8:00–10:30 AM	215, Convention Center	Using Student Science Notebooks to Assess Learning (Experienced Users) (p. 80)
Friday, Nov. 11	11:30 AM–1:30 PM	215, Convention Center	FOSS Planetary Science for Middle School (p. 91)
Friday, Nov. 11	2:00–4:00 PM	215, Convention Center	Developing Language Using FOSS (p. 104)

Delta Education/School Specialty Science–Seeds (Booth #624)

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Discovery Education (Booth #939)

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Friday, Nov. 11	2:00–3:15 PM	204, Convention Center	Science of Everyday Life (p. 101)

eCYBERMISSION (Booth #435)

Thursday, Nov. 10	2:15–3:30 PM	204, Convention Center	eCYBERMISSION: Free STEM Competition for Middle School Students Offers Exciting Rewards (p. 67)

Educational Innovations, Inc. (Booth #532)

Friday, Nov. 11	10:00–11:15 AM	208, Convention Center	Nonstandard Standards (p. 86)

Edvotek (Booth #529)

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Fisher Science Education (Booth #428)

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Flinn Scientific, Inc. (Booth #538)

Thursday, Nov. 10	10:00–11:15 AM	206, Convention Center	Dynamic Demonstrations from Flinn Scientific (p. 54)
Friday, Nov. 11	10:00–11:15 AM	206, Convention Center	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 86)

Frey Scientific/Ohaus Corp. (Booth #625 and #833)

Thursday, Nov. 10	2:15–3:30 PM	208, Convention Center	Using the OHAUS Harvard Junior as a STEM-focused Skill Platform (p. 67)
Friday, Nov. 11	2:00–3:15 PM	208, Convention Center	Using the OHAUS Triple Beam Balance™ as a STEM-focused Skill Platform (p. 102)

Frey Scientific/School Specialty Science (Booth #625)

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Thursday, Nov. 10	2:15–3:30 PM	207, Convention Center	Ecology Adventures: Motivating Students Through Project Based Learning (p. 67)
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Ken-A-Vision Manufacturing Co. (Booth #732)

Friday, Nov. 11	4:00–5:15 PM	203, Convention Center	Applications in Chemistry with the kena™ Digital Microscope (p. 107)

Kendall Hunt Publishing Co. (Booth #424)

Friday, Nov. 11	8:00–9:15 AM	208, Convention Center	Taking a Human Approach to Biology Education (p. 79)

Key Curriculum Press (Booth #445)

Thursday, Nov. 10	12:30–1:45 PM	208, Convention Center	*Living By Chemistry:* What Shape Is That Smell? (p. 61)
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Mississippi State University (Booth #839)

Thursday, Nov. 10	12:30–1:45 PM	203, Convention Center	Master of Science Degree in Geosciences Available Online Through the Teachers in Geosciences Program (p. 61)

PASCO Scientific (Booth #733)

Friday, Nov. 11	8:00–9:00 AM	212, Convention Center	Biology: Cell Respiration in Germinating Peas (p. 78)
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Pearson (Booth #724)

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Science Kit & Boreal Laboratories (Booth #526)

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Thursday, Nov. 10	2:15–3:30 PM	205, Convention Center	Chemistry In-the-Bag Hands-On Inquiry Workshop (p. 67)
Thursday, Nov. 10	4:00–5:15 PM	205, Convention Center	Cool Tech Tools for Middle School Science: Really Easy Data Collectors (p. 72)
Friday, Nov. 11	8:00–9:15 AM	205, Convention Center	Cool Tech Tools for Life Science: Really Easy Data Collectors (p. 79)
Friday, Nov. 11	10:00–11:15 AM	205, Convention Center	Cool Tech Tools for Physical Science: Really Easy Data Collectors (p. 86)
Friday, Nov. 11	12 Noon–1:15 PM	205, Convention Center	Forensic Science: Understanding the Math and Science of Blood Spatter (p. 91)
Friday, Nov. 11	2:00–3:15 PM	205, Convention Center	Forensic Science: Understanding the Math and Science of Blood Using Blood Spatter (p. 101)
Friday, Nov. 11	4:00–5:15 PM	205, Convention Center	Cool Tech Tools for Chemistry: Really Easy Data Collectors (p. 107)

Simulation Curriculum Corp. (Booth #749)

Thursday, Nov. 10	8:00–9:15 AM	204, Convention Center	The Layered Earth! (p. 52)
Thursday, Nov. 10	10:00–11:15 AM	204, Convention Center	Starry Night Education! (p. 54)
Friday, Nov. 11	8:00–9:15 AM	204, Convention Center	The Layered Earth! (p. 78)

Swift Optical Instruments, Inc. (Booth #533)

Thursday, Nov. 10	2:15–3:30 PM	203, Convention Center	New Ways to Prepare Your Students Using 21st-Century STEM Initiatives—GO DIGITAL! (p. 67)

Vernier Software & Technology (Booth #632)

Friday, Nov. 11	8:00–9:30 AM	213, Convention Center	K–8 Science with Vernier (p. 80)
Friday, Nov. 11	10:00–11:30 AM	213, Convention Center	Exploring Science with Vernier (p. 87)
Friday, Nov. 11	12 Noon–1:30 PM	213, Convention Center	Exploring Science with Vernier (p. 93)
Friday, Nov. 11	2:00–3:30 PM	213, Convention Center	Exploring Science with Vernier (p. 103)

Wavefunction, Inc. (Booth #433)

Friday, Nov. 11	10:00–11:15 AM	203, Convention Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 86)
Friday, Nov. 11	12 Noon–1:15 PM	203, Convention Center	Molecular Modeling in Middle and High School Classrooms: Engage Your Students! (p. 91)


ONE
TOUCH
INSTANT
INNOVATION
CELESTRON
NSTA

G = General
P = Preschool
C = College
M = Middle School
H = High School
R = Research
S = Supervision/Administration
I = Informal Education
T = Teacher Preparation
E = Elementary

Biology/Life Science

Thursday

8:00–9:00 AM	M–H	R04, Conv. Center	Hassle-free Microbiology (p. 51)
8:00–9:15 AM	7–C	203, Conv. Center	Rapid Single Antibody–based ELISA (p. 52)
10:00–11:15 AM	7–C	203, Conv. Center	Fingerprint Your Own DNA with Affordable Classroom PCR That Works (p. 54)
10:00–11:15 AM	8–12	211, Conv. Center	Autopsy: Forensic Dissection Featuring Carolina's Perfect Solution® Pigs (p. 54)
12:30–1:30 PM	H–C	229, Conv. Center	A Tasty Lesson: Using Taste and Smell to Teach Cell Basics (p. 60)
12:30–1:30 PM	M	230, Conv. Center	Food Chains: Using Field Surveys That Give Real Numbers (p. 60)
12:30–1:30 PM	H	R04, Conv. Center	Drop the Lecture and Let the Students Pick Up the Learning in AP Biology (p. 60)
12:30–1:45 PM	9–12	211, Conv. Center	Amplify Your Genetics Teaching Skills with Carolina's Inquiries in Science® Biology Kits (p. 62)
2:00–3:00 PM	G	219, Conv. Center	Case Study Cavalcade (p. 65)
2:00–3:00 PM	H–C	230, Conv. Center	Lost in Translation: Exploring Protein Synthesis with Interactive Physical Models (p. 65)
2:00–3:00 PM	M–H	R04, Conv. Center	Teaching Evolution to All Students: Using Inquiry to Engage Even Resistant Students (p. 65)
2:15–3:30 PM	9–C	203, Conv. Center	New Ways to Prepare Your Students Using 21st-Century STEM Initiatives—GO DIGITAL! (p. 67)
2:15–3:30 PM	9–12	210, Conv. Center	Teaching About Climate Change in a Climate of Controversy: Presenting Science with Rigor and Relevance (p. 68)
2:15–3:30 PM	K–12	211, Conv. Center	Hands-On Science with Classroom Critters (p. 68)
3:30–4:30 PM	H–C	229, Conv. Center	Dive In with Physical Models: Impact of Water on Protein Structure (p. 71)
3:30–4:30 PM	E/I	R04, Conv. Center	Demo of Carnivorous Plants in Action—Snap! (p. 71)
4:00–5:15 PM	9–12	207, Conv. Center	Engaging Students and Enhancing Learning Outcomes with Project-based Videos (p. 72)
4:00–5:15 PM	9–12	211, Conv. Center	Introduction to Electrophoresis (p. 73)

Friday

8:00–9:00 AM	M–C	201, Conv. Center	The Missing Link: Inquiry Helps Religious Students Study Evolution! (p. 75)
8:00–9:00 AM	9–12	212, Conv. Center	Biology: Cell Respiration in Germinating Peas (p. 78)
8:00–9:00 AM	6–C	214, Conv. Center	Bio-Rad—Genes in a Bottle™ Kit (p. 78)
8:00–9:00 AM	G	227, Conv. Center	CSI Web Adventures (p. 75)
8:00–9:00 AM	G	R05, Conv. Center	NABT Session: Stand Up for REAL Science: Unite to Fight Attempts to Legislate Nonscience in the Classroom (p. 76)
8:00–9:15 AM	7–C	203, Conv. Center	DNA and Enzymology-based Experiments for Classroom Forensic Science (p. 78)
8:00–9:15 AM	6–10	205, Conv. Center	Cool Tech Tools for Life Science: Really Easy Data Collectors (p. 79)
8:00–9:15 AM	9–12	208, Conv. Center	Taking a Human Approach to Biology Education (p. 79)
8:30–9:00 AM	E–M	219, Conv. Center	Biology Bob: The Wonders of Life (p. 75)
9:30–10:30 AM	M–C	219, Conv. Center	Texas Teacher Rocks the Science World (p. 82)
9:30–10:30 AM	G	227, Conv. Center	Medical Mysteries Web Adventures (p. 83)
9:30–10:30 AM	M–C	R05, Conv. Center	NABT Session: The Making of the Fittest: HHMI's Night at the Movies in Your Classroom (p. 85)
9:30–11:30 AM	9–C	214, Conv. Center	Bio-Rad—Forensic DNA Fingerprinting Kit (AP Biology Lab 6) (p. 85)

10:00–11:15 AM	6–12	211, Conv. Center	Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (p. 87)
10:00–11:15 AM	6–12	216, Conv. Center	Teaching About Gene Expression (p. 87)
11:00–11:30 AM	I	232, Conv. Center	NARST Session: What Creationist Students May Be Thinking About as You Teach Evolution (p. 89)
11:00 AM–12 Noon	H–C	227, Conv. Center	Meeting the Challenge of Cultivating Student Learning in Large Classroom Environments (p. 88)
11:00 AM–12 Noon	M–C	R05, Conv. Center	NABT Session: Seashell Taxonomy: A Venomous Topic (p. 90)
12 Noon–1:15 PM	8–12	205, Conv. Center	Forensic Science: Understanding the Math and Science of Blood Spatter (p. 91)
12 Noon–1:15 PM	6–12	211, Conv. Center	Strawberry DNA and Molecular Models (p. 92)
12 Noon–1:15 PM	6–12	216, Conv. Center	Teaching About Gas Exchange (p. 92)
12:30–1:30 PM	M–H	201, Conv. Center	Middle School Motivation and Classroom Centers (p. 93)
12:30–1:30 PM	E–H	227, Conv. Center	Professional Development: Travel, Share, and Learn (p. 94)
12:30–1:30 PM	M–C	R05, Conv. Center	NABT Session: Phylogenetic Trees: How to Illustrate Evolutionary Relationships Using Real Data (p. 95)
1:00–2:30 PM	9–C	214, Conv. Center	Bio-Rad—Enzymes and Biofuels: Go from Grass to Gas! (AP Biology Lab 2) (p. 97)
2:00–3:00 PM	E–H	227, Conv. Center	Go West, Lewis and Clark! Enhancing History with STEM Integration (p. 98)
2:00–3:00 PM	G	R05, Conv. Center	NABT Session: Applicious Science (p. 99)
2:00–3:15 PM	8–12	205, Conv. Center	Forensic Science: Understanding the Math and Science of Blood Using Blood Spatter (p. 101)
3:00–5:30 PM	10–C	214, Conv. Center	Bio-Rad—GMO Investigator Kit (p. 104)
3:30–4:30 PM	H–C	201, Conv. Center	Inquiry in AP Biology—It Doesn't Have to Be an Oxymoron (p. 105)
3:30–4:30 PM	G	227, Conv. Center	UVA Research Experience for Teachers Program: Demos of K–12 Engineering Teaching Kits (p. 106)
3:30–4:30 PM	G	R05, Conv. Center	NABT Session: Reorganize and REVITALIZE with the Louisiana Association of Biology Educators (p. 106)
4:00–5:15 PM	K–12	211, Conv. Center	Introduction to Wisconsin Fast Plants® (p. 108)

Saturday

8:00–9:00 AM	E	222, Conv. Center	Swamp Rabbit Habitat: An Introduction to the Ecology of the Bottomland Hardwoods Ecosystem (p. 112)
8:00–9:00 AM	M–H/I	R02, Conv. Center	Sea Turtle CSI (p. 112)
8:00–9:15 AM	6–12	220, Conv. Center	FDA Food Science Workshop (p. 113)
8:00–9:30 AM	9–C	214, Conv. Center	Bio-Rad—Light Up Your Classroom with Prize-winning GFP! (AP Biology Lab 6) (p. 114)
9:30–10:30 AM	G	219, Conv. Center	Just a Theory: Using the Evolution Discussion to Teach the Nature of Science (p. 114)
9:30–10:30 AM	H–C	230, Conv. Center	Let's Get Helical: Exploring DNA Structure/Function with Interactive Physical Models (p. 116)
9:30–10:30 AM	E–H	R07, Conv. Center	Teaching About Corals: Using NOAA Resources (p. 116)
9:30–11:30 AM	G	R03, Conv. Center	SCST Session: Marooned in the Galápagos: A Scenario-based Approach to Teaching Evolution (p. 117)
10:00–11:00 AM	9–C	214, Conv. Center	Creating a Biotechnology Skills Course with Bio-Rad (p. 117)
11:00 AM–12 Noon	11–C	214, Conv. Center	Bio-Rad—Protein Expression and Purification Series (p. 120)
11:00 AM–12 Noon	M–H	224, Conv. Center	Projects with a Purpose (p. 118)
11:00 AM–1:00 PM	E–H	R02, Conv. Center	Marine Education Share-a-Thon (p. 120)

Chemistry/Physical Science

Thursday

8:00–9:00 AM	H	222, Conv. Center	Redesigning the Laboratory Investigation: Integrating Inquiry into Chemistry (p. 51)
8:00–9:00 AM	H	225, Conv. Center	Basic Polymer Chemistry for the High School Classroom (p. 49)
10:00–11:15 AM	7–12	206, Conv. Center	Dynamic Demonstrations from Flinn Scientific (p. 54)
10:00–11:15 AM	9–12	210, Conv. Center	Going Green: Economical and Environmentally Friendly Inquiry in Chemistry (p. 54)
12:30–1:30 PM	M–C	222, Conv. Center	Metacognition and Formative Assessment in the Chemistry Classroom (p. 60)
12:30–1:45 PM	7–12	205, Conv. Center	Chemistry In-the-Bag Hands-On Inquiry Workshop (p. 61)
12:30–1:45 PM	9–12	208, Conv. Center	*Living By Chemistry:* What Shape Is That Smell? (p. 61)
2:00–3:00 PM	M–H	222, Conv. Center	Polymers: New Twists on Old Favorites (p. 65)
2:15–3:30 PM	7–12	205, Conv. Center	Chemistry In-the-Bag Hands-On Inquiry Workshop (p. 67)
3:30–4:30 PM	H	201, Conv. Center	Potentials and Challenges—Integrating Formative Assessment in a Chinese High School Chemistry Classroom (p. 69)
3:30–4:30 PM	E	R06, Conv. Center	Inquiry in Action (p. 72)
4:00–5:15 PM	9–12	210, Conv. Center	Stop Teaching and Start Coaching AP Chemistry (p. 73)

Friday

8:00–9:00 AM	H	202, Conv. Center	Bring the Science of Cars into the Classroom (p. 75)
8:00–9:00 AM	H	224, Conv. Center	Using Process-Oriented Guided Inquiry Learning to Enhance Learning Communities in Science Classrooms (p. 76)
8:00–9:00 AM	M	R07, Conv. Center	ACS Middle Level Session: Solids, Liquids, and Gases: The Kinetic-molecular Theory of Matter (p. 77)
8:00–9:00 AM	H	R08, Conv. Center	ACS Session One: Equilibrium and Concentration (p. 78)
8:00–9:15 AM	9–12	211, Conv. Center	Introducing Inquiry into the Chemistry Lab (p. 79)
8:00–9:15 AM	6–12	216, Conv. Center	Teaching About Batteries (p. 79)
9:30–10:30 AM	H	202, Conv. Center	Lotions, Potions, and Scrubs: Polymer Science in Cosmetics (p. 82)
9:30–10:30 AM	H	224, Conv. Center	Fudge Chemistry (p. 84)
9:30–10:30 AM	G	226, Conv. Center	Engaging Students in Chemistry Outside the Classroom: A Look at ChemClub (p. 82)
9:30–10:30 AM	M	R07, Conv. Center	ACS Middle Level Session: Changes of State: Evaporation and Condensation (p. 85)
9:30–10:30 AM	H	R08, Conv. Center	ACS Session Two: Equilibrium and Energy (p. 85)
10:00–11:15 AM	8–C	203, Conv. Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 86)
11:00 AM–12 Noon	H	202, Conv. Center	Write Your Way to Success: Grant Writing Strategies for You and Your Chemistry Students (p. 87)
11:00 AM–12 Noon	H	218, Conv. Center	Nano-Size Me: Helping Students Understand Size-dependent Properties (p. 90)
11:00 AM–12 Noon	M–H	224, Conv. Center	Technology Makes STEM Instruction Easy (p. 90)
11:00 AM–12 Noon	M	R07, Conv. Center	ACS Middle Level Session: Density—A Molecular View (p. 90)
11:00 AM–12 Noon	H	R08, Conv. Center	ACS Session Three: Rate (p. 91)
12 Noon–1:15 PM	8–C	203, Conv. Center	Molecular Modeling in Middle and High School Classrooms: Engage Your Students! (p. 91)
12 Noon–1:15 PM	9–12	207, Conv. Center	Sparking Interest and Learning with Chemistry: A Part 1 Experience (p. 92)
12:30–1:30 PM	H	202, Conv. Center	Corrosion Is Everywhere—Use It to Make Chemistry Relevant and Fun (p. 93)
12:30–1:30 PM	H	219, Conv. Center	Using Science Stories to Teach Chemistry (p. 93)
12:30–1:30 PM	M–H	224, Conv. Center	Inquiry-based Hands-On Activities and Demonstrations (p. 95)
12:30–1:30 PM	M	R07, Conv. Center	ACS Middle Level Session: The Periodic Table, Energy Levels, and Bonding (p. 96)
12:30–1:30 PM	H	R08, Conv. Center	ACS Session Four: Catalysis (p. 96)
1:00–2:00 PM	9–12	212, Conv. Center	Chemistry—Atmospheric Pressure (p. 96)

2:00–3:00 PM	H–C/S	202, Conv. Center	American Chemical Society Guidelines and Recommendations for Teaching High School Chemistry: A Resource for High School Chemistry Teaching (p. 98)
2:00–3:00 PM	M	R07, Conv. Center	ACS Middle Level Session: Polarity of the Water Molecule and Its Consequences (p. 101)
2:00–3:00 PM	H	R08, Conv. Center	ACS Session Five: Light as a Reactant and/or Product (p. 101)
2:00–3:15 PM	9–12	207, Conv. Center	Connecting to Chemistry: Igniting Student Motivation with STEM Examples and Ideas (p. 102)
2:00–3:15 PM	9–12	216, Conv. Center	What Is the Difference Between Heat and Temperature? (p. 102)
3:30–4:30 PM	G	202, Conv. Center	Teaching and Learning in the Digital Age: Chemistry Resources Teachers and Students Can Rely On (p. 105)
3:30–4:30 PM	M	R07, Conv. Center	ACS Middle Level Session: Chemical Change: Breaking and Making Bonds (p. 107)
3:30–4:30 PM	H	R08, Conv. Center	ACS Session Six: Half-Life (p. 107)
4:00–5:15 PM	7–11	205, Conv. Center	Cool Tech Tools for Chemistry: Really Easy Data Collectors (p. 107)
4:00–5:15 PM	9–12	207, Conv. Center	Sparking More Interest with Chemistry: A Part 2 Experience (p. 107)
4:00–5:15 PM	9–12	208, Conv. Center	*Living By Chemistry:* Create a Table (p. 107)

Saturday

8:00–9:00 AM	H	225, Conv. Center	What in the World Is a Bioplastic? (p. 111)
9:30–10:30 AM	E–H	R04, Conv. Center	Engage Students with the Mystery Powder Inquiry Lab (p. 116)

Earth/Space Science

Thursday

8:00–9:00 AM	I	R09, Conv. Center	JetStream: An Online School for Weather (p. 52)
8:00–9:15 AM	5–12	204, Conv. Center	The Layered Earth! (p. 52)
10:00–11:15 AM	5–12	204, Conv. Center	Starry Night Education! (p. 54)
12:30–1:30 PM	M	R06, Conv. Center	MoonKAM (Moon Knowledge Acquired by Middle School Students): Exploring Lunar Images (p. 60)
12:30–1:30 PM	I	R09, Conv. Center	Ice Core Records—From Volcanoes to Stars (p. 61)
12:30–1:45 PM	K–12	203, Conv. Center	Master of Science Degree in Geosciences Available Online Through the Teachers in Geosciences Program (p. 61)
2:00–3:00 PM	E–M/I	R06, Conv. Center	Explore Space Mission Science (p. 66)
3:30–4:30 PM	M–H/S	218, Conv. Center	STEM in Action—I'm Ready for the Real World! (p. 70)
3:30–4:30 PM	G	R09, Conv. Center	Stellar Life Cycles (p. 72)

Friday

8:00–9:00 AM	G	R09, Conv. Center	Let's Get Well Grounded! (p. 78)
8:00–9:15 AM	5–12	204, Conv. Center	The Layered Earth! (p. 78)
9:30–10:30 AM	E	230, Conv. Center	To Infinity and Beyond! (p. 84)
9:30–10:30 AM	G	R09, Conv. Center	Climate Change Classroom Toolkit (p. 85)
10:00–11:15 AM	K–8	210, Conv. Center	Destructive Forces of Nature: Earthquakes (p. 87)
11:00 AM–12 Noon	E–H	217, Conv. Center	NASA CERES S'COOL Project: Be a S'COOL Cloud Observer! (p. 87)
11:00 AM–12 Noon	G	226, Conv. Center	Not Just Hot Air: Exploring Climate Change's Interconnections and Sustainable Solutions (p. 88)
11:00 AM–12 Noon	G	R09, Conv. Center	Activities from Across the Earth System (p. 91)
12:30–1:30 PM	G	226, Conv. Center	NASA's High-Energy Vision—Chandra and the X-ray Universe (p. 94)
2:00–3:00 PM	E–H	226, Conv. Center	MY NASA DATA: Using Earth Systems Data Visualization in the Classroom (p. 98)
2:00–3:00 PM	E–H	R09, Conv. Center	National Earth Science Teachers Association Earth Science Share-a-Thon (p. 101)

3:30–4:30 PM	M–H	219, Conv. Center	NASA: Size and Scale of the Universe (p. 106)
3:30–4:30 PM	G	226, Conv. Center	Using NASA Resources to Create a Summer Experience (p. 106)
3:30–4:30 PM	G	R09, Conv. Center	National Earth Science Teachers Association (NESTA) Rock and Mineral Raffle (p. 107)
4:00–5:15 PM	9–12	210, Conv. Center	*Marine Science: The Dynamic Ocean:* A New High School STEM Offering (p. 108)
4:00–5:15 PM	4–8	216, Conv. Center	Teaching About the Rock Cycle and Earth Time (p. 108)

Saturday

8:00–9:00 AM	G	217, Conv. Center	Hands-On/Minds-On Science: Using Interactive White Board and Hands-On Activities to Reach All Learners (p. 112)
8:00–9:00 AM	S	219, Conv. Center	Science Success: How Do I Spell Thee in an All-inclusive Learning Environment? (p. 112)
8:00–9:00 AM	M	224, Conv. Center	EarthKAM: Taking Pictures of Earth from Space (p. 112)
8:00–9:00 AM	M–H	229, Conv. Center	Romancing the Stone (p. 112)
8:00–9:00 AM	G	R03, Conv. Center	Dark Sky Rangers: Protecting Our Night Skies (p. 112)
9:30–10:30 AM	M–H	218, Conv. Center	Climate Expeditions: Checking Out Your Team (p. 114)
9:30–10:30 AM	H	222, Conv. Center	Stellar Bar Codes (p. 115)
9:30–10:30 AM	M–H	229, Conv. Center	No Confusion Inclusion (p. 115)
11:00 AM–12 Noon	M–H	229, Conv. Center	What Is Your Cosmic Connection to the Elements? (p. 119)
1:00–4:00 PM	E–H	La Galerie 2, Marriott	MY NASA DATA: Using an Online Earth Science Visualization Tool for the Modern Classroom (p. 120)

Environmental Science

Thursday

8:00–9:00 AM	M–H	217, Conv. Center	Climate Change: Global Connections and Sustainable Solutions (p. 51)
8:00–9:00 AM	M–H	229, Conv. Center	Modeling Populations (p. 51)
8:00–9:00 AM	P–M	230, Conv. Center	Building Environmental Values and Good Global Citizenship (p. 51)
8:00–9:00 AM	I	R08, Conv. Center	Focus on Forests: Project Learning Tree's New Secondary Curriculum (p. 52)
12:30–1:30 PM	G	224, Conv. Center	ASTC Session: STEM, Louisiana Wetlands Restoration, and Student Success (p. 58)
12:30–1:30 PM	M–C	226, Conv. Center	Climate Literacy and Energy Awareness Network (p. 58)
12:30–1:30 PM	G	228, Conv. Center	Be Careful What You "Fish: For: Environmental Health for Humans (p. 58)
12:30–1:30 PM	E–H	232, Conv. Center	An Environmental Experiential Learning Project for Underserved Populations (p. 59)
2:00–3:00 PM	M–H	202, Conv. Center	Geo–everything in Your Classroom (p. 64)
2:00–3:00 PM	M–H/I	217, Conv. Center	Teaching the Carbon Cycle in an Urban Setting (p. 65)
2:00–3:00 PM	E–H/I	R08, Conv. Center	Be a Butterfly Doctor with Project MonarchHealth (p. 66)
3:30–4:30 PM	M–H	202, Conv. Center	Teaching Culturally Relevant Ecology: Strategies for Improving Environmental Science Literacy (p. 69)
3:30–4:30 PM	G	228, Conv. Center	Big World, Small Planet: Climate Science Literacy with Digital Media (p. 70)
3:30–4:30 PM	E–M	232, Conv. Center	NSTA Avenue Session: America's Home Energy Education Challenge (p. 70)
3:30–4:30 PM	I	R08, Conv. Center	GreenSchools! (p. 72)

Friday

8:00–9:00 AM	G	217, Conv. Center	Saved Our Lake, Let's Save Our Coast (p. 76)
8:00–9:00 AM	I	229, Conv. Center	Teaching Science Outdoors and Making Local Connections (p. 77)
8:00–9:00 AM	P–M/I	230, Conv. Center	Nature–ally Good Teaching in Early Childhood Education (p. 77)
8:00–9:00 AM	E–M	232, Conv. Center	NSTA Avenue Session: America's Home Energy Education Challenge (p. 76)
9:30–10:30 AM	G	229, Conv. Center	Facilitating Early Childhood Education with Project Learning Tree (p. 84)
11:00 AM–12 Noon	G	229, Conv. Center	Global Connections: Forests of the World (p. 90)

12:30–1:30 PM	I	217, Conv. Center	Forests, Carbon, and Climate Change (p. 95)
12:30–1:30 PM	H	229, Conv. Center	Drop the Lecture and Let the Students Pick Up the Learning in Environmental Science (p. 95)
12:30–1:30 PM	E–M/S	231, Conv. Center	NSTA Avenue Session: Disney's Planet Challenge: Project Based Learning and Service Learning–based Lesson Development and Funding (p. 94)
2:00–3:00 PM	M–H	229, Conv. Center	7 Billion and Counting: Lessons for Our Planet's Future (p. 100)
2:00–3:15 PM	9–12	211, Conv. Center	Drive Student Inquiry with Carolina's Advanced Environmental Science Labs (p. 102)
2:30–3:30 PM	9–12	212, Conv. Center	Renewable Energy Exploration: Solar and Wind Power (p. 104)
3:30–4:30 PM	G	204, Conv. Center	NSTA Avenue Session: Communicate, Collaborate, and Create: Changing Your Classroom and the World (p. 105)
3:30–4:30 PM	E–H	229, Conv. Center	School Energy Survey (p. 106)

Saturday

8:00–9:15 AM	7–12	216, Conv. Center	Teaching About Hydrogen Fuel Cells (p. 113)
10:00–10:30 AM	G	217, Conv. Center	Integrating Informal Science Experiences into Classroom Curricula (p. 117)

Integrated/General

Thursday

8:00–9:00 AM	G	201, Conv. Center	Ignite Your Students' Passion for Learning by Fueling Your Own! (p. 49)
8:00–9:00 AM	E–H	202, Conv. Center	Get SIMulated! (p. 49)
8:00–9:00 AM	M–H	218, Conv. Center	STEM Research Made Visible! (p. 51)
8:00–9:00 AM	G	219, Conv. Center	Fun with Plants: Every Plant Has a Story to Tell (p. 49)
8:00–9:00 AM	G	226, Conv. Center	Kindergarten Scientific Illustrations (p. 50)
8:00–9:00 AM	G	228, Conv. Center	Grant Writing 101 (p. 50)
8:00–9:00 AM	E–H	231, Conv. Center	The Internet Science and Technology Fair: Connecting Through CF STEM Connect (p. 50)
8:00–9:00 AM	M–C	232, Conv. Center	Oceans of Professional Development Opportunities Through NOAA (p. 50)
8:00–9:00 AM	M–H	R01, Conv. Center	NMLSTA Session: Kernels of Fun with Corn-based Plastics (p. 51)
8:00–9:00 AM	G	R02/R03, Conv. Center	Is This Your First NSTA Conference? (p. 51)
8:00–9:15 AM	3–8	210, Conv. Center	Teaching English Language Learners in the Science Classroom: Collaboration, Co-teaching, and Coaching (p. 52)
8:00–9:15 AM	3–5	212, Conv. Center	Dive into STEM with GEMS® Ocean Sciences Sequence (p. 52)
8:00–9:15 AM	6–12	216, Conv. Center	STEM-focused Technology Activities Using Inquiry Investigations™ (p. 52)
8:00–9:15 AM	K–6	220, Conv. Center	Learning the Design Process—Experiment or Product? (p. 53)
8:00–10:30 AM	K–8	215, Conv. Center	Using Science Notebooks with FOSS (p. 53)
9:30–10:45 AM	G	La Louisiane, Conv. Center	General Session: Ted Danson: My Ocean Story (Speaker: Ted Danson) (p. 53)
10:00–11:15 AM	K–8	212, Conv. Center	New Tools for STEM Education from Carolina™ Curriculum (p. 54)
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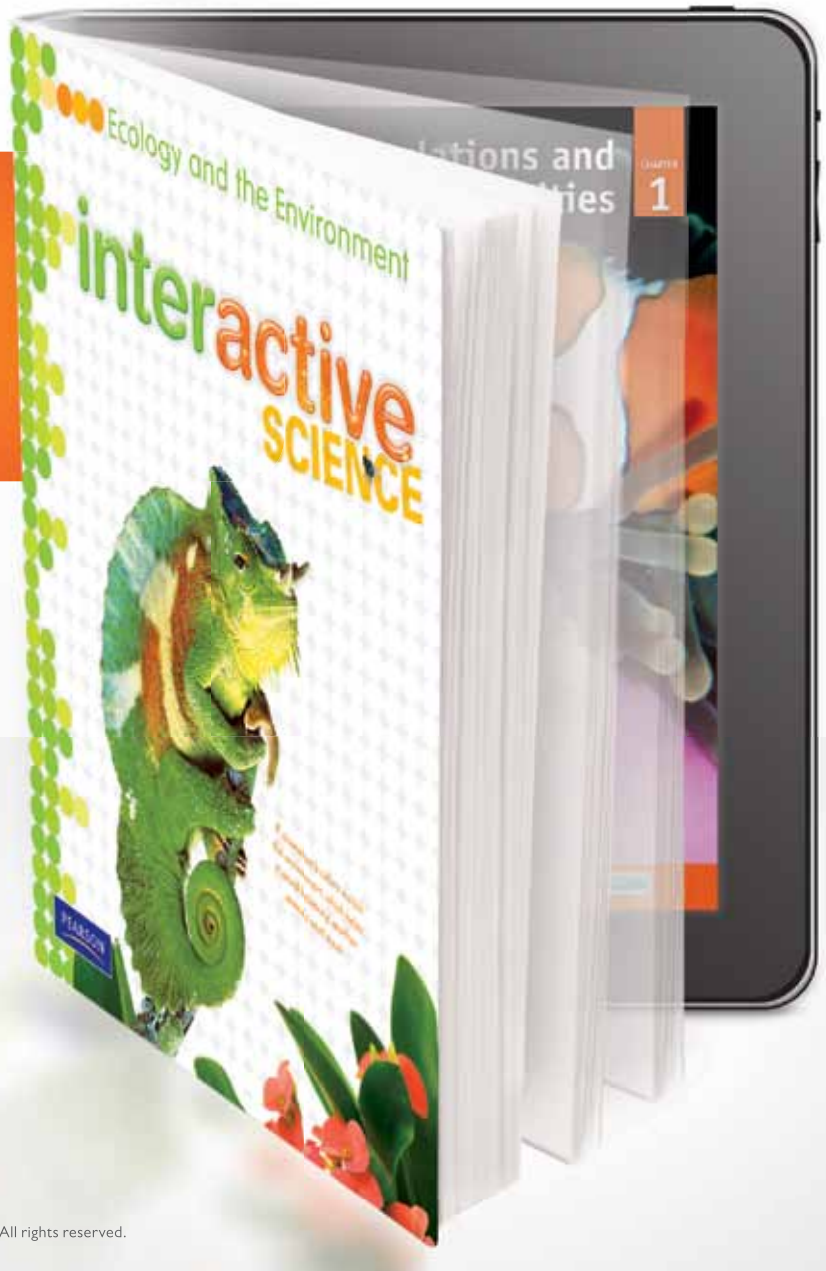

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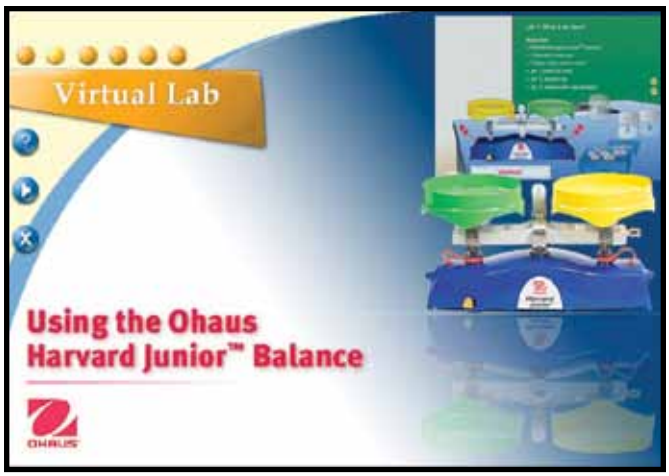

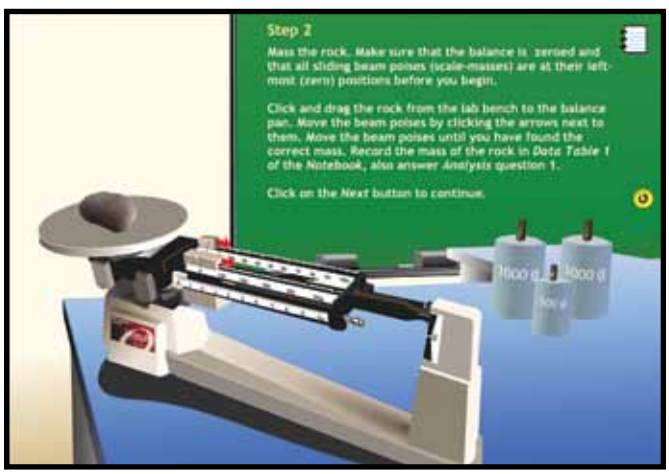

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