



NEW ORLEANS

NSTA 2009 National Conference on Science Education

Celebrating the
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Laissez les Bons
Temps Rouler!

Friday, March 20

2

CAROLINA

Professional Development for NSTA 2009



Hone your teaching skills or explore a new topic. Our professional development sessions are taught by experienced presenters—classroom teachers, science coordinators serving as teaching partners, and our own staff scientists. Their training in the latest teaching techniques, requirements of the National Science Education Standards, and cutting-edge science topics means you'll receive concise, valuable information. See the schedule below for sessions, times, and locations. **Visit us in Booth 124!**

Session Schedule

Thursday, March 19, 2009

Time	Location	Grade*	Title
9:30 AM–11:00 AM	Room 215	E, M, H	Introduction to Wisconsin <i>Fast Plants</i> ®
9:30 AM–11:00 AM	Room 216	H	DNA Necklaces and Double-Helix Models
9:30 AM–11:00 AM	Room 217	E	Math Out of the Box®—Numbers Game!
11:30 AM–1:00 PM	Room 215	M, H	Take the Leap: <i>Carolina's Perfect Solution</i> ® Frog Dissection
11:30 AM–1:00 PM	Room 216	H	Introduction to Electrophoresis
11:30 AM–1:00 PM	Room 217	E	<i>Building Blocks of Science</i> ®: Measure It!
1:30 PM–3:00 PM	Room 215	H, C	Exploring Feline Anatomy with <i>Carolina's Perfect Solution</i> ® Cats
1:30 PM–3:00 PM	Room 216	H	Above and Beyond with Carolina's AP® Biology Series: Explore the Options!
1:30 PM–3:00 PM	Room 217	E	Addressing Difficult Physical Science Standards for Grades 1–3
3:30 PM–5:00 PM	Room 215	H, C	Think Mink! Exploring Mammalian Anatomy with <i>Carolina's Perfect Solution</i> ® Mink
3:30 PM–5:00 PM	Room 216	H	Molecular Models in the Classroom
3:30 PM–5:00 PM	Room 217	E, M	The Story Behind the Science—Scaffolding

Friday, March 20, 2009

Time	Location	Grade*	Title
8:00 AM–9:30 AM	Room 215	E, M	Carolina's Young Scientist Dissection Series
8:00 AM–9:30 AM	Room 216	H	Amplify Your Genetics Teaching Skills with Carolina's New <i>Inquiries in Science</i> ™ Biology Units
8:00 AM–9:30 AM	Room 217	E	Math Out of the Box®—Measuring Success!
10:00 AM–11:30 AM	Room 215	M, H	Genetics with Wisconsin <i>Fast Plants</i> ®/Flies/Corn
10:00 AM–11:30 AM	Room 216	H	Go APES! Explore Carolina's Quality AP® Environmental Science Series
10:00 AM–11:30 AM	Room 217	E	Science Investigations: Students, Notebooks, and the Power of Inquiry
12:00 PM–1:30 PM	Room 215	M, H	Comparative Vertebrate Anatomy with <i>Carolina's Perfect Solution</i> ® Specimens
12:00 PM–1:30 PM	Room 216	H, C	Illuminate Your Classroom with Carolina's Green Gene Colony Transformation
12:00 PM–1:30 PM	Room 217	E	<i>The Zula Patrol</i> ® Exploration Station—Mission: Simple Machines
2:00 PM–3:30 PM	Room 215	H	AUTOPSY: Forensic Dissection Featuring <i>Carolina's Perfect Solution</i> ® Pigs
2:00 PM–3:30 PM	Room 216	H	"Finding Solutions" for Your Chemistry Labs with Carolina's New <i>Inquiries in Science</i> ™ Chemistry Units
2:00 PM–3:30 PM	Room 217	E, M	Effective Science Materials Support Systems
4:00 PM–5:30 PM	Room 215	E, M, H	Butterflies in Your Classroom
4:00 PM–5:30 PM	Room 216	H	Drop the Lecture and Let Students Pick Up the Learning in AP® Science
4:00 PM–5:30 PM	Room 217	M	The Middle School Science Lab . . . Out of a Box!



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124!**

Saturday, March 21, 2009

Time	Location	Grade*	Title
8:00 AM–9:30 AM	Room 215	H	SQUID INK-UIRY: Inquiry-Based Invertebrate Anatomy Through Squid Dissection
8:00 AM–9:30 AM	Room 216	E, M, H	Hands-On Science with Classroom Critters
8:00 AM–9:30 AM	Room 217	E, M	Discover the Solar System and Beyond with GEMS® Space Science Sequences
10:00 AM–11:30 AM	Room 215	M, H	Rats! Inquiry-Based Dissection with <i>Carolina's Perfect Solution</i> ® Specimens
10:00 AM–11:30 AM	Room 216	H	Need "Energy" in Your Environmental Classes? Learn About Carolina's New <i>Inquiries in Science</i> ™ Environmental Science Series
10:00 AM–11:30 AM	Room 217	E	Math Out of the Box®: Data Analysis and Algebraic Thinking Connect to Science
12:00 PM–1:30 PM	Room 215	E, M, H	Creating Habitats in the Classroom
12:00 PM–1:30 PM	Room 216	H	Forensics for the Biology Lab
12:00 PM–1:30 PM	Room 217	E	<i>The Zula Patrol</i> ®: Blast Off with Mixtures, Solutions, and Chemical Reactions
2:00 PM–3:30 PM	Room 215	M, H	Comparative Mammalian Organ Dissection with <i>Carolina's Perfect Solution</i> ® Specimens
2:00 PM–3:30 PM	Room 216	H	Introduction to Protozoa
2:00 PM–3:30 PM	Room 217	E	Math Out of the Box®: Developing Geometric Logic

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



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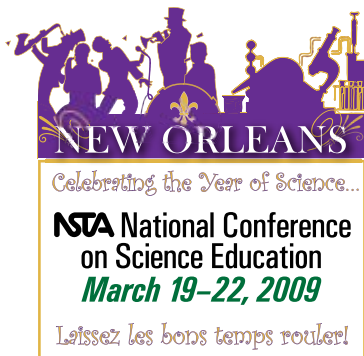
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NSTA 57th National Conference on Science Education

New Orleans, Louisiana • March 19–22, 2009

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NSTA Affiliates

Association for Science Teacher Education (ASTE)
Association for Multicultural Science Education (AMSE)
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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Kathy K.
Technology Integration Specialist
Trenton, Ohio



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—©Carl Purcell/NOMCVB

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Conference Highlights *Featured Speakers/Special Events*



SC-19: *Look What Technology Can Do for Your Classroom: Basics of Video Analysis*

Friday, March 20

7:00–8:30 AM	High School Breakfast (M-3): Don Davis	17
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3:30–4:30 PM	Robert H. Carleton Lecture: Bonnie J. Brunkhorst.	153
4:00–6:00 PM	NSTA’s Exemplary Science Program (ESP) Symposium IV: Inquiry	170
6:00 PM–12 Mid	Special Evening Session: A Stimulating Evening with Eight Extraordinary Scientists and Communicators of Science: Sagan, Bronowski, Gould, Miller, Morrison, Bartlett, Carson, and Herschbach	183

Conference Program

Conference Strands *Sessions and Events*

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

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



Science and the Human Spirit

When facing decisions that require knowledge of science and technology, the resilient human spirit seeks understanding and renewal. Human interaction with the environment results in changes in the natural world that impact the human condition and promote awareness of our global interdependency.



Research to Practice: The Science Teacher Professional Continuum

Current science education research is providing critical insight into the specific needs of educators at various stages of their professional careers. As a result, the way science educators view the teaching and learning process, implement research-based instruction and assessment strategies, and use tools and resources to improve teaching and learning is changing.



Energy and the Environment: The Natural and Human-designed World

Our society's energy needs are growing at an alarming rate, which has resulted in the consumption of many of our natural resources at an unprecedented pace. The disruption of both coastal processes and Earth's natural climate cycles are but two consequences of this unparalleled demand for energy resources. A 21st-century proactive vision for solutions is required to promote responsible and efficient use of our natural resources while meeting growing energy demands.



ISTE: Meeting the Needs of the Digital Student

Many students today are natives of digital technology. How can teachers, many of whom are digital immigrants, help students become responsible digital citizens? The understanding and use of technology are critical components of STEM (science, technology, engineering, and mathematics) education.

Science and the Human Spirit

8:00–9:00 AM

Using Humor to Enhance Scientific Literacy

9:30–10:30 AM

Pads, Pups, and Pods

11:00 AM–12 Noon

Influenza: Fear of an Approaching Pandemic?

2:00–3:00 PM

Step Up to a Symphony of Science

2:00–6:00 PM

Short Course: Putting Science in Context?
How Do We Do That? (By Ticket: SC-16)

3:30–4:30 PM

Sharing the Spirit of Stewardship: Writing Green for Kids

5:00–6:00 PM

Saving Our Coast, Our Communities, and Our Homes

Conference Strands *Sessions and Events*

Research to Practice: The Science Teacher Professional Continuum

8:00–9:00 AM

Boston Public Schools: A Science Education Leadership Story

8:15–11:15 AM

Short Course: Turn Maniacs into Brainiacs: Using Brain-based Research to Create an Optimum Learning Environment
(By Ticket: SC-10)

9:30–10:30 AM

Using a Student's Individual Strongest Multiple Intelligence Attribute to Plan the Lesson, Teach the Lesson, and Evaluate the Lesson

11:00 AM–12 Noon

Empowering Elementary Teachers to Teach and Do Science

12:30–1:30 PM

What Works in Teaching Science: A Meta-Analysis of Current Research

1:30–5:30 PM

Short Course: Attaining National Board Certification for Professional Teaching Standards in Science (By Ticket: SC-15)

3:30–4:30 PM

Guiding Preservice Teachers' Development of Meaningful Science Investigations for Preschool

5:00–6:00 PM

A Practitioner Resource for Learning Science in Informal Settings

Energy and the Environment: The Natural and Human-designed World

8:00–9:00 AM

Climate Change Data Here and There

8:00 AM–12 Noon

Short Course: Teaching About Climate Change (By Ticket: SC-8)

9:30–10:30 AM

The Urban Ecosystem Re-examined: A Return to the Forest Where We Live

11:00 AM–12 Noon

Reduce, Reuse, Recycle: How Sustainable Engineering Relates to Energy-related Challenges

12:30–1:30 PM

In a New Light: The Color of Weather and Climate

2:00–3:00 PM

Alternative Energy Sources: Inquiry-based Activities for Science Classrooms

3:30–4:30 PM

Teaching Environmental Science with Case Studies: Agriculture and Renewable Energy

ISTE: Meeting the Needs of the Digital Student

8:00–9:00 AM

ISTE: Emerging Technologies in the Science Classroom

8:30–11:30 AM

Short Course: Building Simple Animations and Simulations Using Freeware
(By Ticket: SC-11)

9:30–10:30 AM

ISTE: Using Technology to Break the Traditional Mold of a Laboratory Report

11:00 AM–12 Noon

ISTE: What Should Administrators Know and Be Able to Do with Technology in the Science Classroom?

12:30–1:30 PM

ISTE: For Teachers by Teachers: The Cogs Website and NASA's Virtual Lab

1:30–4:30 PM

Short Course: Using Technology to Teach Science Concepts Through Outdoor Studies
(By Ticket: SC-14)

2:00–3:00 PM

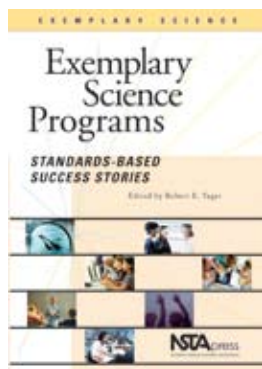
ISTE: For Teachers by Teachers: NASA Brings a Standards-based Shuttle

3:30–4:30 PM

Lights! Action! Science!

5:00–6:00 PM

Storycaching GLOBE: iPods, GPS, Data, and the GLOBE Project



*It Takes ESP to
Develop Exemplary
Science Programs!*

NSTA's Exemplary Science Program (ESP) was initiated to highlight programs that have been proven to produce superior student learning. Five monographs have been produced thus far—PreK–4, 5–8, 9–12, Informal Education, and Professional Development—each detailing exemplary programs selected by a national advisory board of NSES and NSTA leaders. These exemplary programs are shared with attendees at NSTA conferences.

NSTA's Exemplary Science Program (ESP)

Realizing the Visions of the National Science Education Standards

Friday, March 20 • 1:00–6:00 PM • Room 252, Convention Center

Four ESP symposia are offered at the New Orleans conference, each sharing exemplary programs. ESP symposia were organized by Robert E. Yager, 1982–1983 NSTA President and Editor of the NSTA ESP Program.

See the Friday daily program (Vol. 2) for complete descriptions.

Symposium I

1:00–2:00 PM Exemplary Science Programs in Grades PreK–4

Coordinator: Robert E. Yager, The University of Iowa, Iowa City

Creating a Context for Inquiry

The Primary Classroom: Science, Literacy, and Inquiry

Thinking Outside the Box: No Child Left Inside!

Symposium II

2:00–3:00 PM Exemplary Science Programs in Grades 9–12

Coordinator: Robert E. Yager, The University of Iowa, Iowa City

RIP-ing Away Barriers to Science Education

Technology and Cooperative Learning: The IIT Model for Teaching Authentic Chemistry Curriculum

Student Inquiry at the Illinois Mathematics and Science Academy

Stop Talking, Start Listening: Turning Didactic Science Teaching on Its Head

Symposium III

3:00–4:00 PM Exemplary Science Programs—Best Practices in Professional Development

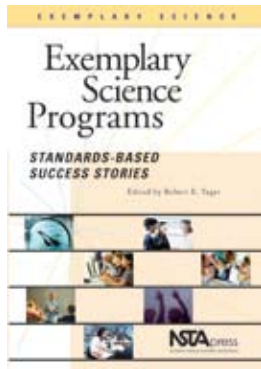
Coordinator: Robert E. Yager, The University of Iowa, Iowa City

Exemplary Science: Best Practice in Science Teaching Today

Bringing School Science to College: Modeling Inquiry in the Elementary Science Methods Course

Knowing and Teaching Science: Just Do It

Hey! What're Ya Thinking? Developing Teachers as Reflective Practitioners



NSTA's Exemplary Science Program (ESP)

Realizing the Visions of the National Science Education Standards

Friday, March 20 • 1:00–6:00 PM • Room 252, Convention Center

Symposium III

4:00–6:00 PM Exemplary Science Programs on Inquiry

Coordinator: Robert E. Yager, The University of Iowa, Iowa City

Future Scientists—Student Outreach Initiative: “Sowing the Seeds of Future Success”

Inquiry: A Challenge for Changing the Teaching of Science in Connecticut

Learning Science with Inquiry in the Clark County School District

Inquiry Is Elementary: A Description of Differing Approaches to Inquiry Within Two Elementary Schools Focusing on Environmental Science and Mathematics and on Mathematics and Children’s Engineering

Science Projects: A Recipe for Successful Inquiry in Eighth-Grade Earth and Space Science

Q200: An Introduction to Scientific Inquiry

Science as Inquiry at Sir Winston Churchill Collegiate and Vocational Institute

Science Is Not a Spectator Sport: Three Principles from 15 Years of Project *Dragonfly*

Student Inquiry and Research: Developing Students’ Authentic Inquiry Skills

Informal Science Day

Friday, March 20, 8:00 AM–6:00 PM • Carondelet, New Orleans Marriott

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

A variety of breakout presentations have been scheduled throughout the day. Two featured presentations have been scheduled—the first by Judy Scotchmoor of the University of California Museum of Paleontology and the second a newly released report on informal learning from the National Academies of Sciences presented by Andrew W. Shouse and Philip L. Bell. The day culminates with the upbeat Informal Science Share-a-Thon, where attendees can visit with representatives from many informal organizations as they showcase their programs and resources.

See the *Friday daily program (Vol. 2)* for descriptions.

Agenda

8:00–9:00 AM: Breakout Sessions

9:30–10:30 AM

Welcome Presentation

Building Bridges Across Science Education

Elsa K. Bailey, NSTA Director, Informal Science, and Elsa Bailey Consulting, San Francisco, Calif.

Featured Presentation

What Are You Doing to Celebrate Science in 2009?

Judy Scotchmoor, Assistant Director, Education and Public Programs, University of California Museum of Paleontology, Berkeley

11:00 AM–12 Noon: Breakout Sessions

12 Noon–2:00 PM

Featured Presentation/Brown Bag Lunch

How Students Learn Science When They Are Not in School

Andrew W. Shouse, Associate Director, UW Institute for Science and Mathematics Education, University of Washington, Seattle

Philip L. Bell, Associate Professor of the Learning Sciences, University of Washington, Seattle

2:00–3:00 PM: Breakout Sessions

4:00–6:00 PM: Informal Science Day Share-a-Thon



Elsa K. Bailey



Judy Scotchmoor

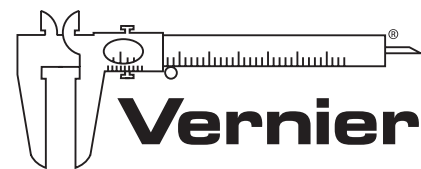


Andrew W. Shouse



Philip L. Bell





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THURSDAY • March 19th • Workshop Room 222

8:00 – 9:30 A.M.	BIOLOGY WITH VERNIER 
10:00 – 11:30 A.M.	CHEMISTRY WITH VERNIER 
12:00 – 1:30 P.M.	K-8 SCIENCE WITH VERNIER 
2:00 – 3:30 P.M.	ENVIRONMENTAL SCIENCE WITH VERNIER 





FRIDAY • March 20th • Workshop Room 222

8:00 – 9:30 A.M.	CHEMISTRY WITH VERNIER 
10:00 – 11:30 A.M.	PHYSICS WITH VERNIER 
12:00 – 1:30 P.M.	WATER QUALITY WITH VERNIER 
2:00 – 3:30 P.M.	EARTH SCIENCE WITH VERNIER 

FRIDAY • March 20th • Workshop Room 224

8:00 – 9:30 A.M.	FORENSICS WITH VERNIER DEMO
10:00 – 11:30 A.M.	ENGINEERING WITH VERNIER DEMO
12:00 – 1:30 P.M.	LIGHTS, CAMERA....DATA COLLECTION DEMO
2:00 – 3:30 P.M.	AP* SCIENCE WITH VERNIER DEMO

SATURDAY • March 21st • Workshop Room 222

8:00 – 9:30 A.M.	PHYSICS WITH VERNIER 
10:00 – 11:30 A.M.	BIOLOGY WITH VERNIER 
12:00 – 1:30 P.M.	HUMAN PHYSIOLOGY WITH VERNIER 
2:00 – 3:30 P.M.	K-8 SCIENCE WITH VERNIER 

SATURDAY • March 21st • Workshop Room 224

8:00 – 9:30 A.M.	ADVANCED BIOLOGY & BIOTECHNOLOGY WITH VERNIER DEMO
10:00 – 11:30 A.M.	IB* SCIENCE WITH VERNIER DEMO
12:00 – 1:30 P.M.	SPECTROSCOPY WITH VERNIER DEMO
2:00 – 3:30 P.M.	ADVANCED LOGGER PRO AND LABQUEST DEMO

Hands-on workshop 

Demonstration workshop **DEMO**

NO PRE-REGISTRATION!
NO FEE!

Teacher Researcher Day

Friday, March 20 • 8:30 AM–5:00 PM • Acadia, New Orleans Marriott



Kathleen Roth

Teacher Researcher Day is open to both new and experienced teacher researchers. Join us for a full day of activities!

Teacher researchers are curious about their students' learning and ask questions to try to better understand what is happening in their classrooms. They collect data such as videotapes of instruction, copies of student work, and their own written reflections. Then they try to make sense out of what they see in the data and use this knowledge to improve their teaching. They also share their findings with colleagues in their schools and elsewhere.

Teacher Researcher Day is for both new and experienced teacher researchers. The full day of activities includes a poster session, an invited presentation, a workshop, presentations on topical issues, and a closing session to make plans for teacher researcher collaborations. These sessions provide opportunities to meet teacher researchers and learn about their studies in a wide variety of contexts.

See the Friday daily program (Vol. 2) for details.

8:30–9:30 AM

Poster Session for Teachers and Teacher Educators Inquiring into Science Learning and Teaching

9:30–11:00 AM

Teacher Researcher Day Featured Presentation
Lenses for Looking at Videos of Science Teaching and Learning
Kathleen Roth, LessonLab Research Institute, Santa Monica, Calif.

11:00 AM–12 Noon

Student Performance in a Freshman Modeling-based Physics Curriculum
Using Student Discourse to Improve Learning
Teacher Development Through Classroom-based Research
Using Teacher Research to Strengthen Science Teaching and Learning
A Partnership for Learning About Elementary Science Teaching
Student Learning in Your Classroom:
Developing a Research Project

12 Noon–12:30 PM

Science Inquiry Group Network

12:30–1:30 PM

Reading Strategies for New Teachers by New Teachers
Effective Use of Performance Assessment in Scientific Inquiry
Using Classroom Inquiry to Explore Student Learning and Motivation
Documenting Student Success

1:30–2:00 PM

Lesson Study as a Pathway for Reflection, Professional Development, and Building Collegiality

Multivariate Analysis of Student Attitude, Motivation, and Predictors of Success in Secondary Science

Engaging Prospective Teachers in Integrating Physics and Literacy Learning

2:00–3:00 PM

How to Conduct Action Research in the Science Classroom

3:00–3:30 PM

Teacher Inquiry Groups: Learning About Learning

3:30–4:30 PM

Teacher as Researcher: Formal Presentations of Teachers' Research
Science in the First Year: The Use of Narratives to Develop a Professional Stance of Teaching Science

4:00–4:30 PM

Information Recall vs. Real Learning

4:30–5:00 PM

Fostering Teacher Researcher Collaborations

NSTA Press Sessions

NSTA Press books offer 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.

Friday, March 20

8:00–9:00 AM

A Head Start on Science
Page 33

8:30–9:30 AM

Poster Session for Teachers and Teacher Educators Inquiring into Science Learning and Teaching (Teacher Researcher Day session)
Page 45

11:00 AM–12 Noon

Bridging the Gap Between Everyday and Scientific Explanations of Evolution (Informal Science Day session)
Page 89

12:30–1:30 PM

Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It
Page 117

1:00–6:00 PM

Exemplary Science Program (ESP) Symposia
Pages 123, 131, 151, 170

2:00–3:00 PM

Stop Faking It! Finally Understand MORE CHEMISTRY BASICS So You Can Teach It
Page 140

3:00–3:30 PM

Teacher Inquiry Groups: Learning About Learning (Teacher Researcher Day session)
Page 150

3:30–4:30 PM

Help! Is the Safety Doctor in the House?
Page 155

Professional Development: Using Trends, Practices, and Research to Strengthen Science Teaching and Learning
Page 157

Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It
Page 160

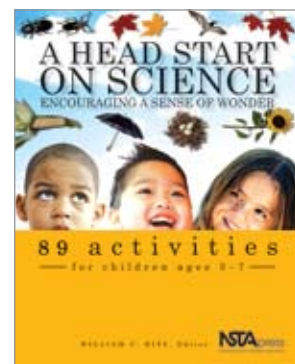
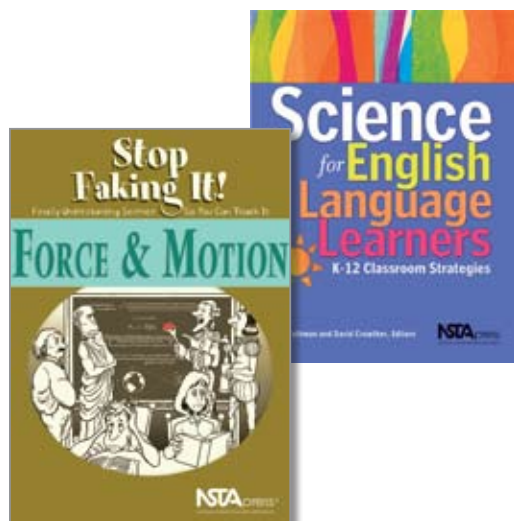
4:30–5:00 PM

Fostering Teacher Researcher Collaborations
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5:00–6:00 PM

Scaffolding Inquiry and Language for English Learners
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Laboratory Safety: Let It Be Written, Let It Be Done!
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T-8: Behind the Scenes at Audubon Aquarium of the Americas

Friday, March 20

	Presentations/Workshops	General Sessions/Special Events	Shell Seminars	Exhibitor Workshops
8:00 AM				
9:00 AM		<p>Featured Panel 8:30–9:30 AM Room 352, Conv. Ctr. Panelists: George “Pinky” Nelson, Jo Ellen Roseman, and F. James Rutherford</p>		
10:00 AM		<p>Featured Presentation 9:30–10:30 AM Room 243, Conv. Ctr. Speaker: William C. Deese</p>	<p>Shell Science Seminar 10:30 AM–12 Noon Room 352, Conv. Ctr. Speaker: Nancy N. Rabalais</p>	
11:00 AM				
12 Noon			<p>Shell Science Seminar 11:30 AM–1:00 PM Room 243, Conv. Ctr. Speaker: Ivor van Heerden</p>	
1:00 PM	<p>NSTA’s ESP Symposium I 1:00–2:00 PM Room 252, Conv. Ctr.</p>	<p>SCST Marjorie Gardner Lecture 12:30–1:30 PM Frontenac, JW Marriott Speaker: Nancy L. Elwess</p>		
2:00 PM	<p>NSTA’s ESP Symposium II 2:00–3:00 PM Room 252, Conv. Ctr.</p>		<p>Shell Science Seminars 1:30–3:00 PM Room 243, Conv. Ctr. Speaker: Thomas J. Carew</p> <p>Room 352, Conv. Ctr. Speaker: Michael Weiss</p>	
3:00 PM	<p>NSTA’s ESP Symposium III 3:00–4:00 PM Room 252, Conv. Ctr.</p>	<p>AGU Lecture 2:00–3:00 PM Room 244/245, Conv. Ctr. Speaker: Sadredin C. Moosavi</p>		
4:00 PM	<p>NSTA’s ESP Symposium IV 4:00–6:00 PM Room 252, Conv. Ctr.</p>	<p>Robert H. Carleton Lecture 3:30–4:30 PM Room 243, Conv. Ctr. Speaker: Bonnie J. Brunkhorst</p>		
5:00 PM				
6:00 PM				
7:00 PM		<p>Special Evening Session 6:00 PM–12 Midnight Elmwood, Hilton <i>A Stimulating Evening with Eight Extraordinary Scientists and Communicators of Science: Sagan, Bronowski, Gould, Miller, Morrison, Bartlett, Carson, and Herschbach</i></p>		
8:00 PM				

7:00–8:30 AM HIGH SCHOOL BREAKFAST

Louisiana’s No Man’s Land Is a Landscape of People

(Tickets Required; \$40)

M-3

Maurepas, Sheraton



Speaker

Don Davis

Administrator, Louisiana Applied and Educational
Oil Spill Research and Development Program
Louisiana State University
Baton Rouge, La.

Louisiana’s sea-level citizens have learned to live and adapt to subsidence, sea-level rise, hurricane-induced storm surges, and coastal land loss/erosion. These natural phenomena, compounded by engineering solutions, have created below-sea-level citizens in many cases. As a result, southern Louisiana’s geographic complex is a product of two distinct ingredients, one natural and the other cultural, or human. The natural ingredients are traditionally well studied and often self-evident. The cultural elements are not observed so easily. In reality, these cultural and/or social identifiers are often the foundation for the coastal zone’s importance as a productive environment. Consequently, the marshlands have supported a traditional way of life that has been maintained by local “marsh dwellers” for centuries. These marsh inhabitants developed a unique capacity to manage and benefit from the natural environment. The landscape is, therefore, more than its plants, sediments, and geology—it has meaning because people live at its edge and use it, shape it, and learn from it. It is a landscape of the people.

Dr. Don Davis is administrator of the Louisiana Applied and Educational Oil Spill Research and Development Program. His professional career has focused on investigating various human/land issues in Louisiana’s wetlands, and he has written or co-authored numerous papers on these topics. Currently he is involved in projects related to restoring Louisiana’s wetlands and to understanding the wide array of human impacts on Louisiana near sea-level wetlands.

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

7:00–8:30 AM NSTA DOROTHY K. CULBERT CAG BREAKFAST

(Tickets Required; \$40)

M-2

St. Charles (41st Floor), New Orleans Marriott

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

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

7:00–8:30 AM BREAKFAST

APAST Breakfast

(By Invitation Only)

Belle Chasse, Hilton

For additional information, visit www.apast.org.

7:00–9:00 AM MEETING

SEPA (Society of Elementary Presidential Awardees of Mathematics and Science) Meeting

(By Invitation Only)

Durham, Hilton

7:00–9:00 AM BREAKFAST

AMSE Alice Moses Breakfast

(By Invitation Only)

Rosedown, Hilton

7:00–10:00 AM MEETING

ASMC Networking Forum

(By Invitation Only)

Ile de France I, JW Marriott

ASMC's Networking Forum sustains people with a passion for instructional materials support. We share resources, exchange effective strategies, and make new friends! Interested? See www.kitsupport.org.

7:30–9:00 AM BREAKFAST

Breakfast with Tim Samaras

(By Invitation Only)

Compass, Hilton

Tim Samaras, The JASON Project's Operation: Monster Storms, Denver, Colo.

Tim Samaras logs about 30,000 miles each year searching for storms that are capable of producing the most violent weather on Earth. Tim's work has earned him a place as an Emerging Explorer with National Geographic, and Host Researcher for The JASON Project's Operation: Monster Storms. Visit www.jason.org for more information. This breakfast is sponsored by National Geographic, The JASON Project.

8:00–9:00 AM PRESENTATIONS

SESSION 1

Developing a Position Statement for Science and English Language Learners (ELL) **(Gen)**

(General)

Room 238, Convention Center

David T. Crowther (crowther@unr.edu), University of Nevada, Reno

Cindy Workosky, Communications Specialist, Legislative and Public Affairs, NSTA, Arlington, Va.

Pita Martinez-McDonald, NSTA Director, Preschool/Elementary, and Cuba (N.Mex.) Independent Schools

Deborah Maatta (*deborah.maatta@dc.gov*), District of Columbia Public Schools, Washington, D.C.

Pamela Christol, NSTA Director, District XIII, and Northeastern State University, Broken Arrow, Okla.

In response to a burgeoning ELL population, NSTA is currently developing an official position statement on Science and English Language Learners. This very important and timely statement deals with research, instruction, strategies, and programs that will guide the organization and inform policy and practice for years to come. Your input and experience is needed so please join members of the NSTA Position Statement Panel to view and give feedback on a draft position statement.

SESSION 2



Boston Public Schools: A Science Education Leadership Story —*Science Teaching—* **(Gen)**

(General)

Room 240/241, Convention Center

Pam Pelletier (*ppelletier@boston.k12.ma.us*) and **John F. Sheridan** (*jsheridan@boston.k12.ma.us*), Boston (Mass.) Public Schools

A panel of Boston Public School leadership administrators and teachers will share their history and experience in implementing active science learning in their district.

NSTA Chapters and Associated Groups Events

Friday, March 20th

Dorothy K. Culbert Chapters and Associated Groups Breakfast

7:00–8:30 AM

New Orleans Marriott

St. Charles

Ticket Required (M-2; \$40 on-site)

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

The Dr. Wendell G. Mohling Chapters and Associated Groups Reception

3:30–5:00 PM

New Orleans Marriott

La Galerie 6

By invitation only.

This fun-filled event permits chapters and associated groups leaders to recognize achievements and milestones. This event is graciously sponsored by ETA/Cuisenaire.





SESSION 3

ISTE: Emerging Technologies in the Science Classroom

(Gen)

(General)

Room 242, Convention Center

Ben Smith (ben@edtechinnovators.com), Red Lion Area High School, Red Lion, Pa.

Jared Mader (jared@edtechinnovators.com), Red Lion (Pa.) Area School District

Hands on! Web 2.0 provides many opportunities to transform the digital learning environment. Explore how to use the latest Web 2.0 tools, including Google Docs, del.icio.us, and more. Get involved from students' perspective.

SESSION 4

Science with Video Games —Science Teaching—

(Bio)

(Middle Level/Informal Education)

Room 254, Convention Center

Kerry Handron (handronk@carnegiemnh.org), Carnegie Museum of Natural History, Pittsburgh, Pa.

Carnegie Museum of Natural History is a partner in building virtual worlds with the content needed to explore scientific concepts. Students explore the space, both virtual and intellectual, by playing the game.

SESSION 5

Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-Up Session: Using i-Tree Software to Inventory Trees and Assess the Benefits and Services They Provide

(Env)

(High School)

Room 256, Convention Center

Dave Bloniarz, Urban Natural Resources Institute, Amherst, Mass.

Trees play a vital role in the carbon cycle. Use i-Tree to inventory school yard or community trees and calculate the benefits and services they provide.

SESSION 6

NIH Symposium Follow-Up Session: Exploring the Bioethics of Vaccination Policies —Science Content—

(Bio)

(High School)

Room 257, Convention Center

Dave Vannier (vannierd@od.nih.gov), National Institutes of Health, Bethesda, Md.

Explore the science and bioethics of school vaccination policies. Fairness and respect are presented in a new model for teaching bioethics in high school.

SESSION 7



LHS Pathway Session: Integrating Sustainability into the Science Classroom —Science Content—

(Gen)

(Middle Level–High School)

Room 337, Convention Center

John Howarth (john_howarth@berkeley.edu), Lawrence Hall of Science, University of California, Berkeley

Issues related to sustainability affect everyone and impact every discipline. Experience how these issues make science come alive in the classroom.

SESSION 8



FHL Pathway Session: After-School Science for Kids

(Gen)

(General)

Room 338, Convention Center

Dianne Johnson, First Hand Learning, Buffalo, N.Y.

Let me introduce you to a citywide collaboration to support teens in leading younger students in after-school science experiences connected to their school science curriculum.

This program is a collaboration between an urban Boys & Girls Club, a school district, and a nonprofit organization.

SESSION 9

PDI

WestEd Pathway Session: Lesson Study as a Professional Learning Community: The Teaching Learning Collaborative (TLC) —Professional Development— (Gen)
(General) Room 341, Convention Center

Karen Cerwin (kcerwin@wested.org) and **David Harris** (dharris5@earthlink.net), WestEd, Santa Ana, Calif.

Take the guesswork out of lesson design! Learn how TLC helps teachers use evidence to make collaborative decisions about student learning.

SESSION 10 (two presentations)

(Elementary–Middle Level)

Room 344, Convention Center

Capturing Students' Interest in the Nature of Science Through Discrepant Events —Science Teaching— (Gen)

Michelle Watson, Honea Path Middle School, Honea Path, S.C.

Learn how discrepant event demonstrations can be used as a vehicle for students to design experiments and discover the nature of science.

Mysteries and Antiquities: Process Skills in Archaeological Inquiry —Science Teaching— (Gen)

Kristin A. Harms (geochick@charter.net), Seneca Middle School, Seneca, S.C.

Discover an innovative way to introduce students to scientific inquiry and process skills—a three-week archaeology unit where students excavate artifacts and interpret the unknown.

SESSION 11 (two presentations)

(Elementary–Middle Level/Informal Education)

Room 345, Convention Center

Presenter: **Stacie L. Koerth** (skoerth@austinisd.org), Webb Middle School, Austin, Tex.

Acting Like a Scientist in an Urban Setting —Science Teaching— (Gen)

Stacie L. Koerth (skoerth@austinisd.org), Webb Middle School, Austin, Tex.

Get students from low-income schools to stop being passive about learning and become active and involved in the science process through research and hands-on techniques. We did it and so can you.

Students Who Choose to Study Science: Diversity and Informal Learning (Gen)

Karen S. Sullenger, University of New Brunswick, Fredericton, N.B., Canada

Danny R. Marmen (daniel.marmen@nbed.nb.ca), School District 8, St. John, N.B., Canada

We'll share two extra-school programs—one for elementary and one for middle school students—and discuss the diversity of students who choose to participate.

SESSION 12

PDI

McREL Pathway Session: Student-designed Experiments —Science Content— (Gen)

(General)

Room 346, Convention Center

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

Can your students design their own experiments? Learn about experimental design diagrams

to help students plan experiments that will help them understand the science concepts. Handouts provided.

SESSION 13

Exploring Winter Ecology with Elementary Students —*Science Teaching*—

(Gen)

(Elementary–Middle Level)

Room 351, Convention Center

Luke Diekhans (luke_diekhans@gfps.k12.mt.us) and **Beth Thomas** (beth_thomas@gfps.k12.mt.us), Great Falls (Mont.) Public Schools

Steve Schaller, Lewis and Clark Interpretive Center, Great Falls, Mont.

See how we designed, implemented, and funded this inquiry-based winter outdoor classroom through collaboration with NOAA, the National Forest Service, and the Montana Fish, Wildlife, and Parks. Handouts provided.

SESSION 14

CSI: An Interactive Website for Forensics —*Science Teaching*—

(Chem)

(Middle Level)

Room 353, Convention Center

Leslie Miller, Rice University, Houston, Tex.

Lynn Lauterbach, Loveland, Colo.

Want to understand a DNA profile, toxicology, ballistics, and an autopsy? Come experience a free website developed with CBS and the American Academy of Forensic Science.

SESSION 15

Enhancing Science Instruction and Literacy with Quality Nonfiction Trade Books, Related Resources, and Investigations —*Science Content*—

(Gen)

(Elementary)

Room 355, Convention Center

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

Let's look at the advantages of using nonfiction trade books to teach and enhance K–6 science, highlighting top-quality books, related resources, and technology, and examining opportunities that follow naturally from these print and technology resources.

SESSION 16

Opening the Gateway: Teaching Digital Natives Using an Integrated Approach —*Science Teaching*—

(Phys)

(Middle Level)

Room 357, Convention Center

Beth Zigmont and **Andy Achenbach**, Radnor Middle School, Wayne, Pa.

Learn how to develop a themed, multidisciplinary program that immerses students in a science- and technology-rich environment that represents STEM education at its best.

SESSION 17

The Teacher and Child as Researchers: A Co-Constructivist Approach to Preschool Science Learning —*Professional Development*—

(Bio)

(Preschool)

Room R01, Convention Center

Susan C. Wood (susan.wood@caltech.edu), The Children's Center at Caltech, Pasadena, Calif.

Judy Cashell, Center for Community and Family Services, Altadena, Calif.

Presider: Judy Cashell

Working with community resources, two uniquely different preschool programs form a collaboration to examine how children and teachers co-construct meaning through science.

SESSION 18


Using Humor to Enhance Scientific Literacy —*Science Teaching*— (Gen)
*(General)**Room R02, Convention Center*
Susan L. Clay (*suzieclay@aol.com*), Maple Heights High School, Maple Heights, Ohio

Diana M. Hunn (*diana.hunn@notes.udayton.edu*), University of Dayton, Ohio

Humor can help improve student reading skills, attention to detail, and creative capacity.

We'll share supporting research and numerous examples.

SESSION 19

Teaching Climate Change in the Elementary Classroom —*Science Content*—
(Gen)*(Elementary)**Room R04, Convention Center*
Bruce L. Larson (*blarson@sau16.org*), Stratham Memorial School, Stratham, N.H.

 Presider: Joanna Hubbard (*hubbard_joanna@asdk12.org*), Anchorage (Alaska) School District

Explore developmentally appropriate ways to incorporate current research on climate change in grades 2–5 classrooms. We'll look at activities and curricula relating to climate, explore some simple tools for studying climate in your school, and examine appropriate trade books.

NSTA Student Member Events

Thursday, March 19

De-cookbooking Science Activities: A Recipe for Success

9:30–10:30 AM

 New Orleans Marriott
Bissonet

NSTA Student Chapter Session: Becoming a Leader in the Profession

12:30–1:30 PM

 JW Marriott New Orleans
Ile de France III

Getting Connected: NSTA Student Chapter ITV Meetings

3:30–4:30 PM

 New Orleans Marriott
Mardi Gras A/B

Friday, March 20

NSTA Student Chapter Faculty Advisor Roundtable

8:00–9:00 AM

 JW Marriott New Orleans
Ile de France II

NSTA Student Chapter Action Session

9:30–10:30 AM

 JW Marriott New Orleans
Ile de France II

Motivating College Students to Be Science Teachers:
Starting an NSTA Student Chapter

11:00 AM–12 Noon

 JW Marriott New Orleans
Ile de France II

Saturday, March 21

Starting an NSTA Student Chapter: Student and Faculty Perspectives

9:30–10:30 AM

 New Orleans Marriott
Jackson

SESSION 20

How Urban Children Construct Their Concepts of Ecosystems: A Long-Term Field-based Study of a Salt Marsh —Science Teaching— (Env)

(Preschool/Elementary)

Room R05, Convention Center

Susan Wu (swu@bankstreet.edu), Bank Street College of Education, New York, N.Y.

This inquiry-based marsh study integrates interdisciplinary classroom work and outdoor hands-on investigations.

SESSION 21

Get Parents Involved in the Classroom! —Science Education Program— (Gen)

(Elementary)

Room R06, Convention Center

Susan F. Pearlman (pearlman@siu.edu), Southern Illinois University, Carbondale

Mary-Margaret (Harrington) Kantor (marymargaret.kantor@nkcinc.com), Nobel Learning Communities, Chesterbrook Academy at Birkdale, Huntersville, N.C.

Jackie L. Palka (jpalka@ebrps.k12.la.us), East Baton Rouge Parish Schools, Baton Rouge, La.

Presider: Susan F. Pearlman

Using parent volunteers as classroom science aides benefits teachers, children, and parents.

Learn how to recruit, train, and use parent volunteers for maximum effectiveness.

SESSION 22

Solids: The Neglected “State” of Chemistry —Science Content— (Chem)

(Middle Level–High School)

Room R07, Convention Center

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

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

Use the “stuff” of the everyday world to make science relevant. Hands-on activities using solid materials (ceramics, metals, polymers) make concepts easier to teach and learn. Handouts.

SESSION 23

Using Digital Media in the Science Classroom —Assessment— (Gen)

(General)

Ascot, Hilton

Joel Gluck (jglucl@aol.com), **Jackie FitzGerald** (jfitzgerald@cpsed.net), and **John Santangelo** (jsantangelo13@verizon.net), NEL/CPS Construction Career Academy, Cranston, R.I.

This session will focus on FREE software available to teachers that allows students to make multimedia movies. Leave with ideas for Monday morning!

SESSION 24

Models of Nanoscale Phenomena: Seeing What We Can’t See —Science Teaching— (Gen)

(General)

Magnolia, Hilton

Shanna R. Daly (sdaly@purdue.edu), **Lynn A. Bryan** (labryan@purdue.edu), **Kelly M. Hutchinson** (khutchin@purdue.edu), **David Sederberg** (dsederbe@purdue.edu), and **Emily D. Wischow** (ewischow@purdue.edu), Purdue University, West Lafayette, Ind.

Investigate the nanoworld with models that represent nanoscale phenomena, such as self-assembly and microscopy.

SESSION 25**Using the Superpower of Rap Music to Teach Science —Professional Development—** (Gen)

(General)

Versailles Ballroom, Hilton

Tyraine D. Ragsdale (*grandhank@aol.com*), Grand Hank Consulting, Philadelphia, Pa.

This high-energy program links hands-on demonstrations with scientific theory through the use of hip-hop music. The program is guaranteed to interest and engage even the most difficult student.

SESSION 26**Building Partnerships to Improve Teacher Quality and Student Outcomes: The Cleveland Math and Science Partnership —Professional Development—** (Gen)

(General)

Conde, JW Marriott

Bill Badders (*baddersw@cmsdnet.net*), Cleveland (Ohio) Metropolitan School District**Julie Gielow** (*julie.a.gielow@cmsdnet.net*), H.B. Booker K–8 Academy, Cleveland, Ohio

The Cleveland Metropolitan School District, with funding from the National Science Foundation, has developed and sustained a partnership with John Carroll University, Cleveland State University, Case Western Reserve University, and the Education Development Center that is focused on improving teacher quality through rigorous university coursework and a content-based mentoring program for middle and high school teachers. We'll share lessons learned on developing partnerships and the impact on teachers, university faculty, and students after six years of the project.

SESSION 27 (three presentations)

(College)

Frontenac, JW Marriott

SCST Session: Inquiry Physics Learning + Service = Service Learning —Science Teaching— (Phys)**Nancy L. Donaldson** (*nancy.donaldson@rockhurst.edu*), Rockhurst University, Kansas City, Mo.

I will describe a service learning physics program in which introductory college physics students conduct inquiry physics labs with an urban, high-needs high school.

SCST Session: Making Teaching More Scientific: Evidence Shows the Use of Real-World Research Data Improves Student Learning —Science Content— (Bio)**Jacqueline S. McLaughlin** (*jshea@psu.edu*), Penn State Lehigh Valley, Fogelsville, Pa.

Three Pennsylvania high schools analyzed the actual degree to which the CHANCE “research modules” exceed student learning beyond text-based instruction. I'll present assessment data from this research.

SCST Session: Rockin' 'n' Rollin' in New York City—How This City Is Influenced by the Earth Sciences (Gen)**Heide Hlawaty**, Metropolitan College of New York, N.Y.

I will use problem solving to teach this thematic course. Units include Definition of Catastrophe, Science & Scientific Discussion, Is Geography Destiny?, Resources and Politics, and Food Crisis & Climate Change.

SESSION 28

NSTA Student Chapter Faculty Advisor Roundtable —Professional Development— **(Gen)**

(General)

Ile de France II, JW Marriott

Tom Lough (tom.lough@coe.murraystate.edu) and **Meagan Musselman**, Murray State University, Murray, Ky.

Matthew J. Maurer (maurerm@rmu.edu), Robert Morris University, Moon Township, Pa.

James T. McDonald (jim.mcdonald@cmich.edu), Central Michigan University, Mount Pleasant

Are you an NSTA student chapter faculty advisor? Join us to meet counterparts, share information, explore solutions to common problems, and plan for the future!

SESSION 29

AP Biology Teachers' Open Forum —Science Teaching— **(Bio)**

(High School–College)

Maurepas, JW Marriott

John Lepri (jjlepri@uncg.edu), University of North Carolina at Greensboro

Franklin Bell (bellf@mercersburg.edu), Mercersburg Academy, Mercersburg, Pa.

Join other AP Biology teachers and members of the AP Biology Test Development Committee for a discussion of the 2008 exam, the redesign, and other issues and concerns.

SESSION 30

Professional Development Providers: What You Should Know and Be Able to Do, Part 1 —Professional Development— **(Gen)**

(General)

Rosalie, JW Marriott

Gwen Pollock (gpollock@casscomm.com), NSTA Director, Professional Development, and Science Consultant, Sherman, Ill.

Are you adding to or deepening professional development in your repertoire? The NSTA Professional Development committee will provide insight to boost confidence, best-practice quality, and national coherence. See page 54 for part 2.

SESSION 31

An Arctic Voyage Onboard the CCGS Amundsen —Professional Development— **(Env)**

(Elementary–High School)

Bonaparte, New Orleans Marriott

Jason J. Pavlich (jpavlich@rhcsd.org), Red Hook (N.Y.) Central School District

Caitlin H. Munroe, Manaugh Elementary School, Cortez, Colo.

Two educators will share their Arctic research experiences onboard a Canadian Coast Guard icebreaker and how they brought this adventure back to their students.

SESSION 32

Informal Science Day Session: Science in After-School Programs —Science Education System— **(Gen)**

(General)

Carondelet/Group 1, New Orleans Marriott

Jason S. Freeman (scienceafterschool@gmail.com), Coalition for Science After School, Berkeley, Calif.

Presider: Maryann Stimmer, Educational Equity Center at AED, New York, N.Y.

Representatives from the after-school field will share their perspectives regarding growing efforts to provide meaningful science learning experiences through after-school programs.

SESSION 33

Informal Science Day Session: A Celebration of the 2009 International Year of Astronomy! —Science Content— (Earth)

(General)

Carondelet/Group 2, New Orleans Marriott

Janice Harvey (jharvey@gemini.edu), Gemini Observatory, Hilo, Hawaii

Dennis Schatz (schatz@pacsci.org), Pacific Science Center, Seattle, Wash.

Constance E. Walker (cwalker@astronomy2009.us) and **Robert Sparks**, National Optical Astronomy Observatory, Tucson, Ariz.

Presider: Terri Stern, Yale Peabody Museum of Natural History, New Haven, Conn.

In the year 2009 the world will celebrate the International Year of Astronomy. This panel of astronomy education experts will share classroom, national, and international educational activities planned for the celebration.

SESSION 34

Informal Science Day Session: Content on the Go: Science Education Podcasting —Science Teaching— (Gen)

(General)

Carondelet/Group 3, New Orleans Marriott

Susan Q. Foster (susanf@ucar.edu), University Corporation for Atmospheric Research, Boulder, Colo.


Robert P. Payo (rpayo@ucar.edu), The National Science Digital Library, Boulder, Colo.

Howard Lurie (howard_lurie@wgbh.org), WGBH Teachers' Domain, Boston, Mass.



Meet the Challenges of the Evolving Classroom!

The world is changing...and so are your classrooms. Come see how Disney Educational Productions can help you meet the challenges of the evolving classroom with innovative workshops hosted by our team of educational experts and leading academic advisors.

-  • Take part in the **Safety Smart® Superchallenge**
-  • **Solve for X with Bill Nye the Science Guy®**
- Watch the Walt Disney Imagineers mix imagination and engineering to create world-class attractions
- And much more!

Friday, March 20th
9:00 am – 5:00 pm

For a complete schedule events, visit our satellite location in booth #303.



Friday ONLY!



(800) 295-5010 www.DisneyEducation.com
 © Disney

Sherry Hsi (sherryh@exploratorium.edu), The Exploratorium, San Francisco, Calif.

Learn about new efforts from museums, public broadcasting, and other informal learning providers to offer educational multimedia content for portable devices and on-demand desktop viewing.

SESSION 35

Formative Assessment Strategies for Decision Making —Assessment— (Gen)
(Supervision/Administration) *Jackson, New Orleans Marriott*

Joseph Jesunathadas, California State University, San Bernardino

These strategies will enhance your understanding regarding students' reasoning and the quality of your own teaching and assessment. Modern assessment tools will be demonstrated.

SESSION 36

CSSS Session: Chemical-safe Schools—A Federal, State, and Local Perspective —Science Education System— (Chem)

(Elementary–High School)

Regent, New Orleans Marriott

Peter J. McLaren (peter.mclaren@ride.ri.gov), Rhode Island Dept. of Elementary and Secondary Education, Providence

Individuals from the federal government (U.S. EPA), state government (Department of Education, Health, and Environmental Management), and academia (college/university) will share their perspectives on how to improve chemical management in schools in order to reduce the chance of finding your school involved in chemical mismanagement.

SESSION 37 (two presentations)

(Middle Level–High School)

Bayside A, Sheraton

Sticky Notes and Student Identification of Variables in Science Investigations —Science Teaching— (Gen)

Malcolm S. Cheney (cheneymac@comcast.net), Retired Educator, Windsor, Conn.

Using colored sticky notes to distinguish between independent and dependent variables helps all students learn to structure a controlled scientific investigation and to write a complete report.

Using White Boards to Promote Student Discourse and Learning —Science Teaching— (Gen)

Charles H. Sabatier (charles.sabatier@fcps.edu), Mount Vernon High School, Alexandria, Va.

Mary Lee McJimsey (marymc@spokaneschools.org), North Central High School, Spokane, Wash.

Learn how to use white boards as tools to encourage students to interact with each other and promote concept development in creative and meaningful ways.

SESSION 38

Multimedia Tools to Engage and Inspire the Digital Student —Science Teaching— (Gen)

(Middle Level–High School)

Edgewood A/B, Sheraton

Sarita Pillai and **Kimberly Lucas**, Education Development Center, Inc., Newton, Mass.

We'll share several cutting-edge multimedia STEM resources for the classroom and beyond—resources designed for (and by) middle and high school students.

SESSION 39

Podcasting from the Schoolyard: Helping Our Students Become Planetary Citizens —Science Teaching— (Env)*(General)**Napoleon A3, Sheraton*

Kimber Hershberger (*khm12@scasd.org*), **Judi Kur** (*jjk11@scasd.org*), **Kelly Parks**, and **Corey Huber** (*cnh13@scasd.org*), Radio Park Elementary School, State College, Pa.

Jennifer Gruba (*jdj15@scasd.org*), State College (Pa.) Area School District

In this multi-age project, students observe climate changes in the schoolyard and report the results through news sessions and podcasts.

SESSION 40

Space Exploration as a STEM Curriculum —Science Teaching— (Earth)*(Middle Level–High School)**Napoleon B3, Sheraton*

David D. Thornburg (*dthornburg@aol.com*), **Norma Thornburg** (*normathornburg@aol.com*), **Bonnie Bracey Sutton**, and **Vic Sutton** (*vsutton@hotmail.co.uk*), Thornburg Center for Space Exploration, Lake Barrington, Ill.

Presider: David D. Thornburg

Supported by an extensive library of computer-based resources from NASA, we will outline an approach for addressing STEM skills in an integrated fashion using student projects and inquiry.

SESSION 41 (two presentations)

*(General)**Napoleon C1, Sheraton***Real-Time Graphing and Modeling: The NASA Kepler Mission’s Method of Finding Planets —Science Content— (Earth)**

Alan Gould (*agould@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

The NASA Kepler mission is designed to discover Earth-sized planets in habitable zones of other stars. Learn classroom activities that model this discovery technique.

How We Created a Constitution for a Martian Colony —Science Content—**(Earth)**

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

Using technology, government, and astronomy, teachers collaborated within an academy setting to create an interdisciplinary project that uses project- and standards-based learning.

SESSION 42

Using Available Classroom Technology to Extend and Enhance Offsite Field and Peak Experiences —Science Content— (Bio)*(Elementary–High School)**Napoleon D3, Sheraton*

Justine F. Glynn (*justine@gmri.org*), Gulf of Maine Research Institute, Portland

Doug Caldwell (*dcaldwel@maine.rr.com*), Dora Small School, South Portland, Maine

We’ll share curriculum materials (digital and paper) promoting students’ critical thinking and ICT literacy that extend a technology-rich experience in the field into a yearlong, standards-aligned unit using readily available technology.

SESSION 43 (two presentations)

(Middle Level–High School)

Rhythms I, Sheraton

Presider: Evelyn B. Lacanienta, Seabury Hall, Makawao, Hawaii

Teacher Perceptions of an Inquiry Unit on Evolution —Science Content— (Bio)

Lara B. Pacifici (*lpacific@uga.edu*) and **Norman Thomson** (*nthomson@uga.edu*), University of Georgia, Athens

Teachers who had incorporated an inquiry unit on evolution into their classroom were interviewed to elicit feedback and perceptions on evolution and inquiry.

“DRAWING” Conclusions in Science —Science Content—

(Bio)

Sherri Garcia (*sgarcia@seaburyhall.org*) **Evelyn B. Lacanienta**, and **Kate Ireland** (*kireland@seaburyhall.org*), Seabury Hall, Makawao, Hawaii

Unleash the creativity in your students by allowing them to physically “draw” their conclusions in science class. We’ll share lessons in botany, animals, anatomy, and chemistry.

SESSION 44

Simple Experiments on Reaction Rates —Professional Development— (Chem)

(High School)

Salons 817 & 821, Sheraton

Clifford Sampson, Appleby College, Oakville, Ont., Canada

Come explore the chromic acid oxidation of alcohol and the fading of phenolphthalein in base. We’ll follow reactions using colorimetry and a computer interface.

SESSION 45

The Impact of Digital Science Gamings on Student Achievement —Science Content—

(Phys)

(Middle Level–High School)

Salons 825 & 829, Sheraton

Kim V. Robinson (*march2@swbell.net*), North Middle School, St. Louis, Mo.

Tiffany Fane (*tcfane@yahoo.com*), East Middle School, St. Louis, Mo.

We’ll examine how playing and designing prototypes of science digital games that meet science standards impact student achievement.

SESSION 46

Introducing STEM Careers Through Online Multimedia Resources —Science Content—

(Gen)

(Informal Education)

Salon 828, Sheraton

Lois M. McLean (*stem@storyline.com*) and **Rick Tessman** (*rt@storyline.com*), McLean Media, Grass Valley, Calif.

Colleen M. McLinn (*cmm252@cornell.edu*), Cornell University, Ithaca, N.Y.

Can vibrant personal stories about scientists attract the digital generation to STEM careers? Explore online resources and ways to use them as interactive teaching objects.

8:00–9:00 AM WORKSHOPS



Climate Change Data Here and There —Science Content—

(Earth)

(Middle Level–High School)

Room 239, Convention Center

Myrna L. Hall (*myrna.hall@ocps.net*), Bridgewater Middle School, Winter Garden, Fla.

Presider: Mary-Lynn Jensen, Education Consultant, Orlando, Fla.

Interpret climate data table information using inquiry-based strategies, and then compare and contrast the data for different parts of the United States.

National Earth Science Teachers Association



Events at New Orleans NSTA 2009

All events located in the New Orleans Marriott (555 Canal St.)
Bissonet Room unless otherwise noted.

Friday March 20

- 9:30** • NESTA Geology Share-a-Thon
- 11:00** • NESTA Oceans and Atmospheres Share-a-Thon
- 12:30** • NESTA Space Science Share-a-Thon
- 2:00** • American Geophysical Union Lecture!
The Grand Isle Project - Using Service Learning to Generate Genuine Scientific Experiences for Students While Serving Society
Dr. Sadredin C. Moosavi, Tulane University
Morial Convention Center Room 244/245
- 6:30** • NESTA Friends of Earth Science Reception
La Galerie 6

Saturday March 21

NESTA Earth and Space Science Resource Day: Natural Hazards and the Environment

- 7:00** • NESTA Resource Day Breakfast
LSU Coastal Roots Program
Dr. Pamela Blanchard, LSU
New Orleans Marriott, Bacchus Room
Purchase tickets (\$38) by March 18 online
at <http://www.nestanet.org>.
- 9:30** • NESTA Natural Hazards and the Environment Share-a-Thon
- 11:00** • ***Environmental Issues Associated with Katrina***
Dr. Bob Thomas, Loyola University of New Orleans
- 12:30** • ***Coastal Louisiana in a World of Global Change***
Dr. Torbjörn E. Törnqvist, Tulane University
- 2:00** • ***Geologic Processes of Coastal Louisiana & the Impacts of Hurricanes: Can New Orleans Survive?***
Dr. Randolph McBride, George Mason University
- 3:00** • NESTA Rock and Mineral Raffle
- 4:30** • NESTA Membership Meeting



These events are cosponsored by the American Geophysical Union,
Carolina Biological Supply, UCAR, and Windows to the Universe.

Great Science, Cheap! —Science Content— **(Chem)**
(Elementary–Middle Level) *Room 252, Convention Center*

Lynn Hogue (*hoguelm@muohio.edu*), Miami University, Middletown, Ohio
These inexpensive activities convey science concepts and great pedagogy while using common objects as scientific tools. As a bonus, familiar and user-friendly objects help students understand that science is always a part of their world.

Using Outdoor Inquiry to Promote Stewardship: Bridging Classroom and Environment —Science Teaching— **(Env)**
(Middle Level) *Room 253, Convention Center*

Joanna Snyder (*joanna-snyder@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley
Presider: Larry Malone, Lawrence Hall of Science, University of California, Berkeley
These activities and strategies make it easy for teachers to use the immediate outdoor environment for applying and enriching concepts taught in the classroom. I'll share sample teaching resources.

Teaching Tools That Work! —Professional Development— **(Gen)**
(Elementary–Middle Level) *Room 343, Convention Center*

Susan Talkmitt (*susan.talkmitt@ttu.edu*) and **Beccy Hambright** (*beccy.hambright@ttu.edu*), Texas Tech University, Lubbock
Having trouble getting students to own concepts? Engage in powerful teaching strategies that seem like games but actually promote critical-thinking skills while building concepts.

Inquiring into Fossils —Science Content— **(Earth)**
(Elementary–Middle Level) *Room 356, Convention Center*

Reeda L. Hart and **Thomas Brackman** (*brackmant1@nku.edu*), Northern Kentucky University, Highland Heights
Presider: Betty Stephens, Northern Kentucky University, Highland Heights
We'll take you right into geologic time using inquiry techniques. Identify the types of rocks that contain fossils, explore the organisms that represent the once living fossils, and experience how the fossils were formed. Free CD with lesson plans, PowerPoints, and earth science games.

Animating with Mechanisms —Science Teaching— **(Phys)**
(Elementary) *Room R03, Convention Center*

James L. Neujahr (*jneujahr@ccny.cuny.edu*), City College of New York, N.Y.
Travis Sloane (*tsloane@schools.nyc.gov*), P.S. 163, Alfred E. Smith School, New York, N.Y.
Christina Franke (*christinafranke@earthlink.net*), P.S. 369K Coy L. Cox School, Brooklyn, N.Y.
Come “mess around” with linkage systems and then model, invent, and construct moving creatures from cardboard using principles of first-, second-, and third-class levers.

Science Models: Connecting Hands On to Minds On —Science Content— **(Gen)**
(Elementary–High School) *Oak Alley, Hilton*

Susan A. Everett (*everetts@umd.umich.edu*) and **Charlotte A. Otto** (*cotto@umd.umich.edu*), University of Michigan-Dearborn
Come develop a definition of a scientific model by building and critiquing a model using Venn diagrams and T-charts.

SEPA: We Want You to Become a Presidential Awardee**(Gen)***(General)**Windsor, Hilton***Kathleen B. Horstmeyer**, Chester, Conn.**Kathy Chandler** (*kcbama@aol.com*), Judson College, Marion, Ala.

Two Presidential Awardees will guide you through the application process and share tips on completing a successful application. Becoming a Presidential Awardee helps you open endless doors of opportunities.

Teaching Hemoglobin—From Gene and Protein to Oxygen Transport and Sickle Cell Anemia —Science Content—**(Bio)***(High School–College)**Ile de France III, JW Marriott***Tim Herman** (*herman@msoe.edu*), **Shannon Colton** (*colton@msoe.edu*), **Margaret**

Franzen (*franzen@msoe.edu*), **Karen DeBoer** (*deboerk@kmsd.edu*), and **Mark Hoelzer** (*hoelzer@msoe.edu*), Center for BioMolecular Modeling, Milwaukee School of Engineering, Milwaukee, Wis.

We will use physical models of the beta globin protein and its gene and interactive computer tutorials to explore the structure/function of this important protein.

Informal Science Day Session: 4-H SET: One Million New Scientists, One Million New Ideas —Science Content—**(Env)***(Informal Education)**Carondelet/Group 4, New Orleans Marriott***Kathleen Jamison** (*kjamison@fourhcouncil.edu*), **Tara Maloney**, and **Nancy Schaff**,

National 4-H Council, Chevy Chase, Md.

Discover new avenues for university partnerships while experiencing hands-on activities designed to engage youth, stimulate questions, provide hands-on exploration, and foster a caring and safe environment.

Introducing Students to Remote-sensing Technology for Monitoring Earth Environments —Science Content—**(Env)***(General)**La Galerie 5, New Orleans Marriott***Dennis L. Skelton** (*dskelton1@isugw.indstate.edu*), **Paul Mausel** (*pmausel@isugw.indstate.edu*), and **Vijay Lulla**, Indiana State University, Terre Haute

Discover an interactive NASA-sponsored website that aids in the instruction and use of multispectral image data for the monitoring of Earth environments.

**A Head Start on Science —Science Education Program—****(Gen)***(Preschool/Elementary)**La Galerie 6, New Orleans Marriott***William C. Ritz** (*wcritz@csulb.edu*), California State University, Long Beach

A national project has developed activities to help teachers bring “sense of wonder” science to young learners. I will share activities that engage preK–3 children in the exciting science of their everyday world.

Interactive Simulations and Hands-On Activities Across the Earth and Space Sciences —Science Content—**(Earth)***(Informal Education)**Bayside C, Sheraton*

Randy M. Russell, **Becca Hatheway**, **Lisa Gardiner**, and **Sandra Henderson**, University Corporation for Atmospheric Research, Boulder, Colo.

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

We will demonstrate free interactive simulations from various earth and space science

disciplines along with companion hands-on activities and online background resources. Handouts.

Scintillating Science: The Alphabet Soup of Genetics —Science Content— (Bio)

(Middle Level–High School)

Napoleon A1&2, Sheraton

Deanne Erdmann (derdmann@bcm.edu), **Tadzia Grandpre** (grandpre@bcm.edu), and **Ron McNeel** (rmcneel2@sbcglobal.net), Baylor College of Medicine, Houston, Tex.

Learn about current, exciting, and important developments in genetics that will help you and your students enter the genomic age.

Using Assessment to Improve Learning: Effective Marking —Professional Development— (Gen)

(High School)

Napoleon B2, Sheraton

Douglas A. Buchanan (dbucha5913@aol.com), University of Edinburgh, Scotland

Explore best practice in formative assessment and ways for teachers to mark less and have students learn more.

Bringing the Earth and Sky Indoors with Google Earth —Science Teaching— (Earth)

(General)

Napoleon C2, Sheraton

Tina S. Ornduff (tinao@google.com), Google, Mountain View, Calif.

Learn how to use Google Earth and Sky to teach science and astronomy.

Why Can't Scientists Predict Earthquakes? —Professional Development— (Earth)

(Middle Level–High School)

Napoleon C3, Sheraton

John Taber (taber@iris.edu), IRIS Consortium, Washington, D.C.

Michael Wyession (michael@wucore.wustl.edu), Washington University in St. Louis, Mo.

Explore the issues surrounding earthquake prediction with your students through an activity that allows students to examine the rates of earthquake occurrences around the world.

Quantitative Reasoning in Biology —Science Content— (Bio)

(Middle Level–High School)

Rhythms II, Sheraton

David R. Stronck (david.stronck@csueastbay.edu), California State University-East Bay, Hayward

Biologists analyze data to show risks of diseases, probability in genetics, and sampling procedures for populations. These classroom simulations use dice, playing cards, and peas.

Oh, Me! Oh, My! Mitosis and Meiosis! —Science Content— (Bio)

(Elementary–High School)

Rhythms III, Sheraton

Cindi Smith-Walters (csmithwa@mtsu.edu) and **Kim Cleary Sadler** (ksadler@mtsu.edu), Middle Tennessee State University, Murfreesboro

Carice Ambruster (creecre@hotmail.com), Wilson County Schools, Lebanon, Tenn.

Need a novel, low-cost, and engaging set of activities to teach the steps of cell division? We've got it. Join us for a hands-on workshop and a free M&M kit!

8:00–9:00 AM EXHIBITOR WORKSHOPS

Active Physical Science**(Phys)***(Grades 6–9)**Room 212, Convention Center*

Sponsor: It's About Time

Mary Lynn Jensen, It's About Time, Armonk, N.Y.

Struggling with how to motivate students in your physical science course? We have an answer! Active Physics® and Active Chemistry™ are two proven programs that have been combined to form a core physical science course. Nine physics chapters have been chosen from the *CoreSelect* text, plus three *Active Chemistry* chapters. Explore the program during this hands-on workshop.

Tough Topics in Middle School Science: Earth Science —Science Teaching—**(Earth)***(Grades 6–8)**Room 218, Convention Center*

Sponsor: PASCO Scientific

Tess Ewart, A.I. Root Middle School, Medina, Ohio

Explore PASCO's state-of-the-art science solutions to tough topics in middle school earth science. Participate in standards-based probeware lab activities from PASCO's new middle school curriculum. See how the SPARK Science Learning System can change your teaching practice and improve student understanding of core topics.

Tough Topics in Chemistry: States of Matter —Science Teaching—**(Chem)***(Grades 6–12)**Room 219, Convention Center*

Sponsor: PASCO Scientific

Angela Hill, Blythewood High School, Blythewood, S.C.

We'll explore PASCO's state-of-the-art science teaching solutions to one of the toughest topics in chemistry—states of matter. Participate in standards-based probeware lab activities from PASCO's new chemistry curriculum. See how the SPARK Science Learning System can change your teaching practice and improve student understanding of core topics.

Bio-Rad Genes in a Bottle™ Kit —Science Teaching—**(Bio)***(Grades 6–10)**Room 230, Convention Center*

Sponsor: Bio-Rad Laboratories

Stan Hitomi (*professional_development@bio-rad.com*) and **Kirk Brown** (*professional_development@bio-rad.com*), Bio-Rad Laboratories, Hercules, Calif.

Can I see your DNA? Introduce your students to molecular biology with their own DNA. In this hands-on workshop you will extract DNA from your own cheek cells and then watch it precipitate. Bring only your imagination and take home your own DNA—in a necklace!

8:00–9:15 AM EXHIBITOR WORKSHOP

Put Some Spark into Science Investigations —Science Content—**(Gen)***(Grades 3–8)**Room 208, Convention Center*

Sponsor: Delta Education/School Specialty Science

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

Using the science topics of magnetism and electricity, learn how to turn guided investigations into challenge investigations and open inquiries. These strategies will help your students

become independent thinkers and inquirers. Participants will receive a complimentary resource packet and related Delta products.

8:00–9:30 AM PRESENTATION

SESSION 1

PDI

NGS Pathway Session: Connecting Students to Real-World Science Issues with National Geographic's Online Resources —*Science Content*— **(Gen)**

(General)

Room 347, Convention Center

Patricia Norris (pnorris@ngs.org) and **Mary Crooks** (mcrooks@ngs.org), National Geographic Society, Washington, D.C.

Learn how to leverage National Geographic's renowned research, exploration, and media resources to engage students in real-world applications of scientific investigation.

8:00–9:30 AM EXHIBITOR WORKSHOPS

Science Kit Presents: Hands-On Activities with a Hydrogen Fuel Cell Car

(Gen)

(Grades 7–12)

Room 202, Convention Center

Sponsor: Science Kit & Boreal Laboratories

Brian Herrin, Retired Educator, Rochester, N.Y.

Fuel cell technology is gaining importance as an emerging source of energy, and it's a great way to teach students about the fundamental principles of chemistry and physics. In this workshop participants will learn the science behind fuel cells while performing an experiment with a fully functional fuel cell car! Curriculum resources will also be presented and a Dr. Fuel Cell™ model car will be given away at the end of each workshop.

Fantastic Physical Science Demonstrations from Flinn Scientific —*Science Teaching*— **(Phys)**

(Grades 6–12)

Room 204/205, Convention Center

Sponsor: Flinn Scientific, Inc.

Janet Hoekenga, 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. Over a dozen effective demonstrations will be performed.

The U.S. Department of Energy Makes Government Research Accessible Online **(Gen)**

(College)

Room 207, Convention Center

Sponsor: U.S. Dept. of Energy (DOE) Office of Scientific and Technical Information (OSTI)

Lynn Davis (davisl@osti.gov), U.S. Dept. of Energy Office of Scientific and Technical Information, Oak Ridge, Tenn.

Learn how to find authoritative government scientific research at DOE-OSTI (www.osti.gov) from three free online search engines that include 10 important DOE resources (www.ScienceAccelerator.gov), 14 U.S. federal agencies (www.Science.gov), and more than 50 countries (www.WorldWideScience.org). Small-group and individual demonstrations will be provided.

Genetics: The Crazy Traits Game —Science Content— (Bio)*(Grades 5–8)**Room 210, Convention Center*

Sponsor: CPO Science/School Specialty Science

Patsy Eldridge, Erik Benton, and Scott Eddleman, CPO Science/School Specialty Science, Peabody, Mass.

Learn hands-on strategies for teaching genetics and natural selection as you flip coins representing the alleles of the parent generation and determine the traits for an offspring. Participants learn how the genetic makeup of the parents, along with chance, determines the traits of offspring.

Fun and Games That Help Improve Test Scores! —Science Content— (Gen)*(Grades 1–8)**Room 211, Convention Center*

Sponsor: Fisher Scientific Education

Presenter to be announced

Gain hands-on experience integrating the Science Curriculum Mastery Game Learning System in the classroom. Developed and classroom tested by teachers, this unique learning system provides an engaging and interactive means to reinforce and review core science curriculum topics for grades 1–8. FREE SAMPLES! This workshop is presented by New Path Learning.

Inquiry Investigations™ Forensics Science Curriculum Module and Kits —Science Content— (Gen)*(Grades 7–10)**Room 213, Convention Center*

Sponsor: Frey Scientific/School Specialty Science

Ken Rainis, Frey Scientific/School Specialty Science, Nashua, N.H.**Lisa Bowman**, Mansfield, Ohio

With our new Inquiry Investigations™ forensics series, students learn foundational analysis skills that help solve multifaceted cases. See how program software allows the preparation of web-based content, along with individualized assessments. Participants will perform skill-based investigative techniques and case investigations, and receive a program resource CD and correlations.

The Private Eye®: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art —Science Content— (Gen)*(General)**Room 214, Convention Center*

Sponsor: Educational Innovations, Inc.

Kerry Ruef, The Private Eye Project, Lyle, Wash.

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

Carolina's Young Scientist's Dissection Series (Bio)*(Grades 5–8)**Room 215, Convention Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Carolina's Young Scientist's Dissection kits provide introductory-level activities for earthworm, crayfish, grasshopper, starfish, perch, and frog. Using the instructions provided, participants locate and identify external and internal features and gain understanding of

the animals, as well as the relationship of structure to function. Kits address the National Science Education Standards, Grades 5–8, Life Science.

Amplify Your Genetics Teaching Skills with Carolina's New Inquiries in Science™ Biology Units **(Bio)**

(Grades 9–12)

Room 216, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Want to crack the mystery of genetics for your students? Increase student achievement on difficult concepts such as nucleic acids, genetic inheritance, and biotechnology by using a guided-inquiry approach. Carolina's Inquiries in Science™ Biology units provide hands-on activities to make teaching challenging topics effortless. Free teacher materials and door prizes!

Math Out of the Box®—Measuring Success! **(Gen)**

(Grades K–5)

Room 217, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

See how mathematics connects to everyday situations by exploring various types of measurements (area, volume, time, temperature, length, and weight). Math Out of the Box® is an inquiry-based math curriculum developed at Clemson University. Participants experience interactive lessons from the program's Developing Measurement Benchmarks strand.

The Heart of Science Teaching: INQUIRY, INQUIRY, INQUIRY!—Science Teaching— **(Gen)**

(Grades K–8)

Room 220, Convention Center

Sponsor: Pearson

Michael Padilla, 2005–2006 NSTA President, and Clemson University, Clemson, S.C. NSTA Past President Michael Padilla introduces teachers to a variety of inquiry strategies as well as ways to tell if inquiry-based lessons are successful for students.

Inquiry in the Chemistry Classroom —Science Teaching— **(Chem)**

(Grades 9–12)

Room 221, Convention Center

Sponsor: Pearson

Ed Waterman, Retired Educator, Fort Collins, Colo.

Hands-on small-scale chemistry and Virtual Chemistry Laboratory promote effective and time-efficient inquiry in the high school chemistry classroom. High school teacher and author Ed Waterman explores teaching the content of chemistry through inquiry.

Chemistry with Vernier —Science Teaching— **(Chem)**

(Grades 9–College)

Room 222, Convention Center

Sponsor: Vernier Software & Technology

Jack Randall (info@vernier.com) and **Dan Holmquist** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Experiments such as acid-base titration and Boyle's law from our popular *Chemistry with Vernier* and *Advanced Chemistry with Vernier* lab books will be performed in this hands-on workshop. Conduct these experiments using LabQuest as a stand-alone device and on a computer. Try SpectroVis, our new low-cost spectrophotometer. Experiments are appropriate for introductory, AP, IB, and college courses.

Forensics with Vernier —Science Teaching—**(Bio)***(Grades 9–College)*

Room 224, Convention Center

Sponsor: Vernier Software & Technology

Jackie Bonneau (info@vernier.com) and **Rick Sorensen** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Add technology to your forensics curriculum with our new lab manual *Forensics with Vernier*. Attend this workshop to see activities that deal with various aspects of forensic science using sensor technology. The activities can be done with a LabQuest interface or a TI calculator.

Get Your Green On**(Gen)***(Grades K–12)*

Room 225, Convention Center

Sponsor: Discovery Education

Lance Rougeux (lance_rougeux@discovery.com), Discovery Education, Silver Spring, Md. THINK GREEN with Discovery Education and Waste Management! Get the first look at brand-new K–12 multimedia resources to help you incorporate environmental science into your classroom, learn how you can put the four R's (Reduce, Reuse, Recycle, and Recover) into action, and leave with a new perspective on trash! Free gift for all participants.

Amazon Rain Forest Expedition: Curriculum from the Classroom to the Field —Professional Development—**(Bio)***(General)*

Room 226, Convention Center

Sponsor: International Expeditions

Juliana Texley (j.texley@att.net), Palm Beach Community College, Boca Raton, Fla.**Marilyn DeWall** (mdewall@cox.net), Chair, Retired Members Advisory Board, Newport News, Va.**Janet Ort** (jort@hoover.k12.al.us), Hoover High School, Hoover, Ala.**Diana Crew** (diana@immersionpresents.org), Immersion Presents, Mystic, Conn.

Peru's rain forest hosts a unique venture combining online training in biology and anthropology with on-site exploration, culminated by facilities and curriculum development and a lasting professional network across continents. Learn how the Amazon is changing, sample bilingual materials, and discover how you can link with a partner school.

Capturing Attention in the Chemistry Classroom —Science Content—**(Chem)***(Grades 9–12)*

Room 227, Convention Center

Sponsor: Houghton Mifflin Harcourt-Holt McDougal

Mickey Sarquis and **Jerry Sarquis**, Holt McDougal, Evanston, Ill.

Jerry and Mickey Sarquis, *Modern Chemistry* authors, show how to spark imagination and interest in chemistry with simple but powerful tricks and tips. The Sarquises are recognized leaders in chemistry education initiatives. It's suggested that you arrive early as this workshop fills up fast.

EDVOTEK Biotechnology—PCR Made Easy! —Science Teaching—**(Bio)***(Grades 6–College)*

Room 228, Convention Center

Sponsor: EDVOTEK

Jack Chirikjian (info@edvotek.com), EDVOTEK, Rockville, Md.

Excite your students with the power of PCR! Use our easy-to-use EdvoCycler to make single lab session PCR experiments possible that won't break your budget. Participants are automatically entered into a raffle for a FREE classroom electrophoresis (a \$500 value) OR a credit of the same value toward the purchase of an EdvoCycler!

GIS for Earth Science Inquiry —Science Content— (Earth)

(Grades 3–College)

Room 231, Convention Center

Sponsor: ESRI

Joseph Kerski (jkerski@esri.com), ESRI, Redlands, Calif.

Roger T. Palmer (roger@gisetc.com), GISetc, Dallas, Tex.

Explore how and why GIS (geographic information systems) and other geospatial technologies (GPS and remote sensing) are essential in earth science education and careers. Investigate local to global topics via practical classroom activities supporting science standards and inquiry. Receive free GIS software and classroom resources. For more information, see <http://edcommunity.esri.com>.

Living by Chemistry: Create a Table! (Chem)

(Grades 9–11)

Room 232, Convention Center

Sponsor: Key Curriculum Press

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

The periodic table is a wonderful resource, but to students it can be a static chart on the wall. Participate in a card sort activity that introduces the periodic table through guided inquiry. Participants will receive a deck of cards and an overview of the Living By Chemistry curriculum.

Fundamentals of Biotechnology —Science Content— (Bio)

(Grades 9–College)

Room 235, Convention Center

Sponsor: Energy Concepts, Inc.

Jeanne Moldenhauer and **Merrill Rudes** (mrudes@ecimail.com), Energy Concepts, Inc., Mundelein, Ill.

Join us to explore the Fundamentals of Biotechnology program. We will outline what biotechnology is, milestones in biotechnology, and careers available in biotechnology. An outline for the program will be presented, and we will discuss how to implement it. Several demonstrations and experiments will be presented that can be used in your classroom.

Learning Chemistry with Software for Molecular-Level Visualization —Professional Development— (Chem)

(Grades 9–College)

Room 236, Convention Center

Sponsor: Wavefunction, Inc.

Paul Price (sales@wavefun.com), Wavefunction, Inc., Irvine, Calif.

Do you see students struggle with the key concepts of molecular science? Would you like to engage your students with state-of-the-art simulations that are scientifically sound? Attend this hands-on workshop using notebook computers and learn how to remove misconceptions and teach more effectively. Free take-home CD with select demonstrations.

8:00–10:00 AM PRESENTATIONS

SESSION 1

PDI

BSCS Pathway Session: Can Inquiry Lead to Content Deepening? —Science Teaching— (Gen)

(General)

Room 333, Convention Center

Sam Spiegel (sspiegel@bscs.org) and **Meridith Bruozas** (mbruozas@bscs.org), BSCS, Colorado Springs, Colo.

Can inquiry teaching deepen students' content understanding? Engage in inquiry activities based on the Sun/Earth/Moon system that model the five essential features of inquiry and focus on scientific explanations.

SESSION 2

PDI

EDCi Pathway Session: The Art of Talk and the Power of the Circle —Science Teaching— (Gen)

(Elementary)

Room 335, Convention Center

Jeff Winokur (jwinokur@edc.org), **Sally Crissman**, and **Karen Worth** (kworth@edc.org), Education Development Center, Inc., Newton, Mass.

Martha Heller-Winokur (martha.heller_winokur@tufts.edu), Tufts University, Medford, Mass.

Using classroom video and discussion, we will share strategies for developing students' skills for engaging in productive classroom science discussions in grades 3–5.

SESSION 3

PDI

EDCm Pathway Session: Helping Beginning Secondary Science Teachers: Research-based Suggestions for Experienced Teachers and Administrators —Science Teaching— (Gen)

(Middle Level–High School)

Room 336, Convention Center

Julie Luft (julie.luft@asu.edu), NSTA Director, Research in Science Teaching, and Arizona State University, Tempe

Helping beginning science teachers is important! I will review research on mentoring and induction and summarize findings for administrators and colleagues of beginning science teachers.

SESSION 4

PDI

SC Pathway Session: Coaching Basics That Promote Reflective Practice in Science —Professional Development— (Gen)

(General)

Room 348, Convention Center

Alice Gilchrist (agilchrist@lander.edu), Upper Savannah Regional Math and Science, Greenville, S.C.

Dorothy Earle, South Carolina Coalition for Mathematics & Science, Greenville

This “how-to” session offers you opportunities to learn about and practice rapport, professional inquiry, and listening strategies essential to effective science coaching. These skills are relevant to anyone interested in promoting reflective practice in the science classroom.

8:00–10:00 AM WORKSHOP

CESI Session: Make and Take Extravaganza! —Professional Development— (Gen)
(General) Room R08/R09, Convention Center

Betty Crocker (crocker@unt.edu), University of North Texas, Denton

Alan J. McCormack (amccorma@mail.sdsu.edu), CESI President, and San Diego State University, San Diego, Calif.

William J. Sumrall (sumrall@olemiss.edu), **Kenneth W. Barlow, Jr.**, **Kimberly Carroll** (kicarrol@olemiss.edu), and **John F. Wiginton** (jfwigint@olemiss.edu), The University of Mississippi, University, Miss.

Mary Beth Katz (mbkatz@bellsouth.net), Alabama Science Teachers Association, Birmingham

Becky Cox (*beckyc@utm.edu*), The University of Tennessee at Martin
Amy Denton, Schneider Middle School, Houston, Tex.
Johannes Kepler (*johanneskepler@att.net*), Johannes Kepler Project, Charleston, S.C.
Barbara Tharp (*btharp@bcm.edu*), Baylor College of Medicine, Houston, Tex.
Heather Whitby, Herod Elementary School, Houston, Tex.
Kevin C. Wise, Southern Illinois University, Carbondale

During this two-hour session using a round-robin approach, collect ideas that teachers from around the world value enough to share!

8:00–10:30 AM EXHIBITOR WORKSHOP

Bio-Rad—DNA Fingerprinting and Gel Analysis —Science Teaching— (Bio)
(Grades 9–College) Room 229, Convention Center

Sponsor: Bio-Rad Laboratories

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

Use restriction enzyme digestion and DNA gel electrophoresis (popularly known as DNA fingerprinting) to determine which suspects could have committed the crime—based on DNA evidence. Learn how to calculate sizes of DNA bands using molecular weight standards and gel imaging systems. AP Biology Lab 6.

8:00–11:00 AM PRESENTATION

SESSION 1



HRI Pathway Session: Knowing What They Know: Transferring the Item-writing Workshop to Your School/District, Part 1 —Professional Development— (Gen)
(Elementary–High School) Room 342, Convention Center

Sean Smith and **Melanie Taylor** (*mtaylor@horizon-research.com*), Horizon Research, Inc., Chapel Hill, N.C.

Receive resources and use them to plan for starting and sustaining a professional development experience for teachers focused on writing assessment items. For part 2, see page 83.

8:00 AM–12 Noon SHORT COURSE



Teaching About Climate Change (SC-8)

(Middle Level–High School)

Tickets Required; \$64

Terrace, Westin

Lori Dunklin (*ldunklin@houstonisd.org*), Contemporary Learning Center, Houston, Tex.

Roderick Jones (*rjones@houstonisd.org*), Madison High School, Houston, Tex.

Carla Hoyer (*choyer@houstonisd.org*), Waltrip High School, Houston, Tex.

For description, see Volume 1, page 83.

8:00 AM–12:30 PM NSTA SYMPOSIUM

FDA/NSTA Symposium: Teach Science Concepts and Inquiry with Food (SYM-3)*(Grades 5–8)***Tickets Required; \$54***Room 255, Convention Center***FDA Team**

For description, see Volume 1, page 78.

8:00 AM–2:30 PM SHORT COURSE

Our Solar System: An Inquiry Tour (SC-9)*(Elementary–Middle Level)***Tickets Required; \$21***Imperial, Westin***Steve Culivan** (*stephen.p.culivan@nasa.gov*), NASA Stennis Space Center, Stennis Space Center, Miss.**Lisa Brown** (*lisa.r.brown@nasa.gov*) and **Mike McGlone** (*michael.a.mcglone@nasa.gov*), NASA Johnson Space Center, Houston, Tex.**Les Gold** (*leslie.j.gold@nasa.gov*), NASA Kennedy Space Center, Kennedy Space Center, Fla.**Brian Hawkins** (*brian.j.hawkins@nasa.gov*), NASA Ames Research Center, Moffett Field, Calif.

For description, see Volume 1, page 84.

8:15–11:15 AM SHORT COURSE

**Turn Maniacs into Brainiacs: Using Brain-based Research to Create an Optimum Learning Environment (SC-10)***(General)***Tickets Required; \$55***Executive, Westin***Kathy Brandon** (*kathy.brandon@barksdale.af.mil*) STARBASE Louisiana, Barksdale Air Force Base

For description, see Volume 1, page 84.

8:30–9:30 AM **FEATURED PANEL**

Science for All Americans at Twenty—From Vision to Action **(Gen)**

(General)

Room 352, Convention Center



Speaker

George "Pinky" Nelson

Director, Science, Mathematics, and
Technology Education Program
Western Washington University
Bellingham, Wash.



Speaker

Jo Ellen Roseman

Director, Project 2061
AAAS
Washington, D.C.
jroseman@aaas.org

Additional Panelist: F. James Rutherford (1974–1975 NSTA President, and Founding Director, Project 2061, AAAS, Washington, D.C.)

Moderator: Page Keeley, NSTA President, and Senior Science Program Director, Maine Mathematics and Science Alliance, Augusta

The 20th anniversary of the publication of AAAS Project 2061's *Science for All Americans* provides an occasion for reflecting on this groundbreaking effort to provide the nation with a vision of the science knowledge and skills that are essential for living in the modern world. An expert panel offers insights—both personal and professional—from those involved in the creation of *Science for All Americans* and from those who have been influenced by it. Although unable to attend this panel in person, Dr. Rutherford will be connected via audio remotely. He will present a briefing on the historical context of *Science for All Americans*, describing how the book emerged from the deliberations of more than 100 scientists and engineers.

Jo Ellen Roseman was appointed education coordinator for Project 2061 in 1989. She served as Project 2061 curriculum director from 1991 to 1999, then as associate director. In 2003 she was appointed director of Project 2061.

Dr. George D. "Pinky" Nelson is director of the Science, Mathematics, and Technology Education program and professor of physics and astronomy at Western Washington University in Bellingham, Washington. From 1996 to 2001, he was director of Project 2061 and a member of the senior staff of AAAS.

Acclaimed educator F. James Rutherford founded Project 2061 in 1985, when he served as executive director of AAAS's education division. Earlier positions included his appointment in 1977 as assistant director of the National Science Foundation. He also served as Assistant Secretary for Research and Improvement in the U.S. Department of Education.

8:30–9:30 AM PRESENTATION**SESSION 1**

Teacher Researcher Day Session: Poster Session for Teachers and Teacher Educators Inquiring into Science Learning and Teaching —Professional Development—
(Gen)

*(General)**Acadia, New Orleans Marriott*

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

Claire G. Bove (*cgbove@flash.net*), Mills College, Oakland, Calif.

Deborah R. Harris (*drobert1@umd.edu*), Queen Creek (Ariz.) Unified School District

Find out what questions teachers and teacher educators are asking and how they are exploring them in their own classrooms.

8:30–10:30 AM MEETING

Aerospace Programs Advisory Board Meeting

*Estherwood, Sheraton***8:30–11:30 AM SHORT COURSE**

Building Simple Animations and Simulations Using Freeware (SC-11)

*(Middle Level–High School)***Tickets Required; \$31***Salon, Westin*

Mike Wendling (*mikebluw@yahoo.com*), Holy Trinity Episcopal School, Houston, Tex.

Cheryl Wendling (*cheryllwendling@yahoo.com*), Clear Brook High School, Friendswood, Tex.

For description, see Volume 1, page 84.

8:30–11:30 AM EXHIBITOR WORKSHOP

Using Science Notebooks with FOSS Middle School Courses —Science Content—
(Gen)

*(Grades 5–8)**Room 209, Convention Center*

Sponsor: Delta Education/School Specialty Science-FOSS

Virginia Reid, Lawrence Hall of Science, University of California, Berkeley

Chris Sheridan, Consultant, Sammamish, Wash.

We'll use the FOSS Middle School curriculum to demonstrate the use of science notebooks with middle school students. Learn how to implement and assess science notebooks in your classroom to increase student understanding of science content and to enhance literacy skills. Sample materials will be distributed.

9:00–10:30 AM WORKSHOP

DUPONT Session: DuPont Presents—Biofuels: By-Products of Combustion

(Env)

*(Middle Level–High School)**Southdown, Sheraton*

Peggy Vavalla, DuPont, Wilmington, Del.

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

9:00 AM–12 Noon **SHORT COURSE**

Using Fossils to Address Evolution and the History of Life, Earth, Oceans, and Climate (SC-12)

(Middle Level)

Tickets Required; \$40

River Room I/II, Westin

Robert M. Ross (*rmr16@cornell.edu*) and **Richard Kissel** (*rak256@cornell.edu*), Paleontological Research Institution, Ithaca, N.Y.

Michael A. Gibson (*mgibson@utn.edu*), University of Tennessee, Martin

For description, see Volume 1, page 86.

9:00 AM–5:00 PM **EXHIBITS**

Exhibit Hall B1, Convention Center

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

9:00 AM–5:00 PM **MEETING**

NSTA International Lounge

Trafalgar, Hilton

Please stop by the NSTA International Lounge to relax or meet colleagues while you're here at the NSTA New Orleans National Conference on Science Education.

9:15–10:45 AM **PRESENTATION**

SESSION 1

PDI

LHS Pathway Session: Using Environmental Issues to Build Students' Scientific Argumentation Skills —Science Content— **(Env)**

(Elementary)

Room 337, Convention Center

Jonathan Curley (*curley@berkeley.edu*) and **Jennifer Tilson** (*jtilson@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

We will share a strategy for building elementary students' scientific argumentation skills through structured discussion of environmental issues using evidence from text and inquiry-based investigation.

9:30–10:00 AM **PRESENTATION**

SESSION 1

Save the Planet—Start with Your Own Yard! —Science Teaching— **(Env)**

(High School)

Bonaparte, New Orleans Marriott

James Naum-Bedigian, Marist School, Atlanta, Ga.

How you treat your personal space influences the biodiversity you observe in your backyard.

9:30–10:30 AM FEATURED PRESENTATION**The Dead Chemists Society Presents: It's a Gas, Gas, Gas!****(Chem)***(General)*

Room 243, Convention Center



Speaker

William C. DeeseT.W. Ray Johnson Professor
of ChemistryLouisiana Tech University
Ruston, La.*wcdeese@latech.edu*Presider: Cathi Cox (*ccox@lincolnschools.org*), Project ACHIEVE
Coordinator, Lincoln Parish Schools, Ruston, La.

Enjoy a brief (and incomplete) history of the study of gases, from Empedocles's proof that air exists to the explosive reaction of Cavendish's inflammable air. Using demonstrations and biographical sketches, we'll examine the physical and chemical properties of common gases as well as the history and human nature of science. Connections between the macroscopic and molecular worlds of gases will be illustrated through the art of juggling!

William C. Deese, PhD, began his professional career at Louisiana Tech University in 1982 and continues his love of teaching there today. His first summer institute for chemistry teachers coincided with the release of the Robin Williams movie The Dead Poets Society, which led Deese to form The Dead Chemists Society demonstration programs, a unique blend of science, history, and performance art.

9:30–10:30 AM INFORMAL SCIENCE DAY FEATURED PRESENTATION**What Are You Doing to Celebrate Science in 2009? —Science Teaching— (Gen)***(General)*

Carondelet, New Orleans Marriott

Speaker: **Judy Scotchmoor** (*jscotch@berkeley.edu*), Assistant Director, Education and Public Programs, University of California Museum of Paleontology, BerkeleyPresider: Elsa Bailey (*ebbailey@earthlink.net*), NSTA Director, Informal Science, and Elsa Bailey Consulting, San Francisco, Calif.

Informal Science Day kicks off with a presentation about an exciting national project, a yearlong initiative to celebrate science. Come learn how to join in!

Judy taught middle school math and science for 25 years, loving almost every minute of it. Her work at University of California Museum of Paleontology (UCMP) began as a volunteer in the fossil prep lab in 1994. Though it was a tough decision to leave teaching, Judy has no regrets.

9:30–10:30 AM PRESENTATIONS**SESSION 1****Toyota TAPESTRY Grants for Science Teachers = \$\$\$ for Your School (Gen)***(Elementary–High School)*

Room 237, Convention Center

Eric V. Crossley (*ecrossley@nsta.org*), Assistant Director, Corporate Partnerships/Toyota TAPESTRY Grants for Science Teachers, NSTA, Arlington, Va.

Find out how to increase your chances of winning a Toyota TAPESTRY grant.



SESSION 2

The Urban Ecosystem Re-examined: A Return to the Forest Where We Live —*Science Content*— **(Env)**

(General)

Room 239, Convention Center

Claudia Fowler and **Liz Barnes** (*lbarnes@lpb.org*), Louisiana Public Broadcasting, Baton Rouge

Ed Macie, USDA Forest Service, Atlanta, Ga.

Alice Walker (*alice@actrees.org*), Alliance for Community Trees, College Park, Md.

Mike Lehman (*mlehman@amfor.org*), American Forests, Washington, D.C.

Presider: **Tika Laudun** (*tlaudun@lpb.org*), Louisiana Public Broadcasting, Baton Rouge

Examine how the urban forest ecosystem is changing. Join a panel of experts to discuss their findings and receive a free DVD.



SESSION 3

Using a Student's Individual Strongest Multiple Intelligence Attribute to Plan the Lesson, Teach the Lesson, and Evaluate the Lesson —*Science Teaching*— **(Chem)**

(Middle Level)

Room 240/241, Convention Center

William H. Koenecke (*william.koenecke@coe.murraystate.edu*), Murray State University, Murray, Ky.

Kathy Jones, Mayfield Middle School, Mayfield, Ky.

Scott Pile (*scott.pile@calloway.kyschools.us*), Calloway County Middle School, Murray, Ky.

Presider: Scott Pile

Have you been pressured to differentiate your instruction for all learning styles and create an engaging classroom? How can you accomplish this task? Learn how to use action research and experimentation to successfully engage students in a seventh-grade science classroom.



SESSION 4

ISTE: Using Technology to Break the Traditional Mold of a Laboratory Report **(Gen)**

(General)

Room 242, Convention Center

Ben Smith (*ben@edtechinnovators.com*), Red Lion Area High School, Red Lion, Pa.

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

Do your students write lab reports? We will show you how to use technology with students and change the face of the traditional science lab report. Using technology alongside research and problem solving turns them into 21st-century skills.

SESSION 5

AoA Session: Strategies and Resources That Enhance the Science Learning of Students from Underrepresented Groups (AMSE) —*Professional Development*— **(Gen)**

(General)

Room 252, Convention Center

Cherry C. Brewton (*cbrewton@georgiasouthern.edu*), AMSE President, and Georgia Southern University, Statesboro

Mary M. Atwater (*atwater@uga.edu*), The University of Georgia, Athens

The Association for Multicultural Science Education will share strategies and resources that incorporate 21st-century skills in enhancing science learning in underrepresented groups.

SESSION 6

AoA Session: Web 2.0—Just What Is It? (NMLSTA) —*Science Teaching*— (Gen)
(Elementary–High School) Room 253, Convention Center

Dale J. Rosene (*ishtar@aglp.com*), Marshall Middle School, Marshall, Mich.

Presider: Annette M. Barzal (*abarzal@gmail.com*), NMLSTA President, Sharon Center, Ohio

The internet is not what it used to be! Discover new ways to use the it to enhance what happens in your classroom.

SESSION 7

NIH Symposium Follow-Up Session: Research Ethics: The Power and Peril of Human Experimentation —*Science Content*— (Bio)

(High School) Room 257, Convention Center

Dave Vannier (*vannierd@od.nih.gov*), National Institutes of Health, Bethesda, Md.

Teach experimental design with the bioethics of human subjects research. Respect and harms/benefits are presented in a new model for presenting bioethics in high school.

SESSION 8

Differentiation Made Easy! Using Learning Contracts in the Classroom —*Science Teaching*— (Gen)

(Preschool–Middle Level)

Room 343, Convention Center



Stop by **NSTA's Booth #1030**
Meet Staff and Learn About Our Services

Thursday March 19, 2009	
11:30–12:30	NSTA Learning Center
1:00–1:30	Costa Rica Field Study
2:30–3:00	NSTA Learning Center
3:00–3:30	Siemens We Can Change the World Challenge
Friday March 20, 2009	
10:00–10:30	NSTA Learning Center
11:00–11:30	Science Program Improvement Review (SPIR)
2:30–3:00	NSTA Learning Center
1:00–1:30	Costa Rica Field Study
Saturday March 21, 2009	
11:30–Noon	NSTA Membership
2:00–2:30	NSTA Sci-Links
2:30–3:00	NSTA Learning Center

* Attendees will receive a gift. Limited seats available.

Dee Thompson (*thompson_d@cneschools.org*) and **Susan Putnam** (*putnam_s@cneschools.org*), Clermont Northeastern Schools, Owensville, Ohio

Join two fourth-grade teachers as they share how they use learning contracts to meet the needs of all their learners with materials already in the classroom. You will never look at those free samples the same way again!

SESSION 9

NMLSTA Session: Say It with Clay —Science Teaching— (Gen)

(General)

Room 353, Convention Center

Tess Ewart (*mrsewart@aol.com*), A.I. Root Middle School, Medina, Ohio

Discover how students can create clay animations to illustrate science concepts. I'll share example projects and rubrics, and participants will brainstorm project ideas.

SESSION 10

Reading and Rocket Science —Science Content— (Phys)

(Preschool/Elementary)

Room R03, Convention Center

Beth Dykstra Van Meeteren (*beth.vanmeeteren@uni.edu*), **Betty Zan** (*betty.zan@uni.edu*), and **Kathy M. Thompson** (*kathy@jryant.com*), University of Northern Iowa, Cedar Falls

Experimentation with inclined planes provides children with authentic contexts for the development of reading, writing, and inquiry skills necessary for both science and literacy.

SESSION 11

Integrating Science into Literacy and Math —Science Content— (Gen)

(Elementary)

Room R06, Convention Center

Chasity A. Nutz (*nutzc@nlrsd.k12.ar.us*), Lynch Drive Elementary School, North Little Rock, Ark.

Presider: Lance Walters (*waltersl@nlrsd.k12.ar.us*), North Little Rock (Ark.) School District

Elementary teachers can learn how to integrate science into daily literacy and math lessons to create a balanced curriculum classroom.

SESSION 12 (two presentations)

(General)

Elmwood, Hilton

FIRST: Changing Attitudes...Changing the Future —Science Education Program— (Gen)

Anita G. Welch (*anita.welch@ndsu.edu*), North Dakota State University, Fargo

This study examines the impact of the FIRST Robotics Competition on students' attitudes toward science and STEM-related fields.

Engineers Can Do Anything! —Science Teaching— (Gen)

Celeste Baine (*celbaine@engineeringedu.com*), Engineering Education Service Center, Springfield, Ore.

Enjoy a fast-paced overview of engineering that challenges students to visualize themselves as engineers and learn how engineers influence almost everything around us.

SESSION 13

Presidential Awardee Share-a-Thon of Favorite Inquiry Lessons —Science Teaching— (Gen)

(General)

Napoleon Ballroom, Hilton

Conni Crittenden (*crittec@gmail.com*), Williamston (Mich.) Community Schools

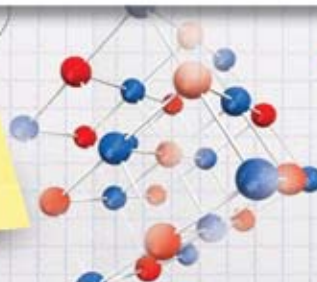
**TOMORROW'S INNOVATION COMES FROM
TODAY'S YOUNG MINDS**

Booth#
1035



2008 National Finalists

*Ice Cream Social
at the Ernest N. Morial
Convention Center
Room 352 from 4pm on
Friday, March 20th*



Toshiba was founded with a strong commitment to technological innovation, and this commitment goes hand in hand with our passion for science education. Through Toshiba's shared mission partnership with NSTA, the Toshiba/NSTA ExploraVision Awards make a vital contribution to the educational community. "Visit the ExploraVision Awards booth # 1035 at the NSTA National Conference in New Orleans or attend the ExploraVision Session and Ice Cream Social on Friday from 4:00-5:00pm at the Ernest N. Morial Convention Center, Room 352 for program information."

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

Helen Chang, Millstone River School, Plainsboro, N.J.

Jessie Good, Kohler (Wis.) Public Schools

Sherry Humphries (*slh9999@aol.com*), Illinois School for the Deaf, Jacksonville

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

Sharon Hushek (*hushekclan@yahoo.com*), Franklin (Wis.) Public Schools

Dana Krejcarek, Kohler High School, Kohler, Wis.

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

Deb Wickerham, Findlay (Ohio) City Schools

Get successful lesson ideas from the nation's best science teachers—presidential awardees—during this inquiry-based session. Handouts provided.

SESSION 14

Digitize Your Classroom —Science Teaching—

(Gen)

(General)

Versailles Ballroom, Hilton

James Calaway (*jcalaway@lawtonps.org*), Lawton (Okla.) Public Schools

Christopher Keller (*ckeller@cameron.edu*), Cameron University, Lawton, Okla.

Take your students into the 21st century using digital research, blogging, DVD production, podcasting, and publishing on websites.

SESSION 15 (two presentations)

(General)

Conde, JW Marriott

Relevant Research Can Be a Slam Dunk! —Professional Development— **(Gen)**

Jennifer M. Forgnoni (*jenniferforgnoni@hcpss.org*), Atholton High School, Columbia, Md.

Develop engaging research-based lessons for all content areas and grade levels using Microsoft PowerPoint and Jamie McKenzie's Slam Dunk! model.

Combining Classroom Time and Lab Time Doubles the Science Learning —Science Teaching— **(Gen)**

Emily O. Greene and **Adrienne Bledsoe** (*bledsoea@palmbeach.k12.fl.us*), Poinciana Elementary School, Boynton Beach, Fla.

Come see how we have combined classroom time and lab time to provide up to three consecutive hours of science instruction.

SESSION 16 (three presentations)

(General)

Frontenac, JW Marriott

Presider: Murray S. Jensen, University of Minnesota, Minneapolis

SCST Session: A Theoretical Basis for the Use of Alternative Texts in Nature of Science (NOS) Instruction —Science Teaching— **(Gen)**

William J. Straits (*wstraits@csulb.edu*), California State University, Long Beach

Russell Wilke, Angelo State University, San Angelo, Tex.

Reader response theory describes how readers interact with text. Applied to the use of historical nonfiction to address NOS understandings, this theory has important instructional ramifications.

SCST Session: Promoting Higher-Order Thinking in Freshman-Level Anatomy and Physiology **(Bio)**

Murray S. Jensen (*msjensen@umn.edu*), University of Minnesota, Minneapolis

Human anatomy and physiology courses have a reputation for requiring extensive recall. Our freshman nonmajors course does indeed require students to learn muscles and bones,

but the last 20% of all exams require higher-order thinking skills. This session will include an open forum on different methods instructors have used to promote higher-order thinking skills.

SCST Session: ChemAssist: A Hands-On Manipulative for Use in the Chemistry Classroom —*Science Content*— (Chem)

Deborah Koeck, Texas State University-San Marcos

Joyce Kulhanek, Olney High School, Olney, Tex.

Diane Booe, Ramirez Elementary School, Pharr, Tex.

ChemAssist is a hands-on manipulative that can be used in the classroom with elementary, middle school, high school, and entry-level college students. The easy-to-use kit provides a way to visualize the abstract concepts of compound formation and balancing chemical equations.

SESSION 17

NSTA Student Chapter Action Session —*Professional Development*— (Gen)
(General) *Ile de France II, JW Marriott*

Tom Shoberg, Pittsburg State University, Pittsburg, Kans.

Bambi Bailey (*bambi_bailey@uttyler.edu*), The University of Texas at Tyler

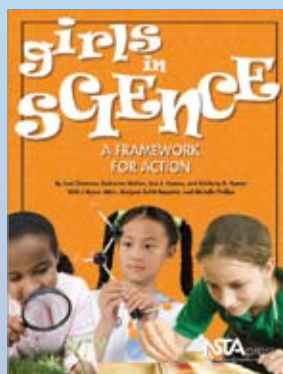
Kate A. Baird (*kabaird@iupuc.edu*), Indiana University-Purdue University, Columbus

Tom Lough (*tlough@slb.com*) and **Meagan Musselman**, Murray State University, Murray, Ky.

Have you stopped by the Science Bookstore yet?

If you buy an NSTA Press title, you may want it signed.

Ask for a complete listing of author signing schedules at the Science Bookstore!



Get your book signed!



NSTApress
National Science Teachers Association

Eryn A. Norton (*eanorton@scatcat.fhsu.edu*), Fort Hays State University, Hays, Kans.

James T. McDonald (*jim.mcdonald@cmich.edu*), Central Michigan University, Mount Pleasant

See NSTA student chapters in action! Poster sessions, a make-and-take, lesson plans, service teaching, and learning ideas are all combined into one action-packed session. Don't miss it!

SESSION 18

A Perspective from 54 Years of Science Teaching Experience (Gen)

(High School—College)

Maurepas, JW Marriott

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

I will discuss various aspects of science teaching and science teacher education based upon 54 years of experience in science education.

SESSION 19 (two presentations)

(General)

Orleans, JW Marriott

UB Excelsior Scholars Program: A Collaborative Model for 21st-Century STEM Literacy —Science Teaching— (Gen)

Eric D. Vosburgh (*edv2@buffalo.edu*), University at Buffalo, N.Y.

Karen T. Wallace (*kwallace@sciencebuff.org*), Buffalo Museum of Science, Buffalo, N.Y.

This program includes a hands-on curriculum, real-world biomedical problems, immersion in authentic applications, field visits to STEM facilities, exploration of career paths, and guided research.

The SCI-CARE Project: A Sustainable Collaboration to Improve Content, Assessment, Reflection, and Efficacy of Science Teachers —Professional Development— (Gen)

Ellen L. Schiller and **Jann Joseph** (*josephj@gvsu.edu*), Grand Valley State University, Allendale, Mich.

The SCI-CARE project (2006–2008) engaged science education professors and middle school science teachers from three urban school districts in better understanding and teaching self-identified difficult science concepts. We will share the results of the project and provide a CD of the science unit plans developed.

SESSION 20

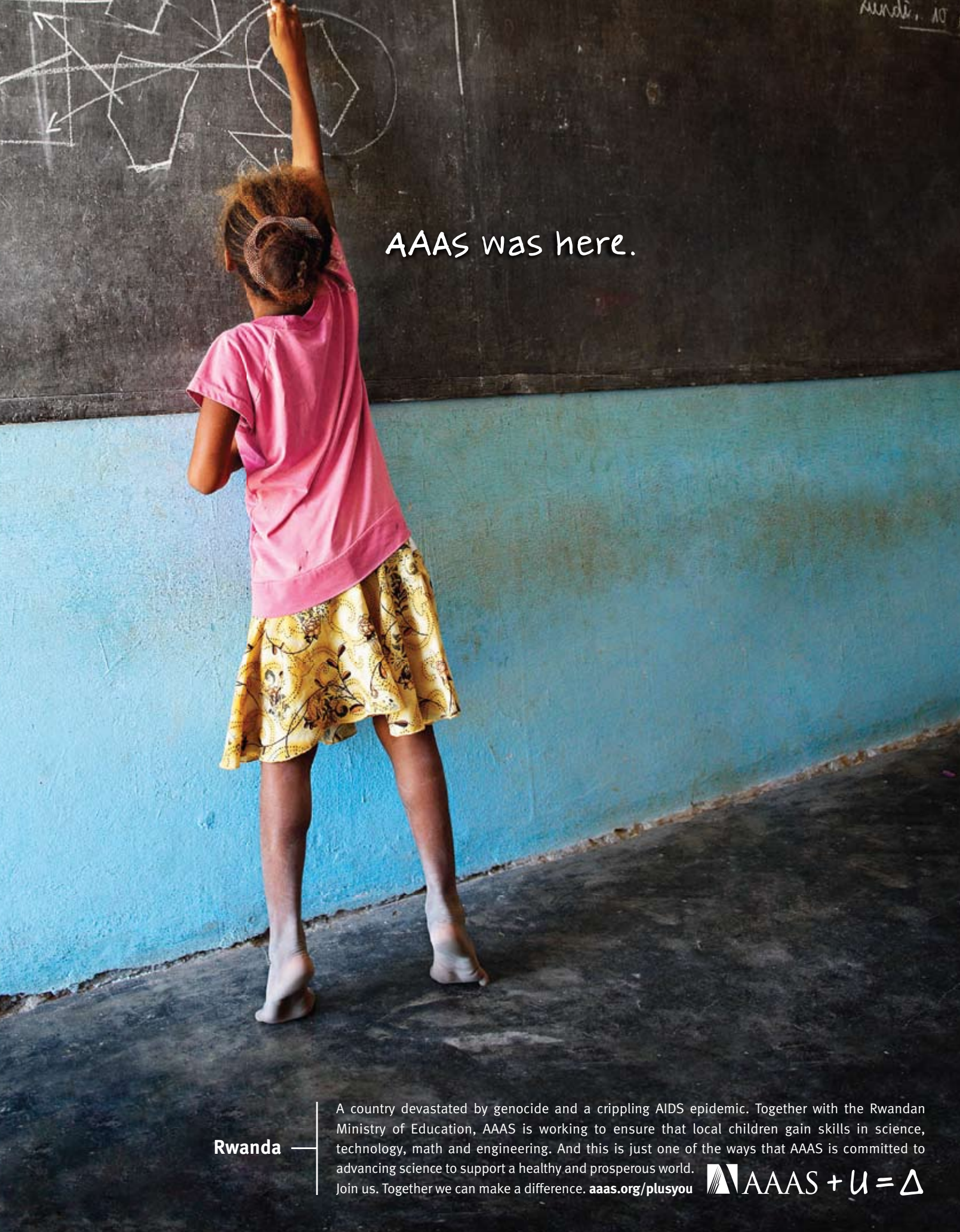
Professional Development Providers: What You Should Know and Be Able to Do, Part 2 —Professional Development— (Gen)

(General)

Rosalie, JW Marriott

Gwen Pollock (*gpollock@casscomm.com*), NSTA Director, Professional Development, and Science Consultant, Sherman, Ill.

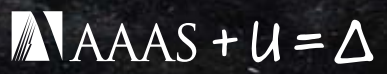
This continuing session will focus attention on the needs of new and experienced professional development providers and will include visions of best practice with advice on continual personal and/or settings improvement. This session is designed to share research foundations and successful strategies, and confront possible challenges and possible solutions. See page 26 for Part 1.



AAAS was here.

Rwanda

A country devastated by genocide and a crippling AIDS epidemic. Together with the Rwandan Ministry of Education, AAAS is working to ensure that local children gain skills in science, technology, math and engineering. And this is just one of the ways that AAAS is committed to advancing science to support a healthy and prosperous world. Join us. Together we can make a difference. aaas.org/plusyou



SESSION 21

Super Science for Special Education Teachers: A Professional Learning Community Journey —Science Teaching— (Gen)

(Elementary/College/Supervision)

Jackson, New Orleans Marriott

Elizabeth Niehaus (niehaus_p@msn.com) and **Anthony F. Sky**, Lawrence Technological University, South Lyon, Mich.

Paul J. Niehaus (niehaus_p@msn.com), Niehaus and Associates, Inc., South Lyon, Mich.

Carol L. Jones (cjones@misd.net), Macomb Intermediate School District, Clinton Township, Mich.

When addressing differentiated professional development, one thinks of special education teachers who are trying to teach science at various levels but have never been qualified to do so. Come see what a grant funded in Michigan has done to increase content knowledge, inquiry pedagogy, and assessment for special education students and teachers.

SESSION 22

No Child Left Behind and Science Education: What's Next? —Science Education System— (Gen)

(General)

La Galerie 5, New Orleans Marriott

Jodi L. Peterson (jpeterson@nsta.org), Assistant Executive Director, Legislative & Public Affairs, NSTA, Arlington, Va.

A new administration is in the White House. Let's take a look at what this means for the seven-year-old federal education law, examine how Congress is working to rewrite the law, and what changes, if any, schools can expect in the coming year.

SESSION 23

Aquaculture 101: How to Build a Basic System (and What to Do with It) —Science Teaching— (Gen)

(General)

Regent, New Orleans Marriott

Judy A. Reeves (judyreevesala@gmail.com), Alabama Dept. of Education, Montgomery

Phillip Waters (waterph@auburn.edu), Alabama Cooperative Extension System, Mobile

David Cline (clinedj@auburn.edu), Auburn University, Auburn, Ala.

Aquaculture combines science, math, and engineering with hands-on, project-based, problem-solving inquiry activities. Come on in—the water's fine!

SESSION 24 (two presentations)

(Middle Level–High School/Informal Education)

Bayside A, Sheraton

Presider: Angella M. Garvey, Bildersee I.S. 68, Brooklyn, N.Y.

Bringing Science Research to the Urban Community —Professional Development— (Gen)

Petal A. McPherson, Integrated School of Learning, Brooklyn, N.Y.

Join me as I demonstrate how science research can be conducted by students and parents using cultural institutions (zoos, botanic gardens, museums, aquariums). In New York City, the Urban Advantage initiative has trained teachers to have their students and parents use these cultural institutions. Learn how this can be done nationwide.

Being What You Can Become! —Science Content— (Gen)

Carolyn T. Sumners (csumners@hmns.org), Houston Museum of Natural Science, Houston, Tex.

Discover a program targeting inner city students with interactive real-world simulations and direct connections to local STEM careers.

SESSION 25**Self-Reflection and SATIC Coding: Improving Your Interactions with Students**
—*Science Teaching*— **(Gen)***(Middle Level–High School)**Edgewood A/B, Sheraton***Jesse Wilcox** (*jwilcox.23@gmail.com*), Valley Southwoods Freshman High School, West Des Moines, Iowa**Scott Moore**, Valley High School, West Des Moines, Iowa

Self-assessment can be a teacher concern. Learn some simple methods for self-analysis and reflection that will enable you to better engage students. Handouts.

SESSION 26 (two presentations)*(Middle Level–High School)**Gallier A/B, Sheraton***An Inquiry-based Laboratory on Reaction Rate Using Household Chemicals and Reusable Materials** —*Science Teaching*— **(Chem)****Atchara Ratanasuwan** (*kru_atchara@yahoo.com*), Mahidol University, Bangkok, Thailand**Kevin J. Niemi** (*kjniemi@wisc.edu*), University of Wisconsin, Madison

Reaction rate can be taught through inquiry using household chemicals and reusable materials. Acid-base reactions and a “bottle vehicle” are used to enhance students’ learning.

Chemistry MythBusters: Authentic Science Investigations **(Chem)****Sharon G. Geyer** (*geyers@pomfretschool.org*), Pomfret School, Pomfret, Conn.

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



Jason Getz (jason.getz@woodberry.org), Woodberry Forest School, Woodberry Forest, Va. Learn how to guide your students through an inquiry project of their own design. Inspired by the *MythBusters* show, students are challenged to test their own myth.

SESSION 27

Inquiring into Evolutionary Trees —Science Content— **(Bio)**

(High School)

Napoleon A3, Sheraton

Paul Beardsley (pbeardsley@bscs.org) and **Paul Numedahl** (pnumedahl@bscs.org), BSCS, Colorado Springs, Colo.

Learn about new findings in evolution education research and participate in inquiry-based activities that help students understand the concepts of evolution depicted in evolutionary trees.

SESSION 28

Shake and Bake: Using Secondary Data Sets to Explore Earthquakes and Climate —Science Content— **(Earth)**

(Middle Level–High School)

Napoleon B3, Sheraton

Jay Holmes (jholmes@amnh.org) and **Hudson Roditi** (hroditi@amnh.org), American Museum of Natural History, New York, N.Y.

The IRIS earthquake database and New York City Central Park Weather Data Set provide a rich opportunity for developing testable hypotheses, data review and synthesis, and conclusions based on real-world data.

SESSION 29

Sun Earth Day 2009–International Year of Astronomy: The Sun—Yours to Discover —Science Teaching— **(Earth)**

(Informal Education)

Napoleon C1, Sheraton

Carolyn Ng (carolyn.ng@gsfc.nasa.gov), **Jim R. Thieman** (james.r.thieman@nasa.gov), and **Louis A. Mayo** (louis.a.mayo@nasa.gov), NASA Goddard Space Flight Center, Silver Spring, Md.

Use highlights of the telescopes around the world that observe the Sun and see how their imagery is viewed from Sun Earth Day 2009.

SESSION 30

NSTA High School Biology Share Session —Science Content— **(Bio)**

(High School)

Napoleon D3, Sheraton

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

Presider: Jean Tushie (jtushie@comcast.net), NSTA Director, High School Science Teaching, and Eden Prairie High School, Eden Prairie, Minn.

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

SESSION 31 (two presentations)

(Middle Level–High School)

Rhythms I, Sheraton

Overcoming Hurdles to Open-ended Student Investigations —Science Teaching— **(Bio)**

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

Experimental design, data analysis, assessment of inquiry projects...we'll examine hurdles

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to facilitating student research and view tools and techniques that help to overcome these challenges.

The Ideal Mate Project: Authentic Assessment in the Construction and Interpretation of the Student’s Own Family Pedigree —Science Content— (Bio)

Michael J. Lazaroff (*michael_lazaroff@westport.k12.ct.us*), Staples High School, Westport, Conn.

Students collect family phenotypes, construct family pedigrees (even the adopted), determine their genotypes, and use them to predict possible kids with their ideal mate.

SESSION 32

Analogical Physical Science Teaching —Professional Development— (Chem)

(General) *Salons 817 & 821, Sheraton*

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

Enhance comprehension of physical science concepts with these colorful, exciting, multi-dimensional, and analogical explanations.

SESSION 33

Using Inquiry and Modeling to Study Electrical Resistance —Science Content—

(Phys)

(High School) *Salons 825 & 829, Sheraton*

Meera Chandrasekhar and **Dorina Kosztin**, University of Missouri, Columbia

Gabriel de la Paz, Clayton High School, Clayton, Mo.

Discover hands-on activities you can use to introduce students to concepts on electrical resistance and Ohm’s law. The activities are conducted using modeling and inquiry-based methods, as presented in the Missouri “A TIME for Physics First” Summer Academy (2006). Developed with Missouri Department of Elementary and Secondary Education funding, these activities include experimental design, measurement, and projects. Handouts!

SESSION 34

Join a Manuscript Review Panel for an NSTA Journal

(Gen)

(General) *Salon 828, Sheraton*

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

Learn how to join one of NSTA’s manuscript review panels and meet with the journal editors to learn what is expected of panel members.

9:30–10:30 AM WORKSHOPS



Pads, Pups, and Pods —Science Teaching—

(Bio)

(Elementary–High School) *Room 238, Convention Center*

Francine M. Gollmer (*fmgollme@interact.ccsd.net*), Gene Ward Elementary School, Las Vegas, Nev.

Experience Mojave Desert diversity through music, art, and hands-on inquiry plant dissections. Explore a desert biome with live cacti and succulents. Seed samples available.

Wheels, Windmills, and Water —Science Teaching—

(Gen)

(Middle Level)

Room 345, Convention Center

Martha F. Greydanus (mgreydan@bethel.k12.or.us), **Allison Bradshaw** (albradsh@bethel.k12.or.us), and **Rich Fraser** (rfraser@bethel.k12.or.us), Shasta Middle School, Eugene, Ore.

Build a model windmill, electric/solar car, or cardboard boat. Printed materials of curriculum and lesson plans provided.

NASA: Ready-made Earth and Space Science Lessons from the THEMIS and FAST Missions —Science Content—

(Phys)

(Middle Level)

Room 354, Convention Center

Bryan J. Mendez (bmendez@ssl.berkeley.edu), University of California, Berkeley

Cris DeWolf (cdewolf@chsd.us), Chippewa Hills High School, Remus, Mich.

Explore activities from two NASA teacher guides—*Exploring Magnetism on Earth* and *Space Weather*. We will calculate the average speed of the magnetic pole's movement over the past 1,000 years and use magnetic data to calculate the probability of a large magnetic storm occurring on a given day. Each participant will receive a CD and numerous handouts.

Engaging K–8 Science Students with Hands-On Investigations and Inquiry Supported by Science Literacy Skills and Quality Resources —Science Content—

(Gen)

(General)

Room 355, Convention Center

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

Supported by quality resources and instructional strategies, these hands-on science activities will engage your students and enhance learning. I'll share strategies that enable students to learn science skills and concepts while further developing their literacy skills and their investigative and higher-level thinking skills.

Clear Skies Ahead: Clearing Up Confusion on Clouds —Science Content—

(Earth)

(Elementary–Middle Level)

Room 356, Convention Center

Tina J. Cartwright (tina.cartwright@marshall.edu), Marshall University, Huntington, W.Va.

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

Todd Ensign (todd.i.ensign@ivv.nasa.gov), NASA IV&V Facility, Fairmont, W.Va.

Does teaching about clouds make you feel ominous and overcast? By incorporating classifications and simple dichotomous keys, your confusion over clouds will evaporate away!

Head Start on Science —Science Content—

(Gen)

(Preschool/Elementary/Supervision)

Room 357, Convention Center

LaShun Jasper (info@gatewaytoknowledge.org), Gateway to Knowledge Consulting, Richmond, Tex.

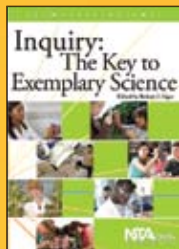
Presenter: Stephen Gonzales, Gateway to Knowledge Consulting, Richmond, Tex.

Head Start on Science is a hands-on science training program that is geared toward preK–2 teachers. Participants will engage in several developmentally appropriate hands-on activities from the NSTA Press book *Head Start on Science*. You'll leave the workshop excited about teaching science and with lots of consumable and nonconsumable material.



Using Science Notebooks in Elementary Classrooms

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Inquiry: The Key to Exemplary Science

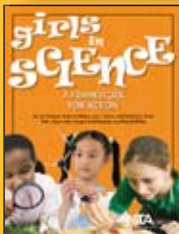
Grades: K-12
Member: \$19.96
Nonmember: \$24.95

College Science Teachers Guide to Assessment

Grades: College
Member: \$20.76
Nonmember: \$25.95

Reforming Secondary Science Instruction

Grades: 6-12
Member: \$19.96
Nonmember: \$24.95



Girls in Science: A Framework for Action

Grades: K-8
Member: \$19.96
Nonmember: \$24.95



40 Inquiry Exercises for the College Biology Lab

Grades: College
Member: \$27.96
Nonmember: \$34.95



Biology Teachers Handbook, 4th Edition

Grades: 9-12
Member: \$23.96
Nonmember: \$29.95

Chemistry Basics: Stop Faking It! Finally Understanding Science So You Can Teach It

Grades: 5-12
Member: \$19.16
Nonmember: \$23.95

A Head Start on Science: Encouraging a Sense of Wonder

Grades: PreK-2
Member: \$22.36
Nonmember: \$27.95

Climate Change From Pole to Pole: Biology Investigations

Grades: 9-College
Member: \$23.96
Nonmember: \$29.95

Teaching Science to English Language Learners: Building on Students' Strengths

Grades: K-8
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Earth Science Success: 50 Lesson Plans for Grades 6-8

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Using Outdoor Inquiry to Promote Stewardship: Bridging Classroom and Environment —Science Teaching— (Env)

(Elementary)

Room R01, Convention Center

Erica Beck Spencer (erica@indigoinnovations.com), Lawrence Hall of Science, University of California, Berkeley

Presider: Linda De Lucchi, Lawrence Hall of Science, University of California, Berkeley
These activities and strategies that make it easy for elementary teachers to use the immediate outdoor environment for applying and enriching concepts taught in the classroom. Sample teaching resources will be distributed.

Helping English Learners Meet the Science Standards: The Secret Is Comprehensible Input —Science Teaching— (Earth)

(Preschool/Elementary)

Room R02, Convention Center

Elmano M. Costa, California State University Stanislaus, Turlock

Participants will learn methods for making instruction comprehensible for English learners and participate in a lesson taught in a foreign language that models these practices.

Growing Seeds to Implement Inquiry and Teaching Standards —Science Teaching— (Gen)

(Elementary)

Room R04, Convention Center

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

Presider: Jenny Sue Flannagan (jennfla@regent.edu), Regent University, Virginia Beach, Va.

This growing seeds unit in a preservice elementary methods course models inquiry and research standards. Handouts.

Building the Science as Inquiry Literacy Bridge in Grades 4–6 —Science Teaching— (Gen)

(Elementary)

Room R07, Convention Center

J. Christine Paulsell (j.christine.paulsell@stpsb.org), St. Tammany Parish School, Covington, La.

Engage grades 4–6 students in the Science as Inquiry strand while building the characteristics of nonfiction literature to create Science as Inquiry literacy stations.

Use Scaffolded Inquiry to Build Science Literacy —Science Teaching— (Gen)

(General)

Jasperwood, Hilton

Karen L. Ostlund (klostlund@mail.utexas.edu), Retired Educator, Austin, Tex.

Learn how scaffolded inquiry (directed to guided to full) provides essential support as students construct the skills and knowledge needed to build science literacy.

Design Squad: Engineering Projects, Energizing Kids —Science Content— (Gen)

(General)

Oak Alley, Hilton

Natalie Hebshie (natalie_hebshie@wgbh.org), WGBH Educational Foundation, Boston, Mass.

PBS's engineering reality program *Design Squad* gives teachers free classroom resources that unleash kids' ingenuity and get them thinking like engineers.

Stem Cells: Current Research and Future Potential —Science Content— (Bio)
(High School–College) Ile de France III, JW Marriott

Dina G. Markowitz (dina_markowitz@urmc.rochester.edu), **Susan Holt**, and **Shaw-Ree Chen** (shawree_chen@urmc.rochester.edu), University of Rochester, N.Y.

These lessons and activities explore the biology of stem cells and cellular differentiation and examine the potential of stem cell research for treating human diseases.

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

(Elementary–High School) Bissonet, New Orleans Marriott

Michelle C. Harris (michelle_harris@apsva.us), Wakefield High School, Arlington, Va.

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

Roberta M. Johnson (rmjohnsn@ucar.edu), University Corporation for Atmospheric Research, Boulder, Colo.

Erna Akuginow and **Geoffrey Haines-Stiles** (ghs@passporttoknowledge.com), Passport to Knowledge/Geoff Haines-Stiles Productions, Inc., Morristown, N.J.

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

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

Janice Catledge (janice.catledge@jppss.k12.la.us), Gretna No. 2 Academy for Advanced Studies, Gretna, La.



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Louise Dykes (*ldykes@lafourche.k12.la.us*), Larose-Cut Off Middle School, Larose, La.
Jan Graff, Caddo Parish Schools, Shreveport, La.
Pamela Harman, SETI Institute, Mountain View, Calif.
Margaret Holzer (*mholzer@monmouth.com*), Chatham High School, Chatham, N.J.
Michael Hubenthal (*hubenth@iris.edu*), IRIS Consortium, Washington, D.C.
Louise Huffman (*lhuffman@andrill.org*), ANDRILL, Naperville, Ill.
Holly Hulfeld, New Mark Middle School, Kansas City, Mo.
Nina L. Jackson (*nina.jackson@noaa.gov*), NOAA Satellite and Information Service, Silver Spring, Md.
Karen Johnson (*karen.johnson@adams12.org*), Niver Creek Middle School, Thronton, Colo.
Carol E. Landis, The Ohio State University, Columbus
Manley Midgett (*manley.midgett@teacheracademy.org*), North Carolina Teacher Academy, Morrisville
Robert J. Myers, Institute for Global Environmental Strategies, Arlington, Va.
Sylvia Petersen (*sylvia_petersen@ipsd.org*), Crone Middle School, Naperville, Ill.
Carole Reesink (*creesink@bemidjistate.edu*), Bemidji State University, Bemidji, Minn.
Len Sharp, Le Moyne College, Syracuse, N.Y.
Michael J. Smith (*msmith@wilmingtonfriends.org*), Wilmington Friends School, Wilmington, Del.
Michele Svoboda (*msvoboda1@cppschoools.net*), Mill Creek Middle School, Comstock Park, Mich.
Gail Weeks (*gweeks@elisabethmorrow.org*), Elisabeth Morrow School, Englewood, N.J.
Pamela Whiffen (*pwpwr@aol.com*), NASA/Scottsdale Gifted Program, Scottsdale, Ariz.
Presider: Michelle C. Harris
Join NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

CSSS Session: Advancing Science as Inquiry: Professional Development Tools You Can Use —Professional Development— (Gen)

(General) *La Galerie 6, New Orleans Marriott*

Deborah L. Tucker (*deborahlt@aol.com*), Napa, Calif.
Marsha S. Winegarner (*equscied@defuniak.com*), Education Consultant, Tallahassee, Fla.
Linda K. Jordan (*linda.k.jordan@state.tn.us*), Tennessee Dept. of Education, Nashville
Inquiry seeks to build student understanding of how we know what we know. Become familiar with six professional development tools that promote inquiry-based science.

Inquiring About the Universe: Capture & Explore (Phase 2) —Professional Development— (Earth)

(Middle Level—High School/Informal Education) *Bayside C, Sheraton*

Jacob Noel-Storr (*jake@cis.rit.edu*), Rochester Institute of Technology, Rochester, N.Y.
Emilie Drobnes (*emilie.drobnes@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

This is the second in a series of professional development workshops from NASA Goddard Space Flight Center and the Rochester Institute of Technology Insight Lab to support your inquiry-based teaching of astronomy/space science. Learn strategies for inquiry-based teaching in space science areas consistent with the National Science Education Standards.



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DNA Unzipped: What Is a Gene? —Science Content— (Bio)

(High School)

Napoleon A1&2, Sheraton

Tracy K. Stockwell (tstockwell@hamden.org), Hamden High School, Hamden, Conn.

Does teaching the “central dogma” take too long? How can easily obtained materials and a government database help students learn the gene concept more effectively in less time?

True Inquiry or Guided Inquiry...That Is the Question! —Science Teaching— (Gen)

(Middle Level–High School)

Napoleon B2, Sheraton

Dawn M. Hudson (dhudson@paulding.k12.ga.us), Paulding County Schools, Dallas, Ga.

Presider: Jeannine Foucault (jjfoucault@comcast.net), Lewisburg High School, Olive Branch, Miss.

Join a successful group of educators who have received numerous MSP (Math Science Partnership) grants in science inquiry techniques and leadership. Are you tired of inquiry not really being inquiry? If so, this session is for you! Join us for practical advice and hands-on activities focusing on physical science, including chemistry and physics.

Google Earth as an Educational Tool —Science Content— (Earth)

(Informal Education)

Napoleon C2, Sheraton

Richard J. Pollack (energy@smartcenter.org), **Elizabeth A. Strong** (strongli@westliberty.edu), and **Robert E. Strong** (strongro@westliberty.edu), West Liberty State College, Wheeling, W.Va.

Presider: Elizabeth A. Strong

Explore Google Earth as an educational tool for classrooms, museums, and camps. Learn how Google Earth is used to research and discover terrestrial impact sites.

Discovering Earth’s Layered Interior with Seismic Waves—Finally, an Activity That Addresses This Standard! —Professional Development— (Earth)

(Middle Level–High School)

Napoleon C3, Sheraton

Michael Hubenthal (hubenth@iris.edu), IRIS Consortium, Washington, D.C.

Michael Wyession (michael@wucore.wustl.edu), Washington University in St. Louis, Mo.

Explore new discoveries about Earth’s dynamic interior through an activity that allows students to discover, or dispel, the presence of Earth’s layers using seismic data.

Scale the Universe with GLAST —Science Content— (Gen)

(Middle Level–High School)

Napoleon D1&2, Sheraton

Sharla Dowding (sharla@tribcsp.com), NSTA Director, District XV, and Newcastle High School, Newcastle, Wyo.

Release the power—the Power of 10! Engage students in learning about scales with this classroom activity from NASA. Students sort and discuss magnitudes from submicroscopic to astronomical distances.

A Vivid Simulation for Human Population Growth —Science Content— (Bio)

(High School)

Rhythms II, Sheraton

William H. Leonard (leonard@clemsun.edu), Clemson University, Mountain Rest, S.C.

John E. Penick, 2003–2004 NSTA President, and North Carolina State University, Raleigh

Role-play an activity where five different families with different reproductive strategies generate dramatically different populations over a 100-year period. Take home a student sheet and teacher guide.

The Wolbachia Project: One Bacterial Species, a Few Interactions, and Many Techno-scientists Born! —*Science Teaching*— (Bio)

(Middle Level–College)

Rhythms III, Sheraton

Tamica A. Stubbs (tamica.stubbs@cms.k12.nc.us), E.E. Waddell High School, Charlotte, N.C.

Simon Holdaway (holdaway.simon@gmail.com), The Loomis Chaffee School, Windsor, Conn.

Presider: Tamica A. Stubbs

The Wolbachia Project is a research endeavor for classrooms that uses technology-based methodologies to explore relevant endosymbiotic relationships within a variety of model organisms.

Avoiding the Black Box: Using Low- and High-Tech Approaches in Inquiry —*Science Teaching*— (Phys)

(High School)

Salons 816 & 820, Sheraton

Lauren Johanna Kaupp, University of Hawaii-Manoa, Honolulu

Explore physics concepts with low- and high-tech methods to create a framework for inquiry and a context for discussing conscientious usage of technology.

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- Master of Science degree earned in two years
- little time spent away from home (8-10 days in the field)
- MSU in-state tuition rate offered to all students

GEOSCIENCES DISTANCE LEARNING PROGRAMS

www.msstate.edu/dept/geosciences/distance.html

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

Mississippi State University does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation or group affiliation, age, disability, or veteran status.



Mississippi State
UNIVERSITY

Division of Academic Outreach
Continuing Education

9:30–10:30 AM EXHIBITOR WORKSHOPS

Project-Based Inquiry Science: A New Middle School Science Program—From a Science Educator’s Point of View (Bio)

(Grades 6–8)

Room 212, Convention Center

Sponsor: It’s About Time

Mary Starr and **Joseph Krajcik**, The University of Michigan, Ann Arbor

From a cognitive scientist’s point of view, we will review what has been discovered about how middle school students learn best and about how this research has been put into practice in real-world classrooms. In PBIS, students investigate scientific content and learn science practices while addressing project challenges or answering driving questions that matter to them. Not only do students learn the required content, they also learn scientific reasoning and practice skills in ways that help them apply the content they are learning. By using the latest research, PBIS enhances transferable learning of both science content and skills.

Tough Topics in Physics: Conservation of Energy —Science Teaching— (Phys)

(Grades 6–12)

Room 218, Convention Center

Sponsor: PASCO Scientific

Geoffrey Clarion, PASCO Scientific, Roseville, Calif.

Explore PASCO’s state-of-the-art science teaching solutions to one of the toughest aspects of physics investigations—conservation of energy. Participate in standards-based probeware lab activities from PASCO’s new physics curriculum. See how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

Tough Topics in Biology: Enzymes —Science Teaching— (Bio)

(Grades 6–12)

Room 219, Convention Center

Sponsor: PASCO Scientific

Ryan Reardon, Alabama School of Fine Arts, Birmingham

Let’s explore PASCO’s state-of-the-art science teaching solutions to one of the toughest aspects of biological investigations—enzymes. Participate in standards-based probeware lab activities from PASCO’s new biology curriculum. See how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

Visit NSTA Avenue at Booth #1030.

Learn about member benefits,
products and services, programs,
and partners...all created for you!



NSTA National
Science
Teachers
Association



NSTA National
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Share with Others

- **NSTA Membership.** Access high-quality educational materials and professional development opportunities. Pick up a sample journal, your district ribbon, and a free lapel pin.
- **Leadership Opportunities.** Submit your name for nomination to become a candidate on a committee, review board, or the NSTA Board of Directors and Council.
- **NSTA Student Chapters.** Start a student chapter at your college or university.

Enhance Your Skills

- **NSTA Learning Center.** Select high-quality online learning opportunities to build content knowledge. Use our suite of tools for self-assessment and to document your progress.
- **NSTA Symposia.** These ticketed conference workshops include presentations and classroom activities by NSTA partner organizations as well as online follow-up in the form of web seminars and a discussion listserv.
- **Web Seminars.** Update your content knowledge with these free, 90-minute, live online presentations. Voice questions and share in rich chat conversations with the presenters and other educators.
- **SciGuides.** Explore online resources and lessons organized by grade level and specific content themes. All are pre-evaluated and aligned with the National Science Education Standards.

Add Your Voice

- **Building a Presence for Science.** Learn how you and your school can get connected to local, state, and national professional development opportunities and resources focused on curriculum, assessment, and instruction.

Expand Your Mind

- **NSTA Press®** publishes 20 new titles each year. Visit the Science Bookstore to view the newest releases, best sellers, and texts that puts your professional development in your hands and in your classroom. Current authors will be there to discuss their books and do signings. For those who have a book idea, submit it to NSTA, at <http://mc.manuscriptcentral.com/instapress>.
- **SciLinks®.** Link to science resources on the internet. Expert science educators recommend sites with accurate information and effective pedagogy—the best content available online.

Distinguish Yourself

- **NSTA Awards.** Compete for awards from 17 programs, ranging from kindergarten to college.
- **Toshiba/NSTA ExploraVision® Awards.** This team-based K–12 competition awards up to \$240,000 in savings bonds annually.
- **Toyota TAPESTRY Grants for Science Teachers.** Share in \$550,000 in grants available in 2009. Fifty large grants of up to \$10,000 each and 20–25 mini-grants of \$2,500 will be awarded.
- **THE DUPONT CHALLENGE© Science Essay Competition.** This competition for grades 7–12 students promotes scientific literacy and inspires them to excel. Winners receive cash prizes and an expenses-paid trip to The Walt Disney World® Resort and the Kennedy Space Center.
- **Siemens We Can Change the World Challenge.** Siemens, Discovery Education, and NSTA are pleased to introduce middle school teachers to the Siemens “We Can Change the World Challenge,” the premier national student sustainability competition. Enhance your life science curriculum with a unique, hands-on way to engage students in developing actionable local solutions for a “greener” world, and learn how you and your students can win exciting prizes!

9:30–11:00 AM TEACHER RESEARCHER DAY FEATURED PRESENTATION

Lenses for Looking at Videos of Science Teaching and Learning (Gen)

(General)

Acadia, New Orleans Marriott

Speaker: **Kathleen Roth** (kathyr@lessonlab.com until July 31; kroth@bscs.org after July 31), Director and Chief Scientist, LessonLab Research Institute, Santa Monica, Calif.

I will start with a brief description of the Science Teachers Learning from the Lesson Analysis research study that demonstrated the importance of developing teachers' ability to analyze science teaching through two different lenses: the science content storyline lens and the student thinking lens. Participants will be engaged in learning about these lenses and their value through analysis of videotaped K–8 science lessons. The videos will include my classroom as well as lessons videotaped during the TIMSS Video Study of Science Teaching.

Kathleen Roth, PhD, is Director and Chief Scientist at LessonLab Research Institute in Santa Monica, California, where she directed the groundbreaking TIMSS Science Video Study and is currently the principal investigator for three NSF-funded projects. Dr. Roth uses videocases of K–8 science teaching to help preservice and inservice teachers deepen their understandings of science content and effective science teaching practices.

9:30–11:00 AM PRESENTATION

SESSION 1

PDI

McREL Pathway Session: Addressing Student Misconceptions (Preconceptions)

—Science Teaching—

(Gen)

(General)

Room 346, Convention Center

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

Susan B. Koba, Science Education Consultant, Omaha, Neb.

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

9:30–11:30 AM PRESENTATIONS

SESSION 1

PDI

FHL Pathway Session: Nature Journals and Field Guides: Tools for Linking Science and Literacy

—Science Teaching—

(Bio)

(Elementary–Middle Level/Informal Education)

Room 338, Convention Center

Mark Baldwin (mbaldwin@rtpi.org), Roger Tory Peterson Institute of Natural History, Jamestown, N.Y.

Learn how to link nature journals as tools to propel inquiry with making field guides as tools to promote literacy.

SESSION 2

PDI

FI Pathway Session: Questioning Strategies Consistent with Assessment for Learning

—Assessment—

(Phys)

(General)

Room 339, Convention Center

Ruth Anderson (ruthanderson@facetinnovations.com) and **Jim Minstrell** (jimminstrell@facetinnovations.com), FACET Innovations, Seattle, Wash.

Eric Magi (*ericm@spokaneschools.org*), Spokane (Wash.) Public Schools
Learn how to conduct discussions that give teachers information about student learning and learning needs. We'll address the difficulties of creating a questioning environment and at the same time encouraging and supporting people as they express their ideas.

SESSION 3

PDI

WestEd Pathway Session: A Professional Learning Community Strategy: Rubric Development/Feedback Loops —Assessment— (Gen)

*(General)**Room 341, Convention Center*

Kathy DiRanna (*kdirann@wested.org*), WestEd, Santa Ana, Calif.

Melissa Smith (*melissa.smith@leusd.k12.ca.us*), K–12 Alliance, Santa Ana, Calif.

Demystify student success! Learn a collaborative process that includes the development of rubrics for student work, planning interventions, and providing feedback for students.

9:30 AM–12 Noon **WORKSHOP**

NSTA Multicultural/Equity in Science Education Division: Enabling Students to Learn Science —Professional Development— (Gen)

*(Middle Level–High School)**Ascot, Hilton*

Vanessa Westbrook (*vwestbrook@mail.utexas.edu*), NSTA Director, Multicultural/Equity in Science Education, and The University of Texas at Austin

Barbara Taylor (*barbara_taylor@mail.utexas.edu*), The University of Texas at Austin

Come join an in-depth discussion that addresses ways to encourage students to recognize their role in controlling their learning in a science classroom.

9:30 AM–12:30 PM **PRESENTATION**

SESSION 1

PDI

Exploratorium Pathway Session: Teaching Inquiry-based Earth Science Using Student-generated Field Investigations —Science Teaching— (Earth)

*(General)**Room 349, Convention Center*

Lee Schmitt (*lschmitt@gw.hamline.edu*), Hamline University, St. Paul, Minn.

Kate Rosok, Burnsville High School, Burnsville, Minn.

Marlene Schoeneck (*mschoeneck@isd547.com*), Parkers Prairie High School, Parkers Prairie, Minn.

Thomas H. Smith (*tsmith@alexandria.k12.mn.us*), Jefferson High School, Alexandria, Minn.

Mark Ryan, Willow Creek Middle School, Rochester, Minn.

Ron DuFrene, Owatonna High School, Owatonna, Minn.

Find out about the Minnesota TIMES project, where students develop content-rich field investigations within their earth science curriculum. Be prepared to go outdoors and experience the process.

10:00–11:00 AM **PRESENTATION**

SESSION 1

PDI

NGS Pathway Session: Collaborative Mapping and Analysis for Real-World Science Education —Science Content— (Env)

*(Middle Level–High School/Informal Education)**Room 347, Convention Center*

Ford Cochran (fcochran@ngs.org) and **Patricia Norris** (pnorris@ngs.org), National Geographic Society, Washington, D.C.

Coming soon—an online mapping and analysis tool for environmental investigations. Learn what NG FieldScope can enable your students to do.

10:00–11:15 AM EXHIBITOR WORKSHOP

Integrating Science and Literacy: Grades 1–6 —Science Content— (Gen)
(Grades 1–6) Room 208, Convention Center

Sponsor: Delta Education/School Specialty Science

Tom Graika, Consultant, Lemont, Ill.

Johanna Strange, Consultant, Richmond, Ky.

We'll show you various strategies and Delta products that can integrate reading and language arts into your science programs. Learn how your students can experience the enjoyment of learning science with Delta Science Modules and make the literacy connection. Receive a workshop packet and related Delta materials.

10:00–11:30 AM EXHIBITOR WORKSHOPS

CENCO Physics Presents: Resources for Teaching Physics (Phys)
(Grades 7–College) Room 202, Convention Center

Sponsor: Sargent-Welch

Ben Pearson (ben_pearson@vwr.com), Sargent-Welch, West Henrietta, N.Y.

The web has brought many different tools into the classroom. Come see resources that are out there for you to use for free! This session will focus on available listservs, blogs, forum boards, content wiki sites, podcasts, videos, and other Web 2.0 tools and destinations to help teach physics. In this session the experts at CENCO Physics will also present a few classroom demonstrations that are guaranteed to capture your students' attention. All participants will be eligible to win one of two \$500 CENCO gift certificates.

Literacy Strategies in the Sciences —Science Content— (Gen)
(Grades 6–12) Room 204/205, Convention Center

Sponsor: Wright Group/McGraw-Hill

Mitch Rosin, Wright Group/McGraw-Hill, Chicago, Ill.

This workshop will profile Wright Group/McGraw-Hill's new science textbooks. Discover literacy strategies that can be used to enhance reading comprehension and content acquisition in every science classroom. Participants will be provided with literacy materials that are designed for all students, including struggling readers, English language learners, and remedial learners.

Chemistry and the Atom —Science Content— (Chem)
(Grades 6–College) Room 210, Convention Center

Sponsor: CPO Science/School Specialty Science

Erik Benton, Patsy Eldridge, and Scott Eddleman, CPO Science/School Specialty Science, Peabody, Mass.

The discoveries of the structure of the atom and the periodic table are great detective stories. Our understanding of matter is so abstract that students have a hard time making sense of these concepts. Participants will experience innovative activities that give students with different learning styles opportunities to grasp atomic structure and the periodic table.

Introducing Inquiry Investigations™: Hands-On Inquiry Activities Focusing on Technology —Science Content— **(Gen)**

(Grades 7–10)

Room 213, Convention Center

Sponsor: Frey Scientific/School Specialty Science

Ken Rainis, Frey Scientific/School Specialty Science, Nashua, N.H.

Lisa Bowman, Mansfield, Ohio

Explore the new hands-on, active learning science modules and kits geared for students in grades 7–10. See how technology and inquiry help students understand essential science content in these areas: Forensics, Physical Science, Cellular World, Biotechnology, Genetics, Life's Kingdoms, Environmental Issues and Solutions, Chemistry, Earth's Resources, and Human Biology.

Elementary Super! Wow! Neat! Science by Ron Perkins —Science Content—

(Gen)

(Grades K–4)

Room 214, Convention Center

Sponsor: Educational Innovations, Inc.

Ron Perkins, Educational Innovations, Inc., Norwalk, Conn.

Sharing his best ideas in this fast-moving presentation of physical science activities in the elementary grades, Ron will demonstrate Educational Innovations products, enlighten you with their versatility, and entertain you with his humor. Topics include static electricity; density; and simple, safe chemical changes. Over 25 product door prizes. Seating is limited.

Drop the Lecture and Let Students Pick Up the Learning in AP® Science (Bio)

(Grades 10–12)

Room 215, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Tired of lectures, handouts, and chapter questions? This session challenges AP® science teachers to switch from teacher-centered techniques to student-centered experiences such as games, simulations, and model building. Participants rehearse how to use kinesthetic learning to increase critical thinking, plus gain strategies for developing a curriculum infused with higher-level learning.

Go APES! Explore Carolina's Quality AP® Environmental Science Series

(Env)

(Grades 9–12)

Room 216, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

What do water quality, air quality, and soil quality have in common? All three topics are explored in Carolina's newly revised, exciting AP® lab series kits. Join us and gain hands-on experience working with activities from these easy-to-use materials. Door prize.

Science Investigations: Students, Notebooks, and the Power of Inquiry (Bio)

(Grades K–6)

Room 217, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Interrogate suspects, search for clues, and make your case with science notebooks. Discover how the effective use of notebooks can move your class from boring to exploring. We'll explore how to scaffold a criminal case as students apply concepts they've learned. This session features a lesson from the STC PROGRAM™ unit Microworlds.

STEM: Activity Options for the Elementary and Middle Grades Science Classroom —Science Teaching— **(Gen)**

(Grades K–8)

Room 220, Convention Center

Sponsor: Pearson

Chuck McMillan, Huron, Mich.

This workshop will provide you with an introduction into what STEM is, give you some best practice examples you can use in your classroom, and provide pointers to help you refine the hands-on activities you currently use in your elementary/middle grades science class.

New Editions of *Physical Science* and *Integrated Science* —Science Teaching— **(Gen)**

(Grades 9–12)

Room 221, Convention Center

Sponsor: Pearson

Paul Hewitt, City College of San Francisco, Calif.

Suzanne Lyons, Mountain View High School, Mountain View, Calif.

Hewitt and his author team introduce two new programs: the brand-new *Conceptual Physical Science—Explorations*, and *Conceptual Integrated Science—Explorations*, which is physical science plus biology. The traditional approach of the first book will be contrasted with the integrated approach of the second.

Physics with Vernier —Science Teaching— **(Phys)**

(Grades 9–College)

Room 222, Convention Center

Sponsor: Vernier Software & Technology

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

Experiments such as sound waves, motion of a cart on a ramp, and video analysis from our popular *Physics with Vernier* lab book will be performed in this hands-on workshop. You will be able to try these experiments using LabQuest as a stand-alone device and on a computer. Experiments are appropriate for introductory, AP, IB, and college courses.

Engineering with Vernier —Science Teaching— **(Phys)**

(Grades 6–College)

Room 224, Convention Center

Sponsor: Vernier Software & Technology

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

See how Vernier sensors are used with Lego's NXT to build sensor-controlled robots such as a sunscreen tester, a magnet finder, a plant waterer, a hazardous waste detector, or an air compressor. In addition, we will provide an introduction to building advanced engineering projects using LabVIEW software and our SensorDAQ interface.

How to Get the Science Room You Want and Need! **(Gen)**

(General)

Room 225, Convention Center

Sponsor: Diversified Woodcrafts, Inc.

Brant Kelly (bkelly@diversifiedwoodcrafts.com), Diversified Woodcrafts, Inc., Suring, Wis.

How do you get the science room you need? Join us for an open discussion on techniques and information you need to make sure your new or renovated classroom meets your requirements once it is finally finished.

Making and Interpreting Topographic Maps **(Earth)**

(Grades 6–8)

Room 226, Convention Center

Sponsor: Lab-Aids, Inc.

Mark Koker, Lab-Aids, Inc., Ronkonkoma, N.Y.

Join us for a hands-on investigation that will provide you with a basic understanding of topographic maps. You will conduct this investigation using the Lab-Aids Topographic Model to construct contour lines and create a topographic map of an area. The investigation will illustrate the relationship between the contour lines on a topographic map and the actual shape of the land. This can be used to help determine an area's past and ongoing geologic processes and its suitability for various uses.

Practical Strategies for Engaging Today's Biology Student —Science Content—
(Bio)

(Grades 9–12)

Room 227, Convention Center

Sponsor: Houghton Mifflin Harcourt-Holt McDougal

Stephen Nowicki, Duke University, Durham, N.C.

Lory Heron, Holt McDougal, Indianapolis, Ind.

Join Dr. Stephen Nowicki, dean of undergraduate education at Duke University and author of *McDougal Littell Biology*, and D.J. West, national science consultant for McDougal Littell, as they share practical strategies for engaging today's high school biology student. They will address how to help students make sense of abstract biological concepts using innovative games and activities that give students fun, real-world opportunities to experience science beyond the book—no matter their learning style. Walk away with specific ideas and activities you can immediately put to use in your classroom.

AeroLab —Science Content—

(Phys)

(Grades 6–12)

Room 228, Convention Center

Sponsor: Academy of Model Aeronautics

Gordon Schimmel and **Art Ellis**, Academy of Model Aeronautics, Muncie, Ind.

Flight is always a topic of curiosity, offering opportunities for strong student interest. Aero-Lab lessons using simple foam and balsa aircraft are unique tools to teach Newton's laws and centripetal force, and to practice important math skills to determine average speed and acceleration. All labs are geared to national and state science standards. Participants will build and fly a model aircraft suitable for use in middle and high school physical science classrooms—flying models with lessons you can use on Monday!

Bio-Rad—Is There Molecular Evidence for Evolution? Protein Profiler Kit
—Science Teaching—
(Bio)

(Grades 9–College)

Room 230, Convention Center

Sponsor: Bio-Rad Laboratories

Stan Hitomi (professional_development@bio-rad.com) and **Kirk Brown** (professional_development@bio-rad.com), Bio-Rad Laboratories, Hercules, Calif.

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

GIS for Environmental Science Inquiry —Science Content—

(Env)

(Grades 3–College)

Room 231, Convention Center

Sponsor: ESRI

Joseph Kerski (jkerski@esri.com), ESRI, Redlands, Calif.

Roger T. Palmer (roger@gisetc.com), GISetc, Dallas, Tex.

Explore how and why GIS (geographic information systems) and other geospatial technolo-

gies (GPS and remote sensing) are essential in environmental science education and careers. Investigate local to global topics via practical classroom activities supporting science standards and inquiry. Receive free GIS software and classroom resources. For more information, see <http://edcommunity.esri.com>.

Stream Ecology: Slimy Leaves for Clean Streams

(Env)

(Grades 6–College)

Room 232, Convention Center

Sponsor: LaMotte Co.

Kristen S. Travers, Stroud Water Research Center, Avondale, Pa.

Investigate your local stream with an onion bag. Create a leaf pack and identify benthic macroinvertebrates that tell a story of water quality. Learn how to teach about human impact on stream water quality. Win a chance for a DVD video.

Research on the Effectiveness of Hands-On Experiments

(Bio)

(Grades 5–9)

Room 235, Convention Center

Sponsor: DNA Depot

Barbara J. Nealon (barbara.nealon@syncsd.org), Southern York County School District, Glen Rock, Pa.

Jack Chirikjian (info@edvotek.com), DNA Depot, Rockville, Md.

DNA Depot is committed to conducting research that follows a collaborative effort. DNA Depot believes that research should be closely linked to the classroom, that teachers should be action-researchers, and that an experimenting society should be created to remain competitive in the global economy. Join us for a look at research conducted with classroom teachers and their students on the effectiveness of DNA Depot middle school life science experiments designed to highlight major scientific concepts. We will discuss the assessment protocol and perform the middle school experiment entitled “How Does a Doctor Test for Lyme Disease.” Three experiments will be raffled off at the end of the workshop. Research on these experiments is supported by NIH NCRR grant #2R44RR021997.

Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools —Professional Development—

(Chem)

(Grades 9–College)

Room 236, 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 hands-on workshop using notebook computers and learn how to integrate state-of-the-art modeling into your teaching of AP chemistry. Free take-home CD with select demonstrations.

10:00 AM–12 Noon WORKSHOP

Teaching Controversial Topics in the Classroom: Dissecting the Louisiana Science Education Act —Science Teaching—

(Gen)

(General)

Windsor, Hilton

Louise S. Mead (mead@ncseweb.org), National Center for Science Education, Oakland, Calif.

Sarah B. Wise, University of Colorado at Boulder

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

President: Louise S. Mead

We will examine the legal, professional, and scientific perspectives of “academic freedom” bills such as the Louisiana Science Education Act.

10:00 AM–12 Noon EXHIBITOR WORKSHOP

Seeing Is Believing—Make the Invisible Visual in Chemistry —*Science Teaching—* (Chem)

(Grades 6–12)

Room 244/245, Convention Center

Sponsor: Flinn Scientific, Inc.

Jamie Benigna, Flinn Scientific, Inc., Batavia, Ill.

Flinn Scientific’s *Morning of Chemistry* is a must-SEE event. These demonstrations are a sight to behold. Learn how to use demonstrations to make the invisible processes between atoms and molecules more visual. As chemists, we envision the world as a constant interaction between particles. You can use simple, visually appealing demonstrations to make the atomic processes visibly apparent. Jamie’s demonstrations make abstract concepts come to life! Discover how to help your students see the delicate dance of atoms and molecules in the world around us. View it for yourself—Seeing Is Believing! Handouts.



Come to FLINN SCIENTIFIC'S *Morning of Chemistry*

Seeing is Believing— Make the Invisible Visual in Chemistry!

By Jamie Benigna, The Roeper School, Birmingham, MI

Flinn Scientific’s *Morning of Chemistry* for 2009 is a must-SEE event! Use these eye-catching chemical demonstrations to help your students visualize the invisible processes between atoms and molecules. As chemists, we envision the world as a constant interaction between particles; now you can use simple, visually-engaging demonstrations to make atomic processes more apparent.

Jamie’s creative demonstrations make abstract concepts come to life! Discover how to help your students understand the delicate dance of atoms and molecules in the world around us. Come to Flinn Scientific’s *Morning of Chemistry* and see for yourself—Seeing is Believing! Handouts will be provided.

Friday, March 20, 2009 • 10:00 a.m. – 11:30 a.m.

Room 244/245, Ernest N. Morial Convention Center

Plan Now to Attend Flinn’s *Morning of Chemistry*.

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10:00 AM–3:00 PM **MEETING**

ASMC Advisory Board Meeting

(By Invitation Only)

St. Claude, JW Marriott

For more information, visit www.kitsupport.org.

10:30–11:30 AM **PRESENTATION**

SESSION 1

AoA Session: 21st-Century Skills (NMLSTA) —Science Teaching— (Gen)
(Middle Level) Room 252, Convention Center

Dale J. Rosene (ishtar@aglp.com), Marshall Middle School, Marshall, Mich.

Join members of the National Middle Level Science Teachers Association for an open conversation—share research, teaching strategies, materials, and ideas surrounding important 21st-century understandings and behaviors.

Starting an NSTA Student Chapter: Faculty & Student Perspectives

**Saturday
March 21st**

**9:30–10:30 AM
New Orleans Marriott
Jackson**

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.



National
Science
Teachers
Association **NSTA**

10:30 AM–12 Noon SHELL SCIENCE SEMINAR

Marine Science into the Classroom: Oceanography via the Gulf of Mexico Dead Zone (Env)

(General)

Room 352, Convention Center



Scientist

Nancy N. Rabalais

Executive Director and Professor

Louisiana Universities Marine Consortium

Chauvin, La.

nralais@lumcon.edu

Presider: Paul Johnson (*pjohnson@tpsd.org*), Program Coordinator, NSTA New Orleans National Conference on Science Education, LSTA Past President, and Terrebonne Parish Science Specialist, Houma, La.

The continental-scale Mississippi River watershed and the second largest human-caused dead zone in the world's coastal ocean provide an excellent backdrop for teaching science through interdisciplinary earth and biological sciences. We'll look at the history, causes, and consequences of hypoxia, oxygen-depleted waters, on the northern Gulf of Mexico continental shelf.

Nancy N. Rabalais, PhD, is executive director and professor at the Louisiana Universities Marine Consortium. Her research interests include the dynamics of hypoxic environments, interactions of large rivers with the coastal ocean, estuarine and coastal eutrophication, environmental effects of habitat alterations and contaminants, and science policy.

Among her many current responsibilities, she serves on the NRC Review of Water and Environmental Research Systems (WATERS) Network, NOAA's Coastal Restoration and Enhancement Through Science and Technology program, and Gulf of Mexico Regional Association for Ocean US. Dr. Rabalais remains an active member of her research team, participating in research cruises, diving operations, data synthesis, and publications. She team teaches a video long-distance course for Louisiana universities entitled "Changing Coastal Oceans."

10:30 AM–12 Noon EXHIBITOR WORKSHOP

How Safe Is Your Lab?

(Gen)

(Grades 3–College)

Room 211, Convention Center

Sponsor: Fisher Scientific Education

Presenter to be announced

Not sure how safe your lab is? You are not alone. At Fisher Scientific Education, we understand that you face laboratory safety challenges every day. We can help. We have the products and support materials you need to overcome these challenges. During this dynamic workshop we will highlight what you need to know to maintain a safe and compliant lab. We'll introduce you to the Fisher Scientific Lab Safety Program that includes the new *Fisher Scientific Laboratory Safety Resource Manual*, a comprehensive resource guide outlining lab safety requirements and training, and the new *Fisher Scientific 2009 Safety and Laboratory Fundamentals Catalog*, a quick resource for equipment, supplies, and products designed to help meet your laboratory and safety needs.

10:30 AM–12:30 PM PRESENTATION



SESSION 1

SC Pathway Session: The Secret Lives of Science Coaches —Professional Development— (Gen)

(General)

Room 348, Convention Center

Alice Gilchrist (agilchrist@lander.edu), Upper Savannah Regional Math and Science, Greenville, S.C.

Dorothy Earle, South Carolina Coalition for Mathematics & Science, Greenville

Wondering what it's really like to be a school-based science coach? Join us in a conversation about coaching lessons we've learned in classrooms, hallways, cafeterias, and other interesting places of learning.

11:00 AM–12 Noon PRESENTATIONS

SESSION 1

Attention Science Teachers and Administrators! Learn How to Win \$\$\$\$ by Winning One of Many NSTA Awards! (Gen)

(General)

Room 237, Convention Center

Ruth Ruud, NSTA Awards and Recognition Chair, Fairview, Pa.

Attend this session and learn how to complete a winning application for one of NSTA's many awards! You will receive step-by-step directions and learn how the applications are scored.

SESSION 2



Empowering Elementary Teachers to Teach and Do Science —Professional Development— (Gen)

(General)

Room 240/241, Convention Center

John W. Guyton (jguyton@cfr.msstate.edu) and **Renee Clary** (rclary@geosci.msstate.edu), Mississippi State University, Mississippi State, Miss.

We'll share a technique you can use to successfully increase elementary teachers' enthusiasm and reduce their concerns about teaching science.

SESSION 3



ISTE: What Should Administrators Know and Be Able to Do with Technology in the Science Classroom? —Professional Development— (Gen)

(General)

Room 242, Convention Center

Robert Hancock (robert.hancock@selu.edu), Southeastern Louisiana University, Hammond

Ben Smith (ben@edtechinnovators.com), Red Lion Area High School, Red Lion, Pa.

Jared Mader (jared@edtechinnovators.com), Red Lion (Pa.) Area School District

As we transition from the Industrial Age to the Digital Age, administrators will need to have the knowledge, skills, and disposition to prepare students for future success. ISTE developed the National Educational Technology Standards for Administrators (NETS•A) in 2002, following the wide adoption of the NETS for Students and Teachers. Bring your laptop to this interactive roundtable discussion, learn more about the NETS for Administrators, and provide ISTE feedback to revise the NETS•A so they reflect the demands of the Digital Age.

SESSION 4

AoA Session: 21st-Century Skills (AMSE) —Professional Development— (Gen)
(General) Room 253, Convention Center

Cherry C. Brewton (cbrewton@georgiasouthern.edu), AMSE President, and Georgia Southern University, Statesboro

Join members of the Association for Multicultural Science Education for an open conversation—share research, teaching strategies, materials, and ideas surrounding important 21st-century understandings and behaviors.

SESSION 5

You Wouldn't Pollute Your Body, Why Pollute Your Brain? Teaching About Substance Abuse from an Environmental Perspective —Science Teaching— (Bio)
(Middle Level) Room 254, Convention Center

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

Wondering how to teach science standards while also teaching why different commonly abused substances are harmful? Learn about popular, free web materials relating to alcohol, club drugs, and inhalants.

SESSION 6

NIH Symposium Follow-Up Session: The Bioethics of Animals in Research —Science Content— (Bio)

(High School) Room 257, Convention Center

Dave Vannier (vannierd@od.nih.gov) and **Bruce Fuchs** (fuchsb@od.nih.gov), National Institutes of Health, Bethesda, Md.

Examine the ethics of genetically modifying animals for human gain. Respect and harms/benefits are presented in a new model for teaching bioethics in high school.

SESSION 7

PDI **LHS Pathway Session: Alternative Energy for Transportation: Hydrogen and Fuel Cells —Science Content— (Chem)**

(High School) Room 337, Convention Center

Barbara Nagle (bnagle@berkeley.edu), Lawrence Hall of Science, University of California, Berkeley

Learn about the chemistry, environmental science, and issues related to the use of hydrogen and fuel cells for transportation. Take home classroom activities on alternative energy for transportation and how hydrogen fuel cells work.

SESSION 8

PDI **HRI Pathway Session: Knowing What They Know: Transferring the Item-writing Workshop to Your School/District, Part 2 —Professional Development— (Gen)**

(Supervision/Administration) Room 342, Convention Center

Sean Smith and **Melanie Taylor** (mtaylor@horizon-research.com), Horizon Research, Inc., Chapel Hill, N.C.

Receive resources for starting and sustaining a professional development experience for teachers focused on writing assessment items. See page 42 for part 1.

SESSION 9 (two presentations)

(Elementary–Middle Level)

Room 344, Convention Center

Presider: Peter Rillero (*rillero@asu.edu*), Arizona State University, Glendale

The Apple Mummy Meets FLI (RIP) —Science Teaching— (Gen)

Cindy Colomb (*ccolomb@fms.k12.nm.us*), Farmington (N.Mex.) Municipal Schools

Learn the effect of a school district’s coupling of a 1:1 tech-based learning program (Farmington Learning Initiative or FLI) with a research-based scientific inquiry program (RIP)

Engaging Gifted and High-Ability Learners in Science: Using Problem-solving Skills and Innovative Technologies —Science Teaching— (Gen)

Leah Dawn Parker (*leah@journeysacademy.com*), Journeys Academy, Anthem, Ariz.

Learn to engage gifted and high-ability learners in science—the subject that most intrigues them—by employing problem-solving skills and using innovative technologies.

SESSION 10

A Christmas Science Show: A Student NSTA Outreach (Gen)

(Preschool–Middle Level)

Room 345, Convention Center

Paul E. Adams (*padams@fhsu.edu*) and **Eryn A. Norton** (*eanorton@scatcat.fhsu.edu*), Fort Hays State University, Hays, Kans.

We will share selections of past FHSU Student NSTA Chapter Christmas programs to illustrate how we conduct and plan our community event.

SESSION 11

PDI

UNV Pathway Session: Science Notebooks for English Language Learners —Science Teaching— (Gen)

(General)

Room 350, Convention Center

Lori A. Fulton (*fultola@interact.ccsd.net*), Jay Jeffers Elementary School, Las Vegas, Nev.

Explore the development and use of science notebooks with primary-aged students who are ELL. I’ll share research, strategies, and ideas and show examples and short vignettes of the developmental process and use of science notebooks within a Title I school with very high LEP and ELL populations.

SESSION 12

Using FIRST Lego League to Promote Global Awareness Through Robotics —Science Teaching— (Gen)

(Elementary–Middle Level/Informal Education)

Room 351, Convention Center

Kate A. Baird (*kabaird@iupuc.edu*) and **Aija Pocock**, Indiana University-Purdue University, Columbus

Presider: G. Michael Bowen, Mount Saint Vincent University, Halifax, N.S., Canada

We will review the FIRST Lego League commitment to global awareness through “Sport For the Mind” and annual international challenges.

SESSION 13

How We Create K–6 Classrooms That Embrace Science Inquiry: Helping Students Think and Work As Scientists —Science Teaching— (Gen)

(General)

Room 355, Convention Center

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

Explore what science inquiry encompasses and how to create a classroom environment that embraces it.

Great Workshops from Fisher Science Education at NSTA New Orleans!

Please join us in Room 211 to learn more about these engaging and informative topics.

Fun and Games That Help Improve Test Scores

Friday, March 20th, 8:00 to 9:30 am Room 211

Attendees gain hands-on experience with a unique, teacher-designed interactive learning game for Grades 1 to 8. FREE SAMPLES for all attendees. Presented by New Path Learning®.

How Safe is Your Lab?

Friday, March 20th, 10:30 am to 12:00 pm Room 211

Saturday, March 21st, 8:00 to 9:30 am Room 211

Find out how to maintain a safe and compliant lab with the Fisher Science Education Lab Safety Program.

Using Technology in Your Science Classroom:

How to Really Hook Your Students

Friday, March 20th, 1:30 to 3:00 pm Room 211

Learn how to encourage student involvement and enrich your curriculum using a digital camera in the classroom. Presented by Ken-A-Vision®.

Green Chemistry in the Classroom

Friday, March 20th, 4:00 to 5:00 pm Room 211

Incorporate green chemistry into your curriculum with hands-on demonstrations presented by Fisher Science Education and Beyond Benign.

New High School Curriculum Mastery® Games

Saturday, March 21st, 10:30 am to 12:00 pm Room 211

Engage your students with this board-game-based learning system that covers NSES standards for Grades 9 to 11. FREE SAMPLES for all attendees. Presented by New Path Learning®.

PCR Made Easy

Saturday, March 21st, 1:30 to 3:00 pm Room 211

Bring the polymerase chain reaction into your classroom using the EdvoCycler™ to create single-session lab experiments that won't break your budget. Presented by Edvotek®.



Fisher Science Education

Part of Thermo Fisher Scientific

Making Science Matter®

SESSION 14

Elementary Inquiry Labs: They May Not Be Rocket Science, But They May Provide Our Next Generation of Rocket Scientists! —*Science Teaching*— (Gen)
(Preschool/Elementary) Room R05, Convention Center

Richard Ellenburg (*ellenburgra@aol.com*), Camelot Elementary School, Orlando, Fla.
Learn how to create successful inquiry-driven elementary science labs. We'll look at how to effectively organize, schedule, and create an inquiry-based curriculum on a budget.

SESSION 15 (two presentations)

(General) Elmwood, Hilton

Augmented Reality: Games That Teach and Inspire —*Science Teaching*— (Gen)
Dan Toomey, Edgewood Campus School, Madison, Wis.

Amy Schiebel (*aschiebel@edgewood.edu*), Edgewood College, Madison, Wis.
Investigate the potential for using augmented reality games on handheld computers in inquiry-based science learning for conceptual change.

Promoting Happiness in Science Classrooms: Implications for Achievement and Subjective Well-Being —*Science Teaching*— (Gen)

Diane D. Walker (*dwalker@nmsu.edu*), New Mexico State University, Las Cruces
Christina N. Dragon (*cdragon@email.smith.edu*), Smith College, Northampton, Mass.
Contribute to student and teacher subjective well-being by incorporating strategies that reduce stress and result in improved science conceptual understanding.

SESSION 16

See the Light with a Math and Science Family Night! —*Science Teaching*— (Gen)
(General) Magnolia, Hilton

Kelly W. Rahn (*krahn@effingham.k12.ga.us*) and **Trish H. Thompson** (*tthompson@effingham.k12.ga.us*), Effingham County Middle School, Springfield, Ga.
Teachers from southeast Georgia will share how they planned a successful program that sparked an interest in math and science.

SESSION 17

Lab Investigations as a Social Justice Issue: It's as Easy as ABC (Activity Before Concept) —*Science Teaching*— (Gen)
(General) Versailles Ballroom, Hilton

Arthur Eisenkraft (*eisenkraft@att.net*), 2000–2001 NSTA President, and University of Massachusetts, Boston
Most people agree that laboratory experiences are an important component of school science programs. Labs are also an equity issue and should be offered to all science students. The National Academy recently published a study entitled “America’s Lab Report” critiquing the status of today’s labs. The report finds fault with many of the current lab practices and provides direction from quality lab experiences to guide us to better practice.

SESSION 18

STEM Transitions: Enhancing Mathematics and Science Rigor Through Evidence-based Curriculum Projects —*Science Teaching*— (Gen)
(High School–College) Conde, JW Marriott

Holly A. Doughty (*hdoughty@cord.org*) and **Ann-Claire Anderson** (*anderson@cord.org*), Center for Occupational Research and Development, Waco, Tex.
Let us introduce you to a U.S. Department of Education–funded initiative involving the

development of integrated, contextual curriculum projects that converge technical and academic concepts within STEM-related clusters.

SESSION 19**ASTE Session: The Role of Life Experience in an Alternative Math and Science Teacher Preparation Program (ACT!) —*Science Education System*— (Gen)***(Middle Level–High School)**Frontenac, JW Marriott***Michael E. Beeth** (*beeth@uwosh.edu*), The University of Wisconsin Oshkosh**Tammy Ladwig** (*tammy.ladwig@uwc.edu*), University of Wisconsin-Fox Valley, Menasha

This presentation highlights some of the values that individuals with real-world experience bring to the field of math or science teaching.

SESSION 20**Motivating College Students to Be Science Teachers: Starting an NSTA Student Chapter —*Professional Development*— (Gen)***(College)**Ile de France II, JW Marriott***Jeremy Ervin** (*erwinja@muc.edu*), **Sarah Brockett, Sara Daley, Ryan McFeely, Jen Limbert,** and **Bo Rounds**, Mount Union College, Alliance, Ohio

Presider: Jeremy Ervin

College students and faculty advisors will present the benefits and the how-to of starting an NSTA student chapter.

SESSION 21**Constructivist Science: Thinking Inside and Outside the Box of Prior Conceptions —*Professional Development*— (Gen)***(Middle Level–College)**Maurepas, JW Marriott***Thomas P. O'Brien** (*tobrien@binghamton.edu*), Binghamton University, Binghamton, N.Y.

Engage in constructivist science that teaches students (and teachers) the nature of science and human cognition via safe, simple, economical, enjoyable, effective, and relevant (S2EE2R) activities.

SESSION 22 (two presentations)*(General)**Orleans, JW Marriott***Causal Patterns in Density and Ecosystems: Teacher Professional Development Website —*Professional Development*— (Gen)****Yu-Tzu Debbie Liu** (*yul826@mail.harvard.edu*), Harvard Graduate School of Education, Cambridge, Mass.

Explore our new NSF-TPC-funded website for middle school teachers on teaching causal patterns to avoid misconceptions in ecosystems and density. Learn about free curricula.

A Collaborative Professional Development Approach Integrating Science with Art and Literacy in the Elementary Classroom: Practice Becomes Research; Research Becomes Practice —*Science Teaching*— (Gen)**Monique Poldberg** (*monique.poldberg@leusd.k12.ca.us*), Butterfield Elementary School, Lake Elsinore, Calif.**Nancy Andrzejczak** (*nancy.andrzejczak@leusd.k12.ca.us*), Lake Elsinore (Calif.) Unified School District

Our research shows that successful science, literacy, and art integration depends on inten-

sive professional development. Such integration, in turn, improves achievement in all three areas.

SESSION 23 (two presentations)

(General)

Rosalie, JW Marriott

What If...? Creativity Applied to Science! —Professional Development— (Gen)

Carolyn Sant Angelo (*carolyn.santangelo@browardschools.com*), Tequesta Trace Middle School, Weston, Fla.

Project-based learning can electrify students while synthesizing their science content, ingenuity, and individualism. PBL handouts include extrasolar planets, technology initiatives, unique science fairs, and more!

Incorporating the Nature of Science Throughout the Entire School Year —Science Teaching— (Gen)

Jerrid W. Kruse (*jerridkruse@gmail.com*), Iowa State University, Sioux City

The nature of science is often taught as one unit/chapter. Come discuss tools/strategies you can use to incorporate the nature of science all year to promote deeper understanding.

SESSION 24

Teacher Researcher Day Session: Using Student Discourse to Improve Learning —Science Teaching— (Phys)

(High School)

Acadia (Group 1), New Orleans Marriott

Charles H. Sabatier (*charles.sabatier@fcps.edu*), Mount Vernon High School, Alexandria, Va.

Matthew Randall (*matthew.randall@renton.wednet.edu*), Lindbergh High School, Renton, Wash.

We will focus on methods to promote student discourse and anecdotal results observed from using these strategies in different parts of the learning cycle.

SESSION 25 (two presentations)

(General)

Acadia (Group 2), New Orleans Marriott

Teacher Researcher Day Session: Student Performance in a Freshman Modeling-based Physics Curriculum —Science Teaching— (Phys)

Kathy L. Malone (*kmalone@shadysideacademy.org*), Shady Side Academy, Pittsburgh, Pa.

A case study comparison of student performance shows that ninth-grade students who have completed one year of instruction in modeling-based physics scored significantly higher on scientific reasoning and mathematical skills tests when compared to ninth-grade students who have completed one year of instruction in inquiry-based biology.

Teacher Researcher Day Session: Teacher Development Through Classroom-based Research —Professional Development— (Gen)

Michael E. Jabot (*jabot@fredonia.edu*), SUNY Fredonia, N.Y.

Ellen Foley, Wheelock Primary School, Fredonia, N.Y.

Amy Lauer, Fredonia Middle School, Fredonia, N.Y.

Scott Foley and **Chris Prevet**, Silver Creek Elementary School, Silver Creek, N.Y.

Gregory Lauer, Fredonia High School, Fredonia, N.Y.

We will report on the impact of a multi-year initiative of teacher professional development based on classroom-based research.

SESSION 26 (two presentations)*(General)**Acadia (Group 3), New Orleans Marriott*

Presider: Christina Siry (chrissiry@gmail.com), Manhattanville College, Purchase, N.Y.

Teacher Researcher Day Session: Using Teacher Research to Strengthen Science Teaching and Learning —Professional Development— (Gen)

Christina Siry (chrissiry@gmail.com), Manhattanville College, Purchase, N.Y.

Three elementary teachers explore the role of science in the curriculum and discuss how they use classroom-based inquiry to support professional growth and development.

Teacher Researcher Day Session: A Partnership for Learning About Elementary Science Teaching —Professional Development— (Gen)

Christina Siry (chrissiry@gmail.com), Manhattanville College, Purchase, N.Y.

We will discuss our field-based science methods course in which preservice teachers, inservice teachers, and the course instructor learn about teaching science together in elementary classrooms.

SESSION 27

Teacher Researcher Day Session: Student Learning in Your Classroom: Developing a Research Project —Professional Development— (Gen)

*(Elementary–High School)**Acadia (Group 4), New Orleans Marriott*

Erin E. Peters (epeters1@gmu.edu), George Mason University, Fairfax, Va.

Want to conduct an investigation of student learning in your classroom but don't know where to start? Come learn about the process of educational research.

SESSION 28

Comparisons of U.S. and International Student Energy Use and Awareness Project —Science Teaching— (Env)

*(High School)**Bonaparte, New Orleans Marriott*

Nailam H. Elkhechen (nelkhechen@ts4arts.org), Toledo School for the Arts, Toledo, Ohio

Rolinda D. LeMay (rolinda.lemay@utoledo.edu), University of Toledo, Ohio

Students research, blog internationally, survey, and compare their own energy usage to others, increasing their content knowledge of alternative energy, power generation, and global issues.

SESSION 29

Informal Science Day Session: The Perfect Place for Science Education: Out of School —Science Teaching— (Gen)

*(Informal Education)**Carondelet/Group 1, New Orleans Marriott*

Linda Colón, Educational Equity Center at AED, New York, N.Y.

Jason S. Freeman (scienceafterschool@gmail.com), Coalition for Science After School, Berkeley, Calif.

Presider: Maryann Stimmer, Educational Equity Center at AED, New York, N.Y.

After-school hours provide the perfect venue for inquiry-based hands-on education. Hear from a panel of experts with diverse experiences in out-of-school science education.

SESSION 30

Informal Science Day Session: Bridging the Gap Between Everyday and Scientific Explanations of Evolution —Professional Development— (Gen)

*(General)**Carondelet/Group 2, New Orleans Marriott*

Martin Weiss (mweiss@nyscience.org), New York Hall of Science, Flushing
E. Margaret Evans (evansem@umich.edu), University of Michigan, Ann Arbor
Martin Storksdieck (storksdieck@ilinet.org), Institute for Learning Innovation, Edgewater, Md.

Presider: Terri Stern, Yale Peabody Museum of Natural History, New Haven, Conn.
Discover the latest exciting developmental discoveries from “Life Changes,” an NSF-funded study about how children learn evolution. Discover how to teach your students complex science ideas.

SESSION 31

Informal Science Day Session: Online Games as Learning Tools —Science Teaching— **(Gen)**

(General)

Carondelet/Group 3, New Orleans Marriott

Ro Kinzler, American Museum of Natural History, New York, N.Y.

Eric Marshall (emarshall@nyscience.org), New York Hall of Science, Queens

Can students learn by playing video games? This panel discussion showcases game environments developed by museums, research labs, and other noncommercial entities.

SESSION 32 (two presentations)

(Informal Education)

Carondelet/Group 4, New Orleans Marriott

Informal Science Day Session: GET City! Green Energy Technologies in the City —Science Content— **(Env)**

Summer Lindzey, Michigan State University, East Lansing

The GET City or Green Energy Technologies in the City program (getcity.org) offers more than 40 urban students a year over 200 hours of after-school and summer experiences in the area of green energy technologies in the city while also providing them with advanced information technology skills.

Informal Science Day Session: Developing Successful Museum/Research Center Collaborations: The NSEC Based at Harvard and the Museum of Science, Boston —Science Content— **(Phys)**

Kathryn A. Hollar (hollar@seas.harvard.edu), Harvard University, Cambridge, Mass.

The NSF-funded Nanoscale Science and Engineering Center (NSEC), based at Harvard, partners with the Museum of Science, Boston (MOS) to engage researchers with the public. I will detail activities developed by the partnership, including products for K–12 and the public, and training for researchers.

SESSION 33

Secret to Urban AP Success —Science Education Program— **(Gen)**

(High School/Supervision)

Jackson, New Orleans Marriott

Allison Scheff (allison.scheff@umb.edu), Boston Science Partnership, Boston, Mass.

Marilyn R. Decker, Jefferson County Public Schools, Louisville, Ky.

Kristen Cacciatore (kcacciatore@boston.k12.ma.us), East Boston High School, Boston, Mass.

Presider: Kristen Cacciatore

The Boston Science Partnership shares how it has increased the number of AP science students fivefold and the average AP science exam score in the district over the past four years.

SESSION 34**Almost Magic...Counterintuitive and Abracadabra Discrepant Events—Science Content— (Gen)***(Middle Level–College)**La Galerie 6, New Orleans Marriott***Joe Laszlo** (*jos.laszlo@hawaiiintel.net*) and **James Redmond** (*jredmond@hawaii.edu*), University of Hawaii, Honolulu

Discrepant events can be used in a number of modalities to teach science. These use recycled materials.

SESSION 35**Making the Transparent Visible: Using Video Analysis to Reveal the Expert Decision Making of Elementary Teachers During Science Talks—Science Teaching— (Gen)***(Elementary/Supervision)**Regent, New Orleans Marriott***Kimber Hershberger** (*khm12@scasd.org*) and **Judi Kur** (*jjk11@scasd.org*), Radio Park Elementary School, State College, Pa.Presider: Mary Starr (*mastarr@umich.edu*), The University of Michigan, Ann Arbor

Video analysis proved a powerful tool for teachers and interns as they engaged in dialogue and reflection regarding science talk and argument within classroom communities.

SESSION 36 (two presentations)*(Middle Level–High School)**Bayside A, Sheraton***Sea Perch: Underwater Robotics for Middle Schoolers—Science Teaching— (Gen)****Susan Giver Nelson** (*sgiver@sname.org*), Society of Naval Architects and Marine Engineers, Jersey City, N.J.

The Sea Perch program is designed to teach students how to build and operate an underwater robot as they learn engineering concepts such as propulsion, buoyancy, design, and safety.

Analysis of Bears, Glaciers, and Mountain Goats: Using GIS to Develop Environmental and Ecological Awareness—Science Teaching— (Gen)**Kathleen J. Galau**, Floyd Dryden Middle School, Juneau, Alaska

Using ArcMap students can map and measure glacial advance and/or retreat. Mapping animal movements over time allows greater understanding of habitat usage, range, and ecological interactions.

SESSION 37**The Department of Energy's Academy for Creating Teacher Scientists: It's Worth Every Penny...and They Give Them All to You!—Professional Development— (Gen)***(Middle Level–High School)**Edgewood A/B, Sheraton***Charles Velasquez** (*ctvelasq@muscatine.k12.ia.us*), Muscatine Community Schools/Ames Lab, Muscatine, Iowa**Daniel Andrews** (*dandrews@ames.k12.ia.us*), Ames Middle School, Ames, Iowa**Ginny Elliott** (*gelliott@po-1.s-tama.k12.ia.us*), South Tama Middle School, Toledo, Iowa
Rejuvenate your enthusiasm, learn from experts, AND become eligible for thousands of dollars for materials and additional professional development. (They paid to send me here!)

SESSION 38

Whole-Class Inquiry in the Science Classroom —Science Teaching— (Chem)
(General) *Gallier A/B, Sheraton*

Dennis Smithenry (*dsmithenry@scu.edu*), Santa Clara University, Santa Clara, Calif.

Joan A. Gallagher-Bolos (*jgallagher-bolos@glenbrook.k12.il.us*), Glenbrook North High School, Northbrook, Ill.

Come see how one teacher challenges her students to inquire together as a whole class to solve a problem in several multi-day projects. View video clips that were recorded in an actual classroom.

SESSION 39

Bioethics and the 21st Century —Science Teaching— (Bio)
(High School) *Napoleon A3, Sheraton*

Jeanne Chowning (*jchowning@nwabr.org*), Northwest Association for Biomedical Research, Seattle, Wash.

Looking to incorporate bioethics into your high school curriculum? Learn about a new supplement (funded by the Office of Science Education at NIH) that helps develop students' ethical reasoning skills on topics ranging from vaccination to genetic testing.

SESSION 40

Space Weather: The Sun's Impact on the Earth-Atmosphere System —Science Content— (Earth)
(Middle Level–High School) *Napoleon B3, Sheraton*

John G. Hehr (*jghehr@uark.edu*) and **Lynne H. Hehr** (*lhehr@uark.edu*), University of Arkansas, Fayetteville

We will examine the electromagnetic spectrum and the impact of the Sun's energy or "space weather" on the Earth-Atmosphere system.

SESSION 41

International Year of Astronomy 2009—Get Ready Now! —Science Content— (Earth)
(Middle Level–High School) *Napoleon C1, Sheraton*

John McFarland (*mcfarland.john@att.net*), Johannes Kepler Project, Charleston, S.C.

Johannes Kepler discusses the nine core themes of U.S. IYA2009 and offers a universe of ideas on how the activities can be incorporated into the curriculum.

SESSION 42

NSTA High School Earth/Environmental Science Share Session —Science Content— (Earth)
(High School) *Napoleon D3, Sheraton*

Susan Sharp, J.C. Birdlebough High School, Phoenix, N.Y.

Lynn Sharp (*sysharp@aol.com*), Liverpool, N.Y.

Presider: Susan Sharp

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

SESSION 43

Teaching Evolution Without Compromising the Science or Offending Students' Religious Beliefs —Science Teaching— (Bio)*(Middle Level–College)**Rhythms I, Sheraton***John R. Staver** (*jstaver@purdue.edu*), Purdue University, West Lafayette, Ind.

What students already know is the strongest influence in learning something new. Many learners' religious beliefs hinder their capacity to understand evolution. Join me as I share research-based strategies that help to decrease students' perceived conflicts between their religious beliefs and evolution.

SESSION 44

Basic Polymer Chemistry for the High School Classroom —Science Content— (Chem)*(High School)**Salons 817 & 821, Sheraton***Debbie Goodwin** (*nywin@hotmail.com*), Chillicothe High School, Chillicothe, Mo.**Andrew G. Nydam** (*andrewnydam@hotmail.com*), Olympia High School, Olympia, Wash.

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

SESSION 45

Energize Using Inquiry and Modeling —Science Content— (Phys)*(High School)**Salons 825 & 829, Sheraton***Dorina Kosztin** and **Meera Chandrasekhar**, University of Missouri, Columbia**Gabriel de la Paz**, Clayton High School, Clayton, Mo.

Discover hands-on activities introducing students to concepts on energy and energy conservation. The activities are conducted using modeling and inquiry-based methods, as presented in the Missouri "A TIME for Physics First" Summer Academy (2007). Developed with Missouri Department of Elementary and Secondary Education funding, these activities include experimental design, measurement, and projects. Handouts!

SESSION 46

Write from the Start (Gen)*(General)**Salon 828, Sheraton***Ken Roberts**, Assistant Executive Director, Journals, NSTA, Arlington, Va.

Learn how to properly prepare a manuscript for NSTA's journals and meet with the editors to discuss and fine-tune your article ideas.

11:00 AM–12 Noon **WORKSHOPS****Influenza: Fear of an Approaching Pandemic? —Science Content—** (Bio)*(High School–College)**Room 238, Convention Center*

Tim Herman (*herman@msoe.edu*), **Shannon Colton** (*colton@msoe.edu*), **Margaret Franzen** (*franzen@msoe.edu*), **Karen DeBoer** (*deboerk@kmsd.edu*), and **Mark Hoelzer** (*hoelzer@msoe.edu*), Center for BioMolecular Modeling, Milwaukee School of Engineering, Milwaukee, Wis.

Explore the influenza virus—including the infection mechanism, genetic shift and drift, mixing vessels, and pandemic strains—with innovative physical models and visualization tools.



Reduce, Reuse, Recycle: How Sustainable Engineering Relates to Energy-related Challenges —Science Content— **(Gen)**

(Elementary)

Room 239, Convention Center

Kate E. Hester (*khester@mos.org*), **Sharlene Yang** (*syang@mos.org*), and **Carolyn DeCristofano**, Museum of Science, Boston, Mass.

How does looking at energy through an engineering perspective help students make real-world decisions and care for the environment? Find out—try some sustainable engineering activities!

Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-Up Session: Using Hands-On Activities to Teach Careers in Environmental Science (Env)

(Middle Level)

Room 256, Convention Center

Karen Flammer, Sally Ride Science, San Diego, Calif.

Leesa Hubbard (*astro poet@aol.com*), Sally Ride Science, Lebanon, Tenn.

Learn about environmental science careers while doing fun hands-on activities about climate change. Take home ideas for your classroom.

NMLSTA Session: Let's Explore Middle Level Heredity, Microorganisms, and Space —Science Teaching— **(Gen)**

(Elementary–Middle Level)

Room 353, Convention Center

Carla C. Johnson (*carla.johnson@uc.edu*) and **Kimberly Lemon**, University of Cincinnati, Ohio

Learn about inexpensive science explorations you can do with your grades 4–9 science class. Units on heredity, microorganisms, and space will be shared. All lessons use the 5E Model of Instruction and use common items to engage students in doing science. Sample lesson plans will be provided.

Using Toys to Teach About Motion, Energy, and Energy Transformations —Science Content— **(Phys)**

(Elementary–Middle Level)

Room 354, Convention Center

John W. McBride and **Muhammad I. Bhatti** (*bhatti@utpa.edu*), University of Texas-Pan American, Edinburg

Learn how to use toys to help students understand forms of energy and energy transformations. Make and take toys to use as teaching tools. Handouts.

Field Trip to Mercury! —Science Content— **(Earth)**

(Elementary–Middle Level)

Room 356, Convention Center

Lollie Garay, Redd School, Houston, Tex.

Nancy Tashima (*tashima@aloha.net*), Onizuka Space Center, Kailua-Kona, Hawaii

Come onboard the *MESSENGER* spacecraft to learn more about its mission to Mercury and how to take your students along on this awesome adventure.

Wet and Wild in Louisiana Wetlands —Professional Development— **(Env)**

(Middle Level)

Room 357, Convention Center

Tera M. Robinson-LaPrarie, Alexandria Middle Magnet School, Alexandria, La.

Get your hands wet during a hands-on wetland activity while learning about the causes and effects of wetland loss.

A Great Solution: Science Combined with Literature —Science Content— (Chem)*(Preschool/Elementary)**Room R03, Convention Center***Arlyne Sarquis** (*sarquiam@muohio.edu*), Miami University, Middletown, Ohio

Be more effective—teach two things at once. Start with a literature book, go for the science!

Learn how with these fun, literature-based science activities.

Using Student Interactive Notebooks to Enhance Hands-On Instruction —Science Teaching— (Gen)*(Elementary)**Room R04, Convention Center***Anne Sywilok** (*anne_sywilok@apsva.us*), Abingdon Elementary School, Arlington, Va.**Diane M. Jones** (*diane_jones@apsva.us*), Nottingham Elementary School, Arlington, Va.

Join us as we demonstrate how to apply the social studies “History Alive” approach to science instruction. This approach incorporates hands-on science activities that motivate kids and reinforce skills for all ability levels from second language to gifted students. The first 100 participants will receive a copy of a CD containing presentation activities for grades 1–5.

First-Grade Science Original Trade Books Illustrated and Written by Elementary Teacher Candidates? How and Why Did They Do That? —Science Teaching— (Gen)*(Elementary/College)**Room R06, Convention Center***Coralee Smith** (*smithcs@buffalostate.edu*), Buffalo State College, Buffalo, N.Y.**Megan Harf** (*harfm51@mail.buffalostate.edu*), Lancaster, N.Y.

Meet with elementary teacher candidates to explore the processes they used to create and publish original first-grade science trade books that were used to teach science in urban field placement.

CESI Session: Teaching Nature of Science to Young Children —Science Content— (Gen)*(Preschool/Elementary)**Room R07, Convention Center***Judith S. Lederman** and **Norman G. Lederman**, Illinois Institute of Technology, Chicago

Come engage in a variety of activities that teach aspects of nature of science to young students.

Science Gnus —Science Content— (Gen)*(General)**Jasperwood, Hilton***John J. Cafarella** (*syyentz@ptd.net*), Lehman College, Bronx, N.Y.

Science Gnus (pronounced news)—real stories of scientists and their discoveries and some hands-on activities, too.

Accessibility —Science Teaching— (Gen)*(General)**Oak Alley, Hilton***Greg P. Stefanich** (*stefanich@uni.edu*), University of Northern Iowa, Cedar Falls

We will examine elements of accessibility relating to students with disabilities, with an emphasis on universal design elements such as instruction, supplies, equipment, and software.

Science Take-Out: Kidney Function —Science Content—

(Bio)

(High School–College)

Ile de France III, JW Marriott

Dina G. Markowitz (*dina_markowitz@urmc.rochester.edu*) and **Susan Holt**, University of Rochester, N.Y.

Presider: Alfred Porter (*apporter12@aol.com*), Benjamin E. Mays High School, Atlanta, Ga.

Science Take-Out kits contain all the materials needed for high school biology students, working alone or in a classroom setting, to complete hands-on/minds-on laboratory activities. These “lab in a bag” kits are designed for diverse educational settings and eliminate the need for time-consuming lab prep. Experience two Science Take-Out kits—Kidney Dialysis and Kidney Donor. Take home sample kits and information on other Science Take-Out kits.

NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon —Science Content—

(Earth)

(Elementary–High School)

Bissonet, New Orleans Marriott

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

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

Roberta M. Johnson (*rmjohnsn@ucar.edu*), **Becca Hatheway** (*hatheway@ucar.edu*), **Teresa Kennedy**, and **Nandini McClurg** (*mcclurg@globe.gov*), University Corporation for Atmospheric Research, Boulder, Colo.

Erna Akuginow and **Geoffrey Haines-Stiles** (*ghs@passporttoknowledge.com*), Passport to Knowledge/Geoff Haines-Stiles Productions, Inc., Morristown, N.J.

Dana E. Backman (*dbackman@sofia.usra.edu*), NASA Ames Research Center, Moffett Field, Calif.

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

Bob King (*bobkingnesta@gmail.com*), Friendship Christian School, Lebanon, Tenn.

Tina King (*tinakingtn@hotmail.com*), West Elementary School, Mount Juliet, Tenn.

Carol E. Landis and **Mark A. Maley** (*mark@linworth.org*), The Ohio State University, Columbus

Peter Larmour (*peterlarmour25@hotmail.com*), Claverack, N.Y.

Donna Maley (*maley_donna@mail.dublin.k12.oh.us*), Dublin Davis Middle School, Dublin, Ohio

Manley Midgett (*manley.midgett@teacheracademy.org*), North Carolina Teacher Academy, Morrisville

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

Ron Pilatowski (*ron@linworth.org*), Linworth Alternative Program, Worthington, Ohio

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

Theresa Schwerin (*theresa_schwerin@strategies.org*), Institute for Global Environmental Strategies, Arlington, Va.

Michael J. Smith (*msmith@wilmingtonfriends.org*), Wilmington Friends School, Wilmington, Del.

Katie West (*katiwest.nh@gmail.com*), Tuftonboro Central School, Tuftonboro, N.H.

Pamela Whiffen (*pwpwr@aol.com*), NASA/Scottsdale Gifted Program, Scottsdale, Ariz.

Presider: Michelle C. Harris

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

Rigor vs. Rhetoric: Developing Scientific Skepticism in Our Students —Science Teaching— **(Env)***(High School)**La Galerie 5, New Orleans Marriott***Jenelle D. Hopkins** (*jhopkins@interact.ccsd.net*), Centennial High School, Las Vegas, Nev.**Mark Klawiter**, Deerfield High School, Deerfield, Wis.**Carol Engelmann** (*cengelmann@milken.school.org*), Milken Community High School, Los Angeles, Calif.

We'll share various teaching strategies for increasing students' skills in analyzing the debates surrounding scientific issues.

Build a Battery of Batteries —Science Content— **(Chem)***(Middle Level–High School)**Bayside C, Sheraton***Julie Yu**, The Exploratorium, San Francisco, Calif.

Build several batteries using inexpensive materials, including the most powerful battery for a classroom. Learn hands-on ways to teach electric cells and alternative energy sources.

Hue Are You? Color, Light, and the Human Eye —Professional Development—**(Bio)***(General)**Napoleon B1, Sheraton***Eric P. Muller** (*emuller@exploratorium.edu*), Exploratorium, San Francisco, Calif.

Let's focus on color and perception activities using cheap and easily obtainable materials. All activities were developed and tested at the Exploratorium Teacher Institute.

Demystifying Electrophoresis —Science Content— **(Gen)***(High School)**Napoleon B2, Sheraton***Cora A. James** (*cjames@haskell.k12.ok.us*), Haskell (Okla.) Public Schools

This lab will introduce anyone new to electrophoresis to the functioning of the electrophoresis equipment and walk them through the process of electrophoresis with a simple, understandable, introductory lab.

The Science, the Solutions: Addressing the Climate Conundrum —Science Content— **(Earth)***(General)**Napoleon C2, Sheraton***Teresa A. Eastburn** (*eastburn@ucar.edu*), National Center for Atmospheric Research, Boulder, Colo.**Susan Q. Foster** (*susanf@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.**Dave Wilton** (*dave@facingthefuture.org*), Facing the Future, Seattle, Wash.

Presider: Dave Wilton

This workshop will provide a fast-paced, activities-driven exploration of what we know irrefutably about climate change and what remains uncertain. Leave with a climate action plan in hand after a review of possibilities and likely pitfalls, plus a CD full of exceptional classroom activities and multimedia resources from the National Center for Atmospheric Research and websites *Windows to the Universe* and *Facing the Future*.**“Seeing” the Spectrum —Science Content—****(Earth)***(Middle Level–High School)**Napoleon C3, Sheraton***Christine A. Royce** (*caroyce@aol.com*), NSTA Director, District IV, and Shippensburg University, Shippensburg, Pa.

Margaret Holzer (*mholzer@monmouth.com*), Chatham High School, Chatham, N.J.
How do we “see” something that exists but is not visible? Explore the properties of light waves—from radio to ultraviolet—in an effort to answer this question.

Our Amazing Immune System —Science Content— **(Bio)**
(Middle Level–High School) *Rhythms II, Sheraton*

Victoria Brady (*toryb@exploratorium.edu*), The Exploratorium, San Francisco, Calif.
Explore how the parts of the immune system work together to recognize and overcome pathogen invaders and to maintain up-to-date defenses.

Online Genomics Resources for Students and Science Educators —Science Content— **(Bio)**
(General) *Rhythms III, Sheraton*

Carla L. Easter (*easterc@mail.nih.gov*) and **Jeffre Witherly** (*jlw@mail.nih.gov*), National Human Genome Research Institute, Bethesda, Md.
Explore the National Human Genome Research Institute’s interactive resources designed to educate and engage users in understanding genomics and associated fields.

Demonstrations in Electricity and Magnetism —Science Teaching— **(Phys)**
(Middle Level–High School) *Salons 816 & 820, Sheraton*

Robert G. Schanne (*schanr@lmsd.org*), Lower Merion High School, Ardmore, Pa.
I will share ideas, demonstrations, and labs for static electricity, electric circuits, magnetism, and electromagnetism. Handouts and CDs will be available for the first 50 participants.

11:00 AM–12 Noon EXHIBITOR WORKSHOPS

Visualizing Our Universe in a Full-dome Classroom: Teaching Simulations **(Earth)**
(Grades K–12) *Booth No. 1133, Exhibit Hall, Convention Center*

Sponsor: Spitz, Inc.

David H. Bradstreet (*dbradstr@eastern.edu*), Eastern University, St. Davids, Pa.

Scott Huggins (*shuggins@spitzinc.com*), Spitz, Inc., Chadds Ford, Pa.

Dr. David H. Bradstreet tours the virtual universe and demonstrates new methods for visualizing space science. Ancient observations, comets, constellations, and other astronomy simulations will be shown. The *Spitz Full-dome Curriculum* uses original 3-D visualization as a completely new way to teach challenging space science concepts.

Investigating Earth Systems and EarthComm: Middle and High School Guided Inquiry **(Earth)**
(Grades 6–12) *Room 212, Convention Center*

Sponsor: It’s About Time

Tom Custer, It’s About Time, Armonk, N.Y.

Participate in activities and real-life challenges that have been developed for middle and high school students by the education experts at the American Geological Institute. This workshop will include an overview of the full-year curriculum, web links, materials, and professional development. Leave with a practical hands-on activity that you can do in your classroom. Hear from teachers who have used the program and find out how it has been working with their students.

Tough Topics in Middle School Science: Life Science —*Science Teaching*— (Bio)
(Grades 6–8) Room 218, Convention Center

Sponsor: PASCO Scientific

Tess Ewart, A.I. Root Middle School, Medina, Ohio

Explore PASCO's state-of-the-art science solutions to tough topics in middle school life science. In this hands-on workshop you will participate in standards-based probeware lab activities from PASCO's new middle school curriculum. See how the SPARK Science Learning System can change your teaching practice and improve student understanding of core topics.

Tough Topics in Earth Science: Understanding Weather with GIS —*Science Teaching*— (Earth)

(Grades 6–12)

Room 219, Convention Center

Sponsor: PASCO Scientific

Ryan Reardon, Alabama School of Fine Arts, Birmingham

Explore PASCO's state-of-the-art science solutions to one of the toughest science topics in earth science—weather. In this hands-on workshop you will participate in standards-based lab activities using My World GIS and weather data from the WeatherBug weather station network. This activity is just one of many engaging activities from PASCO's new earth science curriculum that integrates probeware and GIS technology. See how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

11:00 AM–12:30 PM WORKSHOP

DUPONT Session: The Science of Food Safety (Bio)
(Middle Level–High School) Southdown, Sheraton

Peggy Vavalla, DuPont, Wilmington, Del.

Explore food safety issues such as foodborne illnesses, *Salmonella* poisoning, chemical additives and packaging to prevent microbial growth, slow oxidation of fresh fruit, and enhancing nutrient content.

11:00 AM–1:00 PM MEETING

Journal of College Science Teaching Advisory Board Meeting

Estherwood, Sheraton

11:00 AM–1:00 PM PRESENTATION

SESSION 1

PDI

BSCS Pathway Session: Inquiry Through the Eyes of an Elementary Learner —*Science Teaching*— (Bio)

(Elementary)

Room 333, Convention Center

Sam Spiegel (sspiegel@bscs.org) and **Paul Numedahl** (pnumedahl@bscs.org), BSCS, Colorado Springs, Colo.

Can elementary students learn life science content through inquiry-based science? Yes! Explore the essential features of classroom inquiry through the eyes of an elementary learner.

11:30 AM–12:30 PM **PRESENTATION**

PDI **SESSION 1**
NGS Pathway Session: Analyzing Energy Consumption with Resources from the National Environmental Education Foundation —Science Content— (Env)
(Middle Level–High School) Room 347, Convention Center
Karen Heys (heys@neefusa.org), National Environmental Education Foundation, Washington, D.C.
Kathleen Schwill (kschwill@ngs.org), National Geographic Society, Washington, D.C.
The National Geographic Society and the National Environmental Education Foundation present tools for incorporating energy consumption analysis, carbon calculators, and energy audits into the classroom.

11:30 AM–1:00 PM **SHELL SCIENCE SEMINAR**

Understanding the Katrina Catastrophe with the Help of Computer Models (Gen)
(General) Room 243, Convention Center



Scientist
Ivor van Heerden
Deputy Director, LSU Hurricane Center and
Dept. of Civil and Environmental Engineering
Louisiana State University
Baton Rouge, La.
exnatalia@aol.com

President: Tina Savoie (tina_savoie@camsch.org), LSTA Board Member, Cameron Parish School Board, Lake Charles, La.

I will discuss how, in a virtual vacuum of actual physical measurements and data, several computer models have been used to better understand the hydrodynamics of the Katrina flooding event and the fate of the levee systems. The data I will present represent a multi-university effort that includes significant support from Dutch scientists. The talk will be rich in color graphics and will include computer model (movie) outputs.

Dr. Ivor van Heerden has been deputy director of the Louisiana State University (LSU) Hurricane Center since 1999 and director of the Center for the Study of Public Health Impacts of Hurricanes, a Louisiana Board of Regents Health Excellence Fund Center, since 2001.

Ivor is former assistant secretary of the Louisiana Department of Natural Resources, where he ran a very successful coastal wetlands restoration program. He has been involved in natural disaster research projects in various parts of the world and played a key part in the dissemination of information on the impacts of Katrina during the emergency. He led the State of Louisiana's official forensic data gathering team as concerns the failure of the levees in New Orleans and the consequences for those who lost their homes.

11:30 AM–1:00 PM PRESENTATION

PDI**SESSION 1****McREL Pathway Session: Designing Effective Science Instruction: Scientific Discourse in the Classroom —*Science Teaching*— (Gen)***(General)**Room 346, Convention Center***Bj Stone** (*bstone@mcrel.org*), Mid-continent Research for Education and Learning, Denver, Colo.

To learn science concepts, students need to talk about their ideas to clarify their thinking. Learn how to use inquiry questioning strategies to get students to discuss in class and make sense of their learning experiences. Practice using provided question stems.

12 Noon–12:30 PM PRESENTATION

SESSION 1**Teacher Researcher Day Session: Science Inquiry Group Network —*Professional Development*— (Gen)***(General)**Acadia, New Orleans Marriott***Emily H. van Zee** (*vanzeee@science.oregonstate.edu*), Oregon State University, Corvallis**Deborah R. Harris** (*drobert1@umd.edu*), Queen Creek (Ariz.) Unified School District**Kim Cook**, Holland Woods Middle School, Port Huron, Mich.**Marcilyn Misaros**, Fort Gratiot Middle School, Marysville, Mich.**Monica Hartman** (*mlhartma@umich.edu*), St. Clair County RESA, Sterling Heights, Mich.

The Science Inquiry Group (SING) Network provides a way for interested teachers and teacher educators to continue talking with one another via the internet in between Teacher Researcher Days. Topics include ways to foster teacher research, including everyone in science learning, conversations about science in elementary classrooms, using context-rich problems to motivate and enhance learning, using technology to support science inquiry, issues encountered by elementary science specialists, administrative support for teacher inquiries, culturally responsive teaching, engaging students in scientific inquiry, project-based learning, using informational text to foster science learning, and conversations about science in secondary classrooms.

12 Noon–1:30 PM EXHIBITOR WORKSHOPS

Scholar Chemistry Demonstrations**(Chem)***(Grades 7–12)**Room 202, Convention Center*

Sponsor: Sargent-Welch

Mark Meszaros, Sargent-Welch, West Henrietta, N.Y.

Generate excitement by demonstrating key chemical concepts in your classroom. Come see how easy it is to set up and perform seven different chemical demonstrations using Scholar Chemistry kits. Join in the discussion on how to use demonstrations more effectively in the classroom.

Biotechnology and Genetics Activities from Flinn Scientific —*Science Teaching*— (Bio)*(Grades 9–College)**Room 204/205, Convention Center*

Sponsor: Flinn Scientific, Inc.

Maureen Hunt, Flinn Scientific, Inc., Batavia, Ill.

Discover how basic biotechnology techniques and interactive classroom activities can motivate students to learn—not memorize—genetics concepts. From the genetic code to electrophoresis, join us for some famous Flinn activities!

Light and Optics —Science Content—

(Gen)

(Grades 5–12)

Room 210, Convention Center

Sponsor: CPO Science/School Specialty Science

Erik Benton, Patsy Eldridge, and Scott Eddleman, CPO Science/School Specialty Science, Peabody, Mass.

Investigate concepts of color mixing, optics, and interference using the CPO Light and Optics kit. Use our colored LED lights, a laser, lenses, a prism, diffraction grating glasses, a mirror, and a few tips along the way to expand your options when tackling light and optics in your classroom.

Middle School Super! Wow! Neat! Science by Ron Perkins —Science Content—

(Gen)

(Grades 4–8)

Room 214, Convention Center

Sponsor: Educational Innovations, Inc.

Ron Perkins, Educational Innovations, Inc., Norwalk, Conn.

Sharing his best ideas in this fast-moving presentation for physical science activities, Ron will demonstrate Educational Innovations products, enlighten you with their versatility, and entertain you with his humor. Topics include mysterious floating objects, amazing color changes, and flying objects. Over 25 product door prizes! Seating is limited.

Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens

(Bio)

(Grades 6–12)

Room 215, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Hands-on, inquiry-based cooperative learning with dissection has been proven the most effective method to teach comparative anatomy. Participants use scientific inquiry to observe, describe, and discover characteristics of vertebrates. Experience superior quality with Carolina's Perfect Solution® specimens, which offer a safe alternative to formaldehyde and require no special ventilation or disposal.

Illuminate Your Classroom with Carolina's Green Gene Colony Transformation

(Bio)

(Grades 9–College)

Room 216, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Students become “gene jockeys” with this genetic engineering and molecular heredity kit. DNA from one organism (*Aequorea victoria*) is placed into a different organism (*E. coli*). When combined with the jellyfish GFP gene, *E. coli* appears green under white light and fluorescent under UV light. Kit meets the National Science Education Standards.

The Zula Patrol® Exploration Station—Mission: Simple Machines!

(Phys)

(Grades K–2)

Room 217, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

The *Zula Patrol*, an educational show on PBS, now has an instructional program with hands-on explorations, multimedia, and teacher’s guides to help teachers integrate language arts and math with science. In this unit, participants learn about the form and function of simple machines, discovering that these devices make activities easier.

Reading Informational Text: Strategies for Connecting Science and Literacy with Content Readers (Gen)

(Grades K–5)

Room 220, Convention Center

Sponsor: Pearson

Glenn Gordon, Pearson, Upper Saddle River, N.J.

Use proven strategies to help students read and understand informational text. This session includes strategies using content leveled readers—anticipation guides, directed thinking/reading activities, graphic organizers, group summarizing, and pairs read. Selected strategies will be discussed and practiced, and you will leave with strategies and graphic organizers to use in your own science classroom.

Energy Sources for the Future of Humanity: Examples of the Importance of Physical Science! —Science Teaching— (Phys)

(Grades 6–12)

Room 221, Convention Center

Sponsor: Pearson

Michael Wyssession, Washington University in St. Louis, Mo.

Do \$4/gallon gas prices and ethanol-driven world hunger get you down? Well, there are many signs that things are looking “up” and we have a “sunny” future. We’ll share examples of the future of solar energy and other energy sources and how they can be incorporated into physical science classes.

Water Quality with Vernier —Science Teaching— (Env)

(Grades 6–College)

Room 222, Convention Center

Sponsor: Vernier Software & Technology

Dan Holmquist (info@vernier.com) and **Robyn Johnson** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Use our popular *Water Quality with Vernier* lab book to conduct tests during this hands-on workshop. Learn how to care for your sensors, including calibration and data management techniques. See the new USB Vernier GPS sensor and learn how to map your sampling sites with Google Maps or GIS software.

Lights, Camera...Data Collection —Science Teaching— (Phys)

(Grades 6–College)

Room 224, Convention Center

Sponsor: Vernier Software & Technology

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

Interested in learning how to create and analyze your own videos in your science classroom? Learn how to use the Logger Pro 3 software from Vernier along with a digital video camera or still digital camera to enhance your data-collection experiments. Topics will include video-synchronized data collection, video data analysis, and still digital photo analysis.

Safety Smart Science (Phys)

(Grades 4–8)

Room 225, Convention Center

Sponsor: Disney Educational Products/Underwriters Laboratories

Barbara Guthrie, Underwriters Laboratories, Northbrook, Ill.

Being Safety Smart® is easy and fun when you understand the science of safety. Hosted by a UIL® Safety Ambassador, this workshop is jam-packed with fun hands-on activities designed to help kids in grades 4–8 explore the science of fire and electricity.

A Natural Approach to Chemistry

(Chem)

(Grades 9–12)

Room 226, Convention Center

Sponsor: Lab-Aids, Inc.

Tom Hsu, Author, Andover, Mass.

Join author Tom Hsu for a special preview and hands-on examination of selected laboratory activities from his new high school book *A Natural Approach to Chemistry*. This workshop takes a fresh look at how chemistry is used today, in and out of the laboratory. Experiments have been developed to allow the program to do real, quantitative chemistry using only non-toxic chemicals that are easy to dispose of. Fume hoods are not required and open flames are not used. Selected lab activities will feature an innovative new probeware system that is rugged, simple to use, and makes accurate, quantitative measurements accessible to all students. Selected labs and other program materials will be provided for all participants. This workshop is suitable for all high school chemistry teachers.

What Do You Know About That! Strategies, Activities, and Motivating Materials for Reinforcing Students' Knowledge Before the Standardized Test —Science Teaching—

(Gen)

(Grades K–6)

Room 227, Convention Center

Sponsor: Houghton Mifflin Harcourt

Catherine Valentino, Author-in-Residence, West Kingston, R.I.

Starting with what students know rather than what they don't, build students' confidence in their ability to learn challenging science concepts and content. Discover quick, fun, and inexpensive ways to create a classroom environment where science expertise is nurtured and celebrated in diverse groups of students.

Smithsonian Science: At the National Zoo, We've Got Watching Animals Down to a Science —Science Content—

(Bio)

(Grades 4–12)

Room 228, Convention Center

Sponsor: Smithsonian Institution

Erika Bauer and **Michael Henley**, Smithsonian National Zoological Park, Washington, D.C.

Observing animals and collecting data is fun, but if you want to investigate scientific questions, it is important to use the right methods. Scientists from the National Zoo will describe how to conduct a behavior watch and how to use animal behavior studies in the classroom.

Forensic Science for High School: An Inquiry-rich Curriculum —Science Content—

(Gen)

(Grades 9–12)

Room 231, Convention Center

Sponsor: Kendall/Hunt Publishing Co.

Danelle Treigle, Kendall/Hunt Publishing Co., Dubuque, Iowa

Kendall/Hunt's Forensic Science *for* High School is a hands-on, integrated science course that focuses on the practices and analyses surrounding physical evidence found at crime scenes. Participants will be actively engaged in investigations from this exciting curriculum.

Master of Science in Geosciences via Distance Learning from Mississippi State University —Science Teaching— (Earth)

(Grades K–12)

Room 232, Convention Center

Sponsor: Mississippi State University

Doug Gillham (dmg3@msstate.edu) and **Kathleen Sherman-Morris**, Mississippi State University, Mississippi State, Miss.

Discover how you can earn an MS degree in geosciences via distance learning through our Teachers in Geosciences program. Our 12-course, 36-credit hour graduate program is designed to take two years and includes courses in meteorology, geology, astronomy, oceanography, hydrology, and environmental geosciences.

Science Tests and Learning: Science Textbook Reading Is Not the Same as Literature Reading —Assessment— (Gen)

(Grades 4–9)

Room 235, Convention Center

Sponsor: Questar Assessment

Roger Farr (farr@indiana.edu; edastolf@questarai.com), Questar Assessment, Brewster, N.Y.

Science teachers need to help students learn how to use reading skills and strategies to *find* the information they need, *relate* that information to what they already know, develop vocabulary knowledge based on *connections* to science, and *apply* information to solve problems. The assessment of *reading science* textbooks will also be discussed as traditional reading tests *do not* provide useful estimates of how well students read science texts.

Student Success with Inquiry —Science Teaching— (Gen)

(Grades K–5)

Room 236, Convention Center

Sponsor: National Geographic School Publishing

Carl Benoit (cbenoit@ngsp.com) and **Henry Layne** (hlayne@ngsp.com), National Geographic School Publishing, Evanston, Ill.

Engage in the “doing” part of science with National Geographic. Explore how different levels of inquiry can help students build science knowledge and inquiry skills. See how teachers can support student investigations through directed, guided, and open-inquiry approaches.

12 Noon–2:00 PM NSELA/ASTE LUNCHEON

Coral Reefs, Cop Shows, and Galaxies: Learning and Leading Now in Science Education

(Tickets Required; \$55)

M-4

St. Charles (41st Floor), New Orleans Marriott



Speaker

Francis Q. Eberle

Executive Director

National Science Teachers Association

Arlington, Va.

feberle@nsta.org

In these challenging times, science educators and scientists need to take the lead in raising awareness and understanding of science. We need to learn to emulate successful systems and work together across organizations, communities, and individuals.

Dr. Francis Q. Eberle is the executive director of the National Science Teachers Association (NSTA), 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.

A renowned researcher in the science education community, Dr. Eberle is the lead or co-lead on numerous research projects underwritten by the National Science Foundation and the U.S. Department of Education on a host of collaborative science and math education reform initiatives. His research has focused on integrating engineering into the high school curriculum, training inservice teachers, mentoring new teachers, involving parents in science and math, and integrating technology into the science and math classroom.

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

12 Noon–2:00 PM NSTA/NMLSTA MIDDLE LEVEL LUNCHEON

Drumming to the Beat of Different Marchers: Celebrating Science Teachers

(Tickets Required; \$55)

M-5

Rosedown, Hilton



Speaker

Debbie Silver

Author/Educator/Consultant

Melissa, Tex.

dsilver@bayou.com

Veteran science teacher Dr. Debbie Silver shares a humorous look into the lives of those who choose to teach science. Come enjoy her hilarious insights about this particular profession and celebrate the tremendous contributions made daily by educators in this field.

Dr. Debbie Silver is truly a “teacher’s teacher.” She is an award-winning educator with 30 years’ experience as a classroom teacher, staff development instructor, and university professor. Her numerous recognitions include being named the 1990 Louisiana State Teacher of the Year and the 2007 Distinguished Alumnus from the College of Education at Louisiana Tech University. Along the way she has taught almost every grade level and most every kind of student. Debbie is the author of the best-selling book Drumming to the Beat of Different Marchers: Finding the Rhythm for Differentiated Learning.

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

12 Noon–2:00 PM INFORMAL SCIENCE DAY BROWN BAG LUNCH

How Students Learn Science When They Are Not in School —*Science Teaching—* (Gen)

(General)

Carondelet, New Orleans Marriott

Speakers:

Andrew W. Shouse (awshouse@w.washington.edu), Associate Director, UW Institute for Science and Mathematics Education, University of Washington, Seattle

Philip L. Bell, Associate Professor of the Learning Sciences, University of Washington, Seattle

Presider: Elsa Bailey (ebbailey@earthlink.net), NSTA Director, Informal Science, and Elsa Bailey Consulting, San Francisco, Calif.

Beyond the schoolhouse door, opportunities for science learning abound. Each year, tens of millions of Americans, young and old, explore and learn about science by visiting informal learning institutions, participating in programs, and using media to pursue their interests. Bell and Shouse will explore the conclusions and recommendations of the recent National Research Council report *Learning Science in Informal Environments: People, Places, and Pursuits*. This first-of-its-kind broad synthesis report examines critical places where science learning occurs as well as cross-cutting features of informal learning environments. The session will include a presentation of the research basis, audience-presenter dialogue, and an opportunity for participants to work with conclusions in the context of a video-based case of science learning in and out of school.

Andrew Shouse—*Andrew Shouse is an education researcher whose interests include teacher learning, science education in formal and informal settings, and communication of educational research to policy and practice audiences. A former elementary and middle grades teacher and science center administrator, Dr. Shouse joined the University of Washington Institute for Science and Mathematics Education in September 2008 as Associate Director. Previously he served as Senior Program Officer with the National Research Council (NRC), where he directed the consensus study that resulted in the report Learning Science in Informal Environments: People, Places, and Pursuits.*

Philip Bell—*Philip Bell pursues a cognitive and cultural program of research across diverse environments focused on how people learn in ways that are personally consequential to them. He is an associate professor of the Learning Sciences at the University of Washington where he directs the ethnographic and design-based research of the Everyday Science and Technology Group (<http://everydaycognition.org>). He also directs the University of Washington Science and Mathematics Learning Institute focused on coordinating P–20 education efforts across the university.*

12 Noon–5:00 PM MEETING

I Teach Inquiry Network Forum and Reception

(By Invitation Only)

Ile de France I, JW Marriott

Experience proven literacy and assessment strategies using inquiry-based programs with experts in the field. Reception to follow.

12:15–1:30 PM **MEETING**

AMSE (Association for Multicultural Science Education) General Membership Meeting

Room 253, Convention Center

12:30–1:00 PM **PRESENTATION**

SESSION 1

Macrosopes: Wireless Sensor Networks for Soil Ecology—*Professional Development*—**(Bio)**

(Middle Level–High School)

Rhythms I, Sheraton

Jordan Raddick (*raddick@jhu.edu*), Johns Hopkins University, Baltimore, Md.

Learn about “macrosopes”—networks of sensors that continuously measure soil conditions—and how we use them to understand soil organisms and their environment.

12:30–1:30 PM **SCST MARJORIE GARDNER LECTURE**

Ancient Maya Skeletons Meet 21st-Century Technology **(Bio)**

(College)

Frontenac, JW Marriott



Speaker

Nancy L. Elwess

Associate Professor

Dept. of Biological Sciences

Plattsburgh State University

Plattsburgh, N.Y.

(nancy.elwess@plattsburgh.edu)

What can ancient Maya skeletons reveal? Please join a novice molecular anthropologist to find out what DNA extraction, amplification, and analysis reveal about ancient Maya remains.

12:30–1:30 PM **PRESENTATIONS**

SESSION 1

Stand and Deliver! How to Present at NSTA Conferences **(Gen)**

(General)

Room 237, Convention Center

Pita Martinez-McDonald, NSTA Director, Preschool/Elementary, and Cuba (N.Mex.) Independent Schools

Members of the NSTA Preschool/Elementary Committee will walk through the process of presenting at NSTA conferences. View a PowerPoint presentation that shows every aspect of submitting a session proposal. Join us for this informative session and have all your questions answered.

SESSION 2



What Works in Teaching Science: A Meta-Analysis of Current Research —*Science Teaching*— **(Gen)**

(General)

Room 240/241, Convention Center

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

Presider: Adrienne Bentz (abentz@science.tamu.edu), Texas A&M University, College Station

We'll look at a meta-analysis of current research in effective science teaching strategies, leading to suggestions for improving the learning and academic performance of students in K–12 science.

SESSION 3



ISTE: For Teachers by Teachers: The Cogs Website and NASA's Virtual Lab —*Science Content*— **(Gen)**

(General)

Room 242, Convention Center

Theresa Martinez (theresa.c.martinez@nasa.gov), NASA Kennedy Space Center, Kennedy Space Center, Fla.

Learn how to use NASA's free Virtual Lab software, which provides a high-fidelity simulation of advanced scientific instruments. Support your curriculum with this inquiry-based software, allowing your students an opportunity to be the scientist operating a high-tech microscope.

SESSION 4

Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-Up Session: *Voices from the Classroom* **(Env)**

(Elementary–Middle Level)

Room 256, Convention Center

Jim Brown, Sally Ride Science, San Diego, Calif.

Elementary and middle school teachers will share their success stories about incorporating climate sciences into their classrooms.

SESSION 5



LHS Pathway Session: Using Issues as a Context for Teaching Science Content and Inquiry —*Science Content*— **(Gen)**

(Middle Level–High School)

Room 337, Convention Center

John Howarth, Lawrence Hall of Science, University of California, Berkeley

Examine how personal and societal issues provide a context to motivate students to learn and apply content in the physical, life, and earth sciences.

SESSION 6



FHL Pathway Session: Consider the Evidence—Using Student Journals to Drive Instruction —*Assessment*— **(Gen)**

(Elementary–Middle Level)

Room 338, Convention Center

Therese Arsenault (therese.arsenault@gmail.com), Lansing Middle School, Lansing, N.Y.

Daily journal assessment in middle school classes provides direction for science instruction. We will analyze student journal entries, take note of what students know and think about science, and discuss strategies for using journals to promote science thinking and process skill development.

SESSION 7

Project-based Science for Students with Special Needs —Science Teaching— (Gen)*(Middle Level)**Room 343, Convention Center***Gregory J. Borman** (*gborman@ccny.cuny.edu*), The City College of New York, N.Y.**Derek Ramdass**, Special Education District 75, New York, N.Y.

Presider: Lionel Callender, District 75/Citywide Programs, Ozone Park, N.Y.

Students with special needs participate in project-based learning experiences through which they demonstrate their understanding of science concepts and the nature of science.

SESSION 8

The Little Science Teacher That Could: Teaching Physical Science Through Children's Literature —Science Teaching— (Phys)*(Preschool/Elementary)**Room R03, Convention Center***Lynn A. Bryan** (*labryan@purdue.edu*), Purdue University, West Lafayette, Ind.

Learn how to integrate new and time-honored children's literature into inquiry-based physical science lessons. Win science investigations book bags!

SESSION 9

Forget About the Three R's...Just Teach Science! —Science Teaching— (Gen)*(Elementary)**Room R04, Convention Center***Anthony E. Grisillo**, Glenwood Elementary School and Indian Lane Elementary School, Media, Pa.**Judy Williams** (*jwilly5@aol.com*), Anaheim (Calif.) City Schools, and Azusa Pacific University, Azusa, Calif.**Charles Keeler**, Glenwood Elementary School, Media, Pa.

Presider: Judy Williams

No time to teach it all? Design a science lesson to teach it for you! Discover simple techniques you can use to integrate other subjects into science.

SESSION 10

Wonderful Wikis: Powerful Web Tools for the Elementary Science Classroom —Science Teaching— (Gen)*(Elementary–Middle Level)**Room R05, Convention Center***Sami Kahn** (*skahn@collegiateschool.org*), Collegiate School, New York, N.Y.

Use wikis as tools to encourage collaboration, cooperation, and communication in the elementary science classroom.

SESSION 11

CESI Session: Creativity and Variety in the Science Classroom —Science Teaching— (Gen)*(General)**Room R07, Convention Center***Hans Persson** (*hanper@hanper.se*), University of Stockholm, Sweden

Learn how you can develop and spread examples of concrete and creative teaching strategies for the elementary and secondary levels, improving recruitment in mathematics, science, and technology in the long term.

SESSION 12

From YouTube to YouThink: Using Multimedia for Elaboration and Evaluation of Students' Thinking About STEM —*Science Teaching*— **(Gen)**

(General)

Elmwood, Hilton

Claudia Khourey-Bowers (*cmkhoure@kent.edu*), **Michele Heron** (*mheron@kent.edu*), and **Lori Wilfong** (*lgkrug@kent.edu*), Kent State University-Stark, North Canton, Ohio

Learn to design multi-genre projects, incorporate history into STEM, and use literacy tools to engage students in higher-order thinking via visual, aural, and electronic pathways.

SESSION 13

What Does Technology Integration Look Like in the Science Classroom? —*Science Teaching*— **(Gen)**

(General)

Magnolia, Hilton

Sean M. Owen (*sean@cett.msstate.edu*) and **Nathan Eric Heiselt** (*nericheiselt@bagley.msstate.edu*), Mississippi State University, Mississippi State, Miss.

Amy Cummins (*amycummins@hotmail.com*), Lee Middle School, Columbus, Miss.

Are you really “integrating technology” or just using random tools? Can you recognize effective integration? Come get some answers.

SESSION 14

Forensic Technology: An I-STEM Curriculum —*Science Education Program*— **(Gen)**

(General)

Versailles Ballroom, Hilton

Anne Cupero (*annecupero@gmail.com*), Arlington Career Center, Arlington, Va.

James A. Egenrieder (*jim@deepwater.org*), Virginia Tech/National Institute of Aerospace, Arlington

Forensic technology can exemplify the I-STEM pathway using this hands-on curriculum.

SESSION 15

Great Googling: Developing Exciting Science Units Using Google Groups —*Science Teaching*— **(Gen)**

(Elementary–High School)

Windsor, Hilton

Nancy N. Heilbronner (*nancy.heilbronner@uconn.edu*), University of Connecticut, Storrs
Google advancements enable students to post work, share their creations, and discuss important ideas with experts in the field...all online!

SESSION 16

Using the USGS Earthquake Hazards Program in the Classroom —*Science Content*— **(Earth)**

(High School–College)

Conde, JW Marriott

Randal L.N. Mandock (*rmandock@netzero.net*), Clark Atlanta University, Atlanta, Ga.

Case studies of the science and human impact of earthquakes and tsunamis are developed from information provided by the USGS Earthquake Hazards Program.

SESSION 17

It's Not Too Early: Finding Tomorrow's Science Teachers Today **(Gen)**

(Middle Level–College)

Orleans, JW Marriott

William H. Koenecke (*william.koenecke@coe.murraystate.edu*), Murray State University, Murray, Ky.

Scott Lee Pile (*scott.pile@calloway.kyschools.us*), Calloway Middle School/Murray State University, Murray, Ky.

Kathy Jones, Mayfield Middle School, Mayfield, Ky.

We need more science teachers, but where will they come from? Your middle school classroom! Here is how to find them and encourage them—NOW!

SESSION 18

Teacher-Scientist Partnerships—Everyone Benefits! —Science Teaching—

(Gen)

(General)

Rosalie, JW Marriott

Katherine Nielsen (*katherine.nielsen@ucsf.edu*), University of California, San Francisco

Nancy Moreno, Baylor College of Medicine, Houston, Tex.

Learn about the many models of teacher-scientist partnerships, including benefits, potential pitfalls, and how to get started.

SESSION 19

Teacher Researcher Day Session: Reading Strategies for New Teachers by New Teachers —Science Teaching—

(Gen)

(High School)

Acadia (Group 1), New Orleans Marriott

Kate Rosok, Burnsville High School, Burnsville, Minn.

Kathleen Markiewicz (*kmarkiewicz@gmail.com*), Boston Latin School, Boston, Mass.

Join new teachers as they present effective critical literacy and targeted reading strategies they use in their urban science classrooms. Resources provided for physical sciences.

SESSION 20

Teacher Researcher Day Session: Effective Use of Performance Assessment in Scientific Inquiry —Science Teaching—

(Gen)

(Elementary–Middle Level)

Acadia (Group 2), New Orleans Marriott

Patricia C. Paulson (*patricia-paulson@bethel.edu*), Bethel University, St. Paul, Minn.

Presenter: Douglas Paulson, Monroe Elementary School, Brooklyn Park, Minn.

Explore the issues related to authentic performance assessments when implementing scientific inquiry, including the development of quality checklists and meaningful rubrics aligned to outcomes.

SESSION 21

Teacher Researcher Day Session: Using Classroom Inquiry to Explore Student Learning and Motivation —Professional Development—

(Gen)

(General)

Acadia (Group 3), New Orleans Marriott

Patrick Engleman, Lower Moreland High School, Huntingdon Valley, Pa.

Pamela Yerkes (*yerkes@sas.upenn.edu*), Penn Science Teachers Institute, Philadelphia, Pa.

Presenter: Christina Siry (*chrissiry@gmail.com*), Manhattanville College, Purchase, N.Y.

Three ninth-grade teachers share classroom-based research to explore student motivation, use of technology, and assessment strategies, and discuss ways to catalyze change through classroom inquiry.

SESSION 22

Teacher Researcher Day Session: Documenting Student Success —Science Teaching—

(Gen)

(General)

Acadia (Group 4), New Orleans Marriott

Deborah R. Harris (*drobert1@umd.edu*), Queen Creek (Ariz.) Unified School District

Looking at successes rather than student failures may change the dynamic in the classroom. Come share your thoughts on these examples.

SESSION 23

Ocean Diversity Institute: A Model for Environmental and Multicultural Programming —*Science Teaching*— (Env)

(General)

Bacchus, New Orleans Marriott

Lauren M. Rader (*lrader@oceanology.org*) and **H. Thaxter Tewksbury** (*ttewks@aol.com*), Project Oceanology, Groton, Conn.

Learn about Project Oceanology’s Ocean Diversity Institute, which is dedicated to helping students build the teamwork, communication, and skills necessary to be successful in a multicultural science classroom.

SESSION 24

The Boston Team Evolves into a Cohort of Urban Science Leaders —*Science Education System*— (Gen)

(High School/Supervision)

Jackson, New Orleans Marriott

Jonathan W. McLaughlin (*jmclaughlin4@boston.k12.ma.us*), **Pam Pelletier**, and **Patreka J. Wood** (*pwood2@boston.k12.ma.us*), Boston (Mass.) Public Schools

Matthew Anthes-Washburn (*mfa6@cornell.edu*), Denver East High School, Denver, Colo.

Michael Sullivan (*msullivan4@boston.k12.ma.us*), John D. O’Bryant School of Math and Science, Boston, Mass.

“The Boston Team” has developed into a strong community of science teachers who have redefined the culture of science teaching, transformed teachers into strong leaders, and raised student achievement scores.

SESSION 25

Elementary Instructional Coaching: Science and Literacy Join Forces! —*Professional Development*— (Gen)

(Elementary/Supervision)

Regent, New Orleans Marriott

Patricia L. Bricker (*bricker@email.wcu.edu*), Western Carolina University, Cullowhee, N.C.

Donalyn Small (*donalyn.small@asheville.k12.nc.us*), Vance Elementary School, Asheville, N.C.

Barbara Robinson (*bhrobinson@yanceync.net*), Yancey County Schools, Burnsville, N.C.

We’ll share the case study of a coach who works with grades 3–5 teachers, highlighting her responsibilities in both science and literacy education.

SESSION 26 (two presentations)

(Middle Level–High School)

Bayside A, Sheraton

Science Notebooking for High School Students —*Science Teaching*— (Gen)

Elegan Lee, Parkway North High School, St. Louis, Mo.

Notebooking is a helpful assessment tool for teachers and a great organizational tool for students. Come learn how to implement it in a high school science classroom!

Nontraditional Grading in a Traditional Environment —*Science Teaching*—

(Gen)

Aaron R. Osowiecki (*aosowiecki@gmail.com*), **Jesse Southwick** (*jesse.southwick@gmail.com*), and **Alexandra McNeil** (*amontes@boston.k12.ma.us*), Boston Latin School, Boston, Mass.

Let us introduce you to an assessment approach that helps students reflect on what they have learned. This approach was developed by the physics department at Boston Latin School.

SESSION 27**Preparing Students for Success in College Science —Professional Development— (Gen)***(High School)**Edgewood A/B, Sheraton*

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

Presider: Eduardo Guevara (*eduardoguesa@hotmail.com*), Cesar Chavez High School, Houston, Tex.

At least 17,000 college students report on the effectiveness of their high school preparation, including labs, block scheduling, AP coursework, demos, technology, and topic coverage.

SESSION 28**Standards-based Grading: Measuring Understanding —Assessment— (Chem)***(General)**Gallier A/B, Sheraton*

Jacqueline B. Clymer (*jclymer@qcsd.org*), Quakertown (Pa.) Community School District

Collect and record achievement data in a manner that informs instruction and remediation efforts. We'll look at formative assessment, differentiated instruction, and test construction.

SESSION 29**Give Your Students the World: Google Earth as a Powerful Science Teaching Tool —Science Content— (Earth)***(Middle Level–High School)**Napoleon B3, Sheraton*

Ian C. Binns (*ianbinns@lsu.edu*), Louisiana State University, Baton Rouge

Randy L. Bell (*randybell@virginia.edu*), University of Virginia, Charlottesville

Lara Smetana (*smetanall@southernct.edu*), Southern Connecticut State University, New Haven

Learn how Google Earth can enhance science teaching and learning in grades 6–12. You will participate in example lessons and activities for earth/environmental science.

SESSION 30**Geology Rocks! Using GeoPets to Teach Earth Science —Science Content—****(Earth)***(General)**Napoleon C1, Sheraton*

Renee Clary (*rclary@geosci.msstate.edu*), Mississippi State University, Mississippi State, Miss.

James H. Wandersee, Louisiana State University, Baton Rouge

Have students turn local rocks into GeoPets to investigate the rock cycle and plate tectonics! We provide rocks, rubrics, and interactive/historical diagrams for classroom implementation.

SESSION 31**NSTA High School Physics Share Session —Science Content—****(Phys)***(High School)**Napoleon D3, Sheraton*

Peter Hopkinson (*phopkinson@vcc.ca*), Vancouver Community College, Vancouver, B.C., Canada

Presider: James Redmond, University of Hawaii, Honolulu

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

SESSION 32

The Use of Interactive PowerPoint Learning Activities in Chemistry —Science Teaching— (Chem)

(High School)

Salons 817 & 821, Sheraton

Karl F. Jones (jonesk@cfbisd.edu), Newman Smith High School, Carrollton, Tex.

Presider: Marilyn Jones, Mesquite High School, Mesquite, Tex.

These interactive PowerPoint activities are used to enhance chemistry instruction in empirical formulas, reaction prediction, equation balancing, stoichiometry, gas laws, and critical thinking.

SESSION 33

Teaching the International Year of Astronomy: Techniques and Resources —Science Content— (Earth)

(Elementary–High School)

Salon 828, Sheraton

James G. Manning (jmanning@astrosociety.org), Astronomical Society of the Pacific, San Francisco, Calif.

Tim Spuck (tspuck@mail.ocasd.org), Oil City Area Senior High School, Oil City, Pa.

Mary Dussault, Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

Denise A. Smith, Space Telescope Science Institute, Baltimore, Md.

Timothy F. Slater (timslaterwyo@gmail.com), University of Wyoming, Laramie

Presider: James G. Manning

Join us for a series of “quick hit” demonstrations of IYA-related lessons in telescopes, optics, dark sky awareness, and scientific inquiry, with online links and other references.

12:30–1:30 PM WORKSHOPS



In a New Light: The Color of Weather and Climate —Science Content— (Earth)

(General)

Room 239, Convention Center

Teresa A. Eastburn (eastburn@ucar.edu) and **Tim Barnes**, National Center for Atmospheric Research, Boulder, Colo.

The Sun’s energy is the engine for Earth’s weather and climate. It is also at the core of many of the scientific tools that help us understand our world. Explore the wonder of light and energy and draw connections to it and many of the environmental challenges of our time. Take home a workshop CD with all presentation activities, animations, and PowerPoints.

Global Sustainability Science Connections: Engaging Lessons for the Primary Grades —Science Teaching— (Env)

(Elementary)

Room 254, Convention Center

Dave Wilton (dave@facingthefuture.org), Facing the Future, Seattle, Wash.

Global sustainability is an engaging context for elementary science skills and content. Experience hands-on lessons about food and environment, systems, and biodiversity. Free curriculum guide!

PDI EDCm Pathway Session: Research on Science Mentoring —Professional Development— (Gen)*(Elementary–Middle Level)*

Room 336, Convention Center

Ted Britton (tbritto@wested.org), WestEd, Redwood City, Calif.

Now more than ever there is pressure to identify sound research when instituting new professional development opportunities for professional development and teacher leadership. A growing body of literature exists on mentoring, and international and national studies can shed light on the “why” of mentoring.

Teacher Objective: A Better Student Scientist (and an Easier Job!) —Science Teaching— (Gen)*(Elementary–Middle Level)*

Room 344, Convention Center

Wendy DeMers (ydney2@earthlink.net), Hynes Charter School, New Orleans, La.

Experience a series of fundamental activities to use at the start of the school year. RESULTS—better student scientists and less teacher stress!

Using Informational Timelines —Science Content— (Gen)*(Middle Level)*

Room 345, Convention Center

Pamela Koch (pkoch@tc.edu), Teachers College, Columbia University, New York, N.Y.**Darlene Beal** (darlene-beale@prvsd.net), Linscott Charter School, Watsonville, Calif.

Presider: Adam Geller, Long CEC Academy, St. Louis, Mo.

Use a food systems timetable to help students understand connections between science and technology.

**Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It —Professional Development— (Chem)***(Elementary–Middle Level)*

Room 353, Convention Center

Bill Robertson (wrobert9@ix.netcom.com), NSTA Press Author, Woodland Park, Colo.

Tired of trying to teach a subject you don't fully understand yourself? The *Stop Faking It* book from NSTA Press will help you out. Experience activities and explanations from the book with the author as your guide. We'll cover early concepts of elements, isotopes, and electron shells. Irreverence promised. *Note:* This presentation is different from the one titled MORE CHEMISTRY BASICS (see page 140).

Junk Box Wars! Engaging Students in Physical Science —Science Content— (Phys)*(Middle Level)*

Room 354, Convention Center

Randy Mousley (r_mousley@yahoo.com) and **Aaron Kealey** (akealey@usd259.net), Dean Ray Stucky Middle School, Wichita, Kans.

Heard of junk yard wars? Here is a classroom-sized version. These engaging hands-on activities address force and motion standards.

NASA Family Science Night: Changing Perceptions One Family at a Time —Professional Development— (Earth)*(Middle Level/Informal Education)*

Room 356, Convention Center

Emilie Drobnes (emilie.drobnes@nasa.gov) and **Sara Mitchell** (sara.mitchell@nasa.gov), NASA Goddard Space Flight Center, Greenbelt, Md.

Jacob Noel-Storr (jake@cis.rit.edu), Rochester Institute of Technology, Rochester, N.Y. Leave this workshop with ideas for improving or implementing effective family astronomy programs in your own particular setting. Maximize the learning!

It's All Up to You —Science Content—

(Env)

(Middle Level)

Room 357, Convention Center

Shannon Fulmer Wigley, Our Lady of Perpetual Help School, Belle Chasse, La.

This thematic unit helps middle level students learn about available alternative energy sources and make the decisions most appropriate for their needs and location.

Big Explorations for Preschoolers from PBS's *Curious George* and *PEEP and the Big Wide World* —Science Teaching—

(Gen)

(Preschool)

Room R01, Convention Center

Susan E. Buckey (*susan_buckey@wgbh.org*), WGBH Educational Foundation, Boston, Mass.

Engage preschoolers in direct explorations of natural phenomena through FREE science and engineering activity resources from *Curious George* and *PEEP and the Big Wide World*.

Exploring National Park Resources Right in Your Classroom —Science Teaching—

(Gen)

(General)

Jasperwood, Hilton

Kristen M. Lucke, University of Colorado-Denver, Lakewood

Explore “Views of the National Parks” lessons and experience how using technology can bring together understanding of scientific concepts and care for real-world resources.

Maximizing Quality Instructional Time: How to Make Every Minute Count —Science Teaching—

(Gen)

(General)

Oak Alley, Hilton

Nancy L. Foote (*tinkerbell0611@gmail.com*), Higley Unified School District, Gilbert, Ariz.

These five-minute activities enhance student learning and result in fun, laughter, and science.

Xylose Fermentation: A Classroom Biofuel Lab —Science Content—

(Bio)

(High School–College)

Ile de France III, JW Marriott

Claire M. Reuter (*creutel@gmail.com*), Louisiana State University, Baton Rouge

Jewel J. Reuter (*jewelreuter@earthlink.net*), Louisiana Virtual School, Baton Rouge

Learn about fermentation of xylose, a natural sugar in wood, and set up a xylose fermentation tube that you can observe with your students.

NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon —Science Content—

(Earth)

(Elementary–High School)

Bissonet, New Orleans Marriott

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

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

Roberta M. Johnson (*rmjohnsn@ucar.edu*), **Teresa Kennedy**, and **Nandini McClurg** (*mcclurg@globe.gov*), University Corporation for Atmospheric Research, Boulder, Colo.

Dana E. Backman (*dbackman@sofia.usra.edu*), NASA Ames Research Center, Moffett Field, Calif.

Lindsay Bartolone (*lbartolone@adlerplanetarium.org*), Adler Planetarium and Astronomy Museum, Chicago, Ill.

Chris Campbell (*ccampbel@lincolnschools.org*), Simsboro High School, Simsboro, La.

Chris Costello (*chris.costello@leanderisd.org*), Wiley Middle School, Leander, Tex.

Cris L. DeWolf (*cdewolf@chsd.us*), Chippewa Hills High School, Remus, Mich.

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

Pamela Harman, SETI Institute, Mountain View, Calif.

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

Susan Holiday, Mount Elden Middle School, Flagstaff, Ariz.

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

Michaëlle Jaeger (*mjager@d231.rochelle.net*; *michaellerae@hotmail.com*), Rochelle Middle School, Rochelle, Ill.

Carol E. Landis, The Ohio State University, Columbus

Tom Lough, Murray State University, Murray, Ky.

Carolyn Ng (*carolyn.y.ng@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

Royce Robertson (*rrobertson@plymouth.edu*), Plymouth State University, Plymouth, N.H.

Diann Valentine (*dvalenti@houstonisd.org*), Long Middle School, Houston, Tex.

Pamela Whiffen (*pwpwr@aol.com*), NASA/Scottsdale Gifted Program, Scottsdale, Ariz.

Cathy Williamson (*cwilliamson@sciport.org*), Sci-Port: LOUISIANA'S Science Center, Shreveport

Presider: Michelle C. Harris

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

Toys—They're Not Just for Physics Anymore —Science Content— (Chem)
(Elementary–High School) *Bayside C, Sheraton*

Lynn Hogue, Miami University, Middletown, Ohio

Using toys as scientific tools is the perfect way to capture students' and parents' interest in science concepts. Guaranteed fun for teachers, too!

Variation in Human Skin Pigmentation —Science Content— (Bio)
(High School) *Napoleon A1&2, Sheraton*

Kathleen A. O'Sullivan and **Pamela K. Harman**, SETI Institute, Mountain View, Calif.

Human traits vary greatly across populations. We'll examine environmental correlations and how natural selection has led to the differences. Take home plans and materials.

Muse of Fire: Fire Ant Epidemiology —Professional Development— (Bio)
(Middle Level–College) *Napoleon B1, Sheraton*

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

Come experience original forensic mysteries and case studies that can be used in any science classroom. Lab manuals and CDs provided.

Enhancing STEM Education Through University and Community Partnerships —Science Teaching— (Gen)
(Middle Level–High School) *Napoleon B2, Sheraton*

Cathi Cox (*ccox@lincolnschools.org*), Lincoln Parish School Board, Ruston, La.

Missy Wooley, Ruston High School, Ruston, La.

Presider: William C. Deese, Louisiana Tech University, Ruston

Experience components from the evolution of Ruston High School's STEM Satellite, an enhanced program focused on science/technology/engineering/mathematics.

NASA: Cool Astronomy —Science Content— (Earth)

(Middle Level—College)

Napoleon C2, Sheraton

Bryan J. Mendez (bmendez@ssl.berkeley.edu) and **Greg Schultz** (schultz@ssl.berkeley.edu), University of California, Berkeley

Learn about the infrared portion of the electromagnetic spectrum and what astronomers learn by studying objects in the universe using this invisible light.

Brain Boot Camp...Empowering Student Learning —Science Content— (Bio)

(Middle Level—High School)

Napoleon D1&2, Sheraton

Laurie A. Hayes (lhayes@cart.org) and **Rylie Hilscher** (rhilscher@cart.org), Center for Advanced Research and Technology, Clovis, Calif.

Give your students an opportunity to learn about the brain's strengths and weaknesses. Join us for this fun and action-filled workshop.

Amazingly Simple Enzyme Assays for Everyone —Science Content— (Bio)

(Elementary—High School)

Rhythms II, Sheraton

Suzanne M. Cunningham (scunning@purdue.edu) and **Sherry Fulk-Bringman** (sherryfb@purdue.edu), Purdue University, West Lafayette, Ind.

Enzyme activity can be visualized using starch-agar gels, corn seed, saliva, iodine indicator, puzzles, and Legos™, enabling students in grades 3–12 to better understand digestion and synthesis.

A Foolproof Enzyme Lab —Science Teaching— (Bio)

(High School)

Rhythms III, Sheraton

Pamela J. Bryer (pbryer@bowdoin.edu), Bowdoin College, Brunswick, Maine

Participate in an inquiry-based exercise in enzyme kinetics using glucose oxidase. Making and using standard curves with the enzyme will also be covered.

Building a Renewable Energy City —Science Content— (Phys)

(Middle Level—High School/Informal Education)

Salons 816 & 820, Sheraton

Tara Chklovski (tara@iridescentlearning.org) and **Kara Christianson** (kara.christianson@gmail.com), Iridescent, Los Angeles, Calif.

Paul Yarin (yarin@blackdust.com), Blackdust, Los Angeles, Calif.

A team of engineers mentored 30 high school students for five weeks to design and build a city that was powered by renewable energy.

NASA Brings You Newton's Laws of Motion —Science Content— (Phys)

(General)

Salons 825 & 829, Sheraton

David P. Beier (dbeier@barstowschool.org), The Barstow School, Kansas City, Mo.

A NASA astrophysics ambassador shares a plethora of quick activities to experience Newton's laws of motion. Take home NASA's new Newton's Laws poster sets and other NASA freebies.

12:30–1:30 PM EXHIBITOR WORKSHOPS

Coordinated Science for the Physical, Earth, and Space Sciences (Gen)

(Grades 5–8)

Room 212, Convention Center

Sponsor: It's About Time

Robert Granza, It's About Time, Armonk, N.Y.

This curriculum introduces students to fundamental laws and theories of science in a student-friendly approach, challenging students to use their creativity, interest, and expertise to solve problems the way they would in the real world. Find out what makes this curriculum different and how it works! Leave with a practical hands-on activity that you can do in your classroom. Hear from teachers who have used the program and find out how it's working with their students.

Tough Topics in Physics: Ohm's Law —Science Teaching— (Phys)

(Grades 6–12)

Room 218, Convention Center

Sponsor: PASCO Scientific

Geoffrey Clarion, PASCO Scientific, Roseville, Calif.

Explore PASCO's state-of-the-art science teaching solution to one of the toughest aspects of physics investigations—Ohm's Law. Participate in standards-based probeware lab activities from PASCO's new physics curriculum. See how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

Tough Topics in Biology: Cell Respiration —Science Teaching— (Bio)

(Grades 6–12)

Room 219, Convention Center

Sponsor: PASCO Scientific

Ryan Reardon, Alabama School of Fine Arts, Birmingham

Let's explore PASCO's state-of-the-art science teaching solution to one of the toughest aspects of biological investigations—cell respiration. Participate in standards-based probeware lab activities from PASCO's new biology curriculum. See how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

Flinn Scientific eLearning Teaching Chemistry™ Video Series —Science Teaching— (Chem)

(Grades 9–12)

Room 244/245, Convention Center

Sponsor: Flinn Scientific, Inc.

Irene Cesa, Flinn Scientific, Inc., Batavia, Ill.

Flinn Scientific has developed an exciting new professional development video program for high school chemistry teachers. Imagine the opportunity to watch 20 award-winning master teachers sharing their favorite and most effective demonstrations, experiments, and chemistry lab activities. You can! Please join us as we present interactive demonstrations, show video clips, and discuss the features and benefits of our new and very affordable *Teaching Chemistry™* Video Series. This comprehensive program consists of more than 120 video products, with nearly 400 individual episodes or activities, all organized into 30 major topic areas in the high school chemistry curriculum! The activities come to life as our presenters share the inspiration, stories, and strategies that will help you motivate your students and allow them to succeed.

12:30–2:00 PM PRESENTATION

SESSION 1

PDI

UNV Pathway Session: Here's a Doable Approach to Differentiation: Strategies for ELL —Professional Development— (Gen)

(General)

Room 350, Convention Center

John Carr (jcarr@wested.org), WestEd, Clayton, Calif.

Ursula Sexton, WestEd, Redwood City, Calif.

Simple charts showing academic language skills for beginning to fluent English learners can be used in conjunction with four instructional strategies to scaffold content learning for English learners. The charts and core strategies are based on WestEd's *Making Science Accessible to English Learners: A Guidebook for Teachers*.

12:30–2:30 PM PRESENTATION

SESSION 1

PDI

WestEd Pathway Session: A Professional Learning Community Strategy: Conceptual Flow to Map Content —Science Teaching— (Gen)

(General)

Room 341, Convention Center

Susan Gomez-Zwiep (sgomezwp@csulb.edu), K–12 Alliance, Santa Ana, Calif.

Shawn Holmes, North Carolina State University, Raleigh

Science sensemaking revealed! Learn a collaborative process to organize science content into a comprehensible story line using backwards mapping.

12:30–2:30 PM WORKSHOP

NSTA Urban Science Education Leadership Network Presents...Analyzing Policies That Affect Students in Urban School Settings —Professional Development— (Gen)

(Elementary–High School)

Ascot, Hilton

Vanessa Westbrook (vwestbrook@mail.utexas.edu), NSTA Director, Multicultural/Equity in Science Education, and The University of Texas at Austin

Come examine policies in urban settings that affect student success. What are these policies, do they support the urban setting, and how do policies differ from one urban city to the next? Bring a copy of your district policies that address issues in an urban setting and we will compare!

12:30–3:30 PM PRESENTATIONS

SESSION 1

PDI

FI Pathway Session: Using Online Tools to Support Assessment for Learning —Assessment— (Phys)

(General)

Room 339, Convention Center

Jim Minstrell (jimminstrell@facetinnovations.com) and **Ruth Anderson** (randerson@facetinnovations.com), FACET Innovations, Seattle, Wash.

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

We will feature the tools available at www.diagnoser.com. We'll address the following questions: What assumptions about learning are built into the tools? What tools are on the site? How are teachers using these tools? What are the effects on students' learning when teachers and students use these tools? How might these tools be used for professional development for enhancing teachers' content knowledge as well as their assessment and teaching skills?

PDI**SESSION 2****HRI Pathway Session: Knowing What They Know: Analyzing Student Work to Reveal Student Thinking —Science Teaching— (Gen)***(Elementary–High School)**Room 342, Convention Center*

Sean Smith and **Melanie Taylor** (*mtaylor@horizon-research.com*), Horizon Research, Inc., Chapel Hill, N.C.

We'll look at strategies and resources for analyzing student work and practice using them.

1:00–1:30 PM PRESENTATION**SESSION 1****Teaching Biotechnology to Grades 10–11 with an Interdisciplinary Project That Includes e-Learning Technology —Science Teaching— (Bio)***(High School–College)**Maurepas, JW Marriott*

Ana Cristina de Palma Camargo (*a.palma@vol.com.br*), Colégio Bandeirantes, São Paulo, Brazil

Colégio Bandeirantes, a private school, has been working with Biotechnology Project, an educational project in which teenagers engage in contemporary issues in biotechnology, including bioethics. At the same time, students develop a number of important skills, notably teamwork, research, manipulation of lab materials, and getting in touch with experts.

1:00–2:00 PM NSTA's ESP SYMPOSIUM I**Exemplary Science Programs in Grades PreK–4 (Gen)***(Grades PreK–4)**Room 252, Convention Center*

Coordinator: Robert E. Yager, 1982–1983 NSTA President, Editor of the NSTA ESP Program, and The University of Iowa, Iowa City

The Exemplary Science Program (ESP) was initiated by NSTA to produce monographs consisting of descriptions of programs and evidence of their effectiveness in producing superior student learning. This session will include brief descriptions of programs that exemplify how the four NSES goals have been met. Drawn from chapters in several monographs in the series, these sessions will center on how NSES *More Emphasis* suggestions have guided instruction. Participants in this roundtable will include authors of specific chapters:

Creating a Context for Inquiry

Janis Bookout (*janisbookout@grandecom.com*), Hornsby-Dunlap Elementary School, Austin, Tex.

The Primary Classroom: Science, Literacy, and Inquiry

Peter Veronesi (*pveronesi@brockport.edu*), State University of New York College at Brockport

Thinking Outside the Box: No Child Left Inside!

Kim Cleary Sadler (*ksadler@mtsu.edu*), Middle Tennessee State University, Murfreesboro

1:00–2:00 PM MEETING

Write from the Start Meeting

Evergreen, Sheraton

NSTA journal editors present their top writing tips for all potential authors.

1:00–2:15 PM EXHIBITOR WORKSHOP

Working as One with Hands and Minds —Science Education Program— (Gen)
(Grades 1–8) *Room 208, Convention Center*

Sponsor: Delta Education/School Specialty Science

Tom Graika, Consultant, Lemont, Ill.

Johanna Strange, Consultant, Richmond, Ky.

Students learn best when both their minds and their hands are engaged in classroom activities. A problem-solving approach to teaching promotes this kind of student learning. Delta Science Modules and technological activities will illustrate a variety of problem-solving strategies that lead to real learning. Participants will receive a resource packet.

1:00–2:30 PM WORKSHOP

DuPont Session: DuPont Presents—Connecting Science and Mathematics Literacy —Science Teaching— (Gen)
(Elementary) *Southdown, Sheraton*

Glenda S. Pepin (rockyqsp@mac.com) and **Connie Chappelle** (conniechappelle@anderson5.net), Clemson University, Clemson, S.C.

Make connections between science and mathematics literacy. We'll investigate a variety of representations, including writing, graphic organizers, and drawings.

1:00–2:30 PM EXHIBITOR WORKSHOPS

FOSS Assessment: Valuing Academic Progress in Grades 3–6 —Science Content— (Gen)
(Grades 3–6) *Room 209, Convention Center*

Sponsor: Delta Education/School Specialty Science-FOSS

Larry Malone, Brian Campbell, and Kathy Long, Lawrence Hall of Science, University of California, Berkeley

The ASK Project (Assessing Science Knowledge) has developed an assessment system for determining levels of student understanding of scientific ideas. We'll introduce you to benchmark assessments for FOSS modules, grades 3–6, and the tools and strategies teachers use to analyze student work and plan next steps in instruction. Sample materials will be distributed.

Inquiry Investigations™ Biotechnology Curriculum Modules and Kits —Science Content— (Gen)
(Grades 7–10) *Room 213, Convention Center*

Sponsor: Frey Scientific/School Specialty Science

Ken Rainis, Frey Scientific/School Specialty Science, Nashua, N.H.

Lisa Bowman, Mansfield, Ohio

With our new Inquiry Investigations™ biotechnology series, students learn foundational analysis skills that help them understand foundational science concepts. See how program software allows the preparation of web-based content along with individualized assessment. We'll compare both virtual and actual gel electrophoretic separations and conduct a DNA chip investigation. Receive resource materials.

1:00–3:00 PM MEETING

New Science Teacher Academy Conference Discussion Session

(By Invitation Only)

Bayside B, Sheraton

A chance for members of the Academy to share conference experiences and best practices.

1:00–3:30 PM EXHIBITOR WORKSHOP

Bio-Rad Got Protein?™ Kit —Science Teaching—

(Bio)

(Grades 5–College)

Room 229, Convention Center

Sponsor: Bio-Rad Laboratories

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

How much protein is in your food? Apply Beer's law to measure the protein concentration in a variety of food, including milk, sports drinks, soy products, etc. Use the Bradford assay to determine concentration qualitatively by eye or quantitatively with a spectrophotometer. This lab integrates the physical, chemical, and biological properties of proteins.

1:00–4:00 PM SHORT COURSE

COSEE: The Oceans, They Are A-Changin': How Might This Affect You? (SC-13)

(Middle Level–High School)

Tickets Required; \$32

Ballroom I, Westin

Liesl Hotaling (lhotaling@thebeaconinstitute.org), The Beacon Institute for Rivers and Estuaries, Beacon, N.Y.

Annette deCharon, Darling Marine Center, University of Maine, Walpole

Janice McDonnell (mcdonnell@marine.rutgers.edu), Institute of Marine and Coastal Sciences, New Brunswick, N.J.

For description, see Volume 1, page 85.

1:30–2:00 PM PRESENTATIONS

SESSION 1

Teacher Researcher Day Session: Lesson Study as a Pathway for Reflection, Professional Development, and Building Collegiality —Professional Development—

(Gen)

(High School)

Acadia (Group 1), New Orleans Marriott

Bradford Hill (bradford_hill@beaverton.k12.or.us), Southridge High School, Beaverton, Ore.

Kevin J. Henson (khenson@lrhsd.org), Lenape High School, Medford, N.J.

Emilie Cross (ecross6@cherrycreekschools.org), Smoky Hill High School, Aurora, Colo. We will discuss how collaboration on Lesson Study helped them grow as teachers, study their own teaching practice, focus on student understanding, and stay connected.

SESSION 2

Teacher Researcher Day Session: Multivariate Analysis of Student Attitude, Motivation, and Predictors of Success in Secondary Science —*Science Teaching*— (Gen)

(Middle Level–High School)

Acadia (Group 3), New Orleans Marriott

Ramona L. Toth and **Scott Davis**, Liberty High School, Hillsboro, Ore.

We will share program improvement recommendations and research findings on factors encouraging students to take three or more years of science in the fourth largest school district in Oregon.

SESSION 3

Teacher Researcher Day Session: Engaging Prospective Teachers in Integrating Physics and Literacy Learning —*Professional Development*— (Gen)

(General)

Acadia (Group 4), New Orleans Marriott

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

Join a conversation about ways to integrate science and literacy learning in a physics course for prospective teachers.

Age is just a number.
Life is what you make of it.



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

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

Saturday, March 21
8:00–9:00 AM
New Orleans Marriott
Jackson

For information on the Retired Members Advisory Board, contact Marily DeWall, chair, at mdewall@cox.net.

NATIONAL
SCIENCE
TEACHERS
ASSOCIATION **NSTA**

1:30–3:00 PM SHELL SCIENCE SEMINAR

What Neuroscience Can Teach Us About Teaching**(Gen)***(General)*

Room 243, Convention Center



Scientist

Thomas J. CarewPresident, Society for Neuroscience, and
Donald Bren Professor and Chair

Dept. of Neurobiology and Behavior

University of California-Irvine

Irvine, Calif.

tcarew@uci.edu

Presider: Suzie Johnson (sjohnson@tpsd.org), Terrebonne Parish
School System, Houma, La.

Over the last 20 years, neuroscience has made remarkable progress in elucidating the ways in which the brain acquires, stores, and retrieves information. As a consequence, we are beginning to understand how our brains enable us to learn and remember. However, the implications of this progress have remained surprisingly unconnected from applications of this knowledge in the K–12 classroom. Collaborative research between neuroscience and education is a new and emerging field. We are just starting the process of translating research and applying it to educational practice. I will briefly describe some exciting recent progress in the neurobiology of learning and memory, and we will look at ways in which this new information could inform strategies in the classroom that optimize the learning experience for our students.

Thomas J. Carew holds a PhD from the University of California, Riverside. He was a member of the faculty of Columbia Medical School before moving to Yale, where he was John M. Musser Professor of Psychology, a professor of molecular, cellular, and developmental biology, and a former chair of the Department of Psychology. Dr. Carew currently holds an endowed chair at the University of California, Irvine (UCI), where he is Donald Bren Professor and Chair of the Department of Neurobiology and Behavior.

Dr. Carew is a fellow of the American Psychological Association and the American Psychological Society, an elected member of the Society for Experimental Psychology, an elected fellow of AAAS, an elected fellow of the American Academy of Arts and Sciences, and a past councilor of the Society for Neuroscience. Dr. Carew's research interests center on behavioral, cellular, and molecular analyses of the brain mechanisms underlying learning and memory.

Dr. Carew is president of the Society for Neuroscience, which has a membership of more than 38,000 basic scientists and clinicians who study both normal brain function and ways in which brain function can go awry. As president of the society, Dr. Carew will share some current advances in brain science, especially as they pertain to learning and memory.

1:30–3:00 PM SHELL SCIENCE SEMINAR

Expanding Hubble’s Vision

(General)

(Gen)

Room 352, Convention Center



Scientist

Michael Weiss

Deputy Program Manager

Hubble Space Telescope Program

NASA Goddard Space Flight Center

Greenbelt, Md.

Presider: Gary Kratzer (gkratzer@rocketmail.com), Calcasieu Parish Science Master Teacher, Lake Charles, La.

The Hubble Space Telescope is arguably the most productive scientific instrument ever built. This May, seven astronauts will board the Space Shuttle *Atlantis* and travel to Hubble to bring it to the apex of its scientific capability. They will upgrade Hubble’s instruments by installing a powerful new panchromatic imaging camera and the most sensitive spectrograph ever flown in space. Come hear about Hubble’s new and exciting potential for scientific discovery and see some of Hubble’s most remarkable images.

Michael Weiss is currently deputy program manager of the Hubble Space Telescope Program at NASA’s Goddard Space Flight Center. From 1978 to 1990, he led NASA’s systems engineering activities for numerous earth and space science spacecraft, including SMM, UARS, GRO, and EUVE. He also managed the systems engineering activities for the first Shuttle-based satellite repair mission, the Solar Maximum Repair Mission, which flew in 1984. He directed the systems development of the first two Hubble servicing missions, which flew in 1993 and 1997, respectively. From 1997 to 2000, Weiss served as deputy division chief of Goddard’s Systems Engineering Division, which served as a home base for all earth and space science mission systems engineers.

In 2000 Weiss returned to Hubble as deputy program manager to lead the technical development of all program activities, including servicing, operations, and advanced studies. He has accumulated over 200 hours in NASA’s Neutral Buoyancy Laboratory training Shuttle flight crews on servicing techniques and procedures. Under his technical direction, Hubble continues to function as the world’s premier observational facility.

1:30–3:00 PM PRESENTATION

SESSION 1

PDI

NGS Pathway Session: The BioBlitz Program—Bringing Science into Your Backyard —Science Content—

(Bio)

(Elementary–Middle Level/Informal Education)

Room 347, Convention Center

Patricia Norris (pnorris@ngs.org), **Mary Crooks** (mcrooks@ngs.org), and **Tim Watkins** (tiwatkin@ngs.org), National Geographic Society, Washington, D.C.

Learn how to conduct a BioBlitz with your students. Expose them to the rich biodiversity of the world and in their own local ecosystems.

1:30–3:00 PM EXHIBITOR WORKSHOP

Using Technology in Your Science Classroom: How to Really Hook Your Students (Gen)*(Grades 6–College)**Room 211, Convention Center*

Sponsor: Fisher Scientific Education

Presenter to be announced

Want to really get your class involved? Want to increase and enrich your curriculum, get your students on task, let your students create individual portfolios of visual images to verify their laboratory reports, and increase content coverage at the same time? Learn how to use a camera (visualizer) in your classroom as you become more “hi-tech” by integrating with your computer, projector, and interactive board. This workshop is presented by Ken-A-Vision.

1:30–4:30 PM SHORT COURSE

**Using Technology to Teach Science Concepts Through Outdoor Studies (SC-14)***(Middle Level–College)***Tickets Required; \$71***Terrace, Westin*

Bill Klein (wjmsklein@aol.com), Western Iowa Tech Community College, Sioux City, Iowa

For description, see Volume 1, page 86.

1:30–5:30 PM SHORT COURSE

**Attaining National Board Certification for Professional Teaching Standards in Science (SC-15)***(Grades 7–12)***Tickets Required; \$45***River Room I/II, Westin*

Steve Tester, NBCT (retsetevets@hotmail.com), Tester Educational Services, Stone Mountain, Ga.

Shireen Samuel Robinson, NBCT (onefortunate@msn.com), Baltimore (Md.) City Public Schools

For description, see Volume 1, page 86.

2:00–3:00 PM **AMERICAN GEOPHYSICAL UNION (AGU) LECTURE**

The Grand Isle Project: Using Service Learning to Generate Genuine Scientific Experiences for Students While Serving Society (Gen)
(General) Room 244/245, Convention Center



Speaker
Sadredin C. Moosavi
Professor of Practice
Dept. of Earth and Environmental Science
Tulane University
New Orleans, La.
smoosavi@tulane.edu

Presider: Jan Graff (jgraff@caddo.k12.la.us), Caddo Parish Middle School Science Specialist and 1998–1999 LSTA President, Shreveport, La.

The Grand Isle Project uses a service-learning approach in a physical geology course serving mostly nonmajors to generate genuine hands-on scientific experiences for general education undergraduates. Over several semesters, teams of Tulane students have measured and monitored erosion on Grand Isle through periods of natural erosion, beach nourishment by the Army Corps of Engineers, and devastation by Hurricanes Gustav and Ike, building a unique data set on barrier island performance at a location vital to the natural defense of greater New Orleans. The insights gained serve local educational efforts, planning, and public school outreach in collaboration with Grand Isle State Park and the New Orleans Geological Society. This project offers a model for how service learning can be used to support science education and public outreach linking universities, K–12 schools, and local community organizations in the creation of citizen scientists engaged in issues critical to the environment.

Sadredin (Dean) Moosavi holds a PhD in geosciences from the University of New Hampshire. After graduation, he served as a sabbatical replacement science teacher at Oyster River High School in Durham, New Hampshire. Moosavi's return to academia came in answer to the call for assistance in the preparation of preservice teachers at Minnesota State University-Mankato, where he created several geology courses to satisfy new licensure requirements demanded of Minnesota teachers.

After a brief stint in online education through Walden University, Moosavi moved to Tulane University's Department of Earth and Environmental Sciences (EENS) to assist in the rebuilding and recovery of New Orleans by redesigning the physical geology lecture and lab courses in line with modern best practices. Moosavi's research interests in science education include meeting the needs of lower division geoscience students; improving general public understanding of geoscience issues, especially those related to climate change and land use; increasing general public understanding of space science issues; professional development of preservice and inservice science teachers; and preparing teachers to traverse the conflict between intelligent design/religion/political beliefs and geoscience concepts such as the geologic time scale.

2:00–3:00 PM NSTA’s ESP SYMPOSIUM II**Exemplary Science Programs in Grades 9–12***(Grades 9–12)***(Gen)***Room 252, Convention Center*

Coordinator: Robert E. Yager, 1982–1983 NSTA President, Editor of the NSTA ESP Program, and The University of Iowa, Iowa City

The Exemplary Science Program (ESP) was initiated by NSTA to produce monographs consisting of descriptions of programs and evidence of their effectiveness in producing superior student learning. This session will include brief descriptions of programs that exemplify how the four NSES goals have been met. Drawn from chapters in several monographs in the series, these sessions will center on how NSES *More Emphasis* suggestions have guided instruction. Participants in this roundtable will include authors of specific chapters:

Technology and Cooperative Learning: The IIT Model for Teaching Authentic Chemistry Curriculum

Gregory MacKinnon (*gregory.mackinnon@acadiau.ca*), Acadia University, Wolfville, N.S., Canada

Student Inquiry at the Illinois Mathematics and Science Academy

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

Stop Talking, Start Listening: Turning Didactic Science Teaching on Its Head

Peter Veronesi (*pveronesi@brockport.edu*), State University of New York College at Brockport

2:00–3:00 PM SOCIAL**NSTA New Member Social***(By Invitation Only)**La Galerie 6, New Orleans Marriott*

This session instructs new NSTA members on how to get the most from NSTA’s vast array of products and services. This event is graciously sponsored by GEICO.

2:00–3:00 PM MEETING**Reviewing for NSTA’s Journals Meeting***Evergreen, Sheraton*

NSTA journal editors present tips on reviewing for the journals and will recruit new members for the panel.

2:00–3:00 PM PRESENTATIONS**SESSION 1****Alternative Energy Sources: Inquiry-based Activities for Science Classrooms**
*—Science Teaching—***(Gen)***(Middle Level–High School)**Room 239, Convention Center*

Darlene L. Montesanti (*dldmontesanti@yahoo.com*), **Peter A. Wish**, **Rachel A. McBroom** (*rachel.mcBroom@uncp.edu*), and **Keenan E. Locklear**, The University of North Carolina at Pembroke

Stefanie Phillips, Scotland High School, Southern Pines, N.C.

Explore alternative energy sources (focusing on biofuels) and a variety of student-tested inquiry-based classroom activities. Handouts.

SESSION 2



ISTE: For Teachers by Teachers: NASA Brings a Standards-based Shuttle —Science Content— **(Gen)**

(General)

Room 242, Convention Center

Theresa Martinez (theresa.c.martinez@nasa.gov), NASA Kennedy Space Center, Kennedy Space Center, Fla.

Work with NASA's Kennedy Launch Academy Simulation Software, which allows students to be the engineers for simulated launch countdowns. This interactive software will enhance your lessons and engage your students while supporting math, science, and technology standards.

SESSION 3

Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-Up Session: Voices from the Classroom **(Env)**

(High School)

Room 256, Convention Center

Leesa Hubbard (astro poet@aol.com), Sally Ride Science, Lebanon, Tenn.

High school teachers will share their success stories about incorporating climate sciences into their classroom.

SESSION 4

PDI

LHS Pathway Session: Ethanol: The Cleaner Burning Alternative? —Science Content— **(Chem)**

(High School)

Room 337, Convention Center

Barbara Nagle (bnagle@berkeley.edu), Lawrence Hall of Science, University of California, Berkeley

Compare the by-products of ethanol and kerosene combustion and discuss issues related to ethanol as an energy alternative.

SESSION 5

VitalVenture: A Watershed Education Continuum for Grades 5–8 —Science Content— **(Earth)**

(Middle Level)

Room 356, Convention Center

Justine Glynn (justine@gmri.org), Gulf of Maine Research Institute, Portland

I'll share lesson plans, open-source materials, and internet resources for studying your local watershed. Learn how this complex system is affected by human action.

SESSION 6

K–5 Formative Assessment Strategy Harvest —Assessment— **(Gen)**

(Elementary)

Room R05, Convention Center

Lynn Farrin, Mary Dunn, and Nancy S. Chesley, Maine Mathematics and Science Alliance, Augusta

Discover FACTs (Formative Assessment Classroom Techniques), purposeful methods that weave assessment into the process of instruction and learning.

SESSION 7

CESI Session: Dumbledore’s Transfiguration Class: Science and Magic from Hogwart’s Academy —Science Teaching— (Gen)

(Preschool–Middle Level/Informal Education)

Room R07, Convention Center

Alan J. McCormack (*amccorma@mail.sdsu.edu*), CESI President, and San Diego State University, San Diego, Calif.

Magical and scientific events highlight adventures of Harry Potter in the worldwide children’s literature series. Moaning Myrtle, Fawkes the Phoenix, and Hedwig the Owl will be guests!

SESSION 8 (two presentations)

(General)

Magnolia, Hilton

Presider: Lori J. Hrinko, North East Middle School, North East, Md.

Building an Inclusive Science Class —Professional Development— (Gen)

Carla Romney (*romney@bu.edu*) and **Donald A. DeRosa** (*donder@bu.edu*), Boston University, Boston, Mass.

We will share effective strategies for fostering collaboration between special educators and science educators.

Science for ALL Students! —Science Teaching— (Gen)

Amy Jo Smith and **Beth Hudson**, North East Middle School, North East, Md.

Come get some tips for teaching special education students, including nonverbal students.

You’re invited...
to the NSTA New Member
Orientation

Please join us for this exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments while hearing about how preservice and new teachers can save money on BOTH their NSTA membership dues as well as auto insurance! If you joined NSTA as a member after June 1, 2008, and/or received an e-mail invitation to this event from NSTA, please join us!

Friday, March 20 • 2:00–3:00 PM
New Orleans Marriott • La Galerie 6
Compliments of GEICO Insurance



SESSION 9 (two presentations)

(General)

Versailles Ballroom, Hilton

Hollywood Science: Using Movies in Your Classroom

(Gen)

Jacob Blickenstaff, University of Southern Mississippi, Hattiesburg

The author of the *NSTA Reports* column “Blick on Flicks” will discuss teachable moments from recent films and DVD releases.

Beyond the Veil: Fostering Reflective Practice with New Tools for Digital Video Analysis —Professional Development—

(Gen)

Elisabeth C. Boyer, Pennsylvania State University, University Park

Use digital video analysis to move reflection out of the head of the experienced teacher and into the hands of the preservice student.

SESSION 10

Siemens “We Can Change the World Challenge”

(Env)

(Middle Level)

Windsor, Hilton

Lance Rougeux (lance_rougeux@discovery.com), Discovery Education, Silver Spring, Md.

Presider: Eric V. Crossley (ecrossley@nsta.org), Assistant Director, Corporate Partnerships/Toyota TAPESTRY Grants for Science Teachers, NSTA, Arlington, Va.

Join Siemens, Discovery Education, and NSTA for an interactive session designed to introduce middle school teachers to the Siemens “We Can Change the World Challenge,” the premier national student sustainability competition. Enhance your life science curriculum with a unique, hands-on way to engage students in developing actionable local solutions for a “greener” world and learn how you and your students can win exciting prizes! Free teacher resources for all participants, plus exciting prize giveaways!

SESSION 11 (two presentations)

(College)

Frontenac, JW Marriott

SCST Session: Research in Teaching: An SCST Forum —Professional Development—

(Gen)

James R. Holden (tcholdj@tcc.edu), Tidewater Community College, Portsmouth, Va.

Members of the Research in Teaching committee will discuss a variety of initiatives to promote the importance of science teaching research.

SCST Session: Science Educators and the Quest for Promotion and Tenure

(Gen)

Ted Cox (tcx@uwsuper.edu), University of Wisconsin, Superior

Brian Rybarczyk (brybar@unc.edu), The University of North Carolina at Chapel Hill

Ann Parsons (parsonsa@uwstout.edu), University of Wisconsin-Stout, Menomonie

Linda L. Tichenor (lticheno@uafortsmith.edu), University of Arkansas, Fort Smith

We’ll present a special committee report on the role of teaching in promotion and tenure decisions and the results of a national survey.

SESSION 12

Project PRiSE: Persistence Research in Science and Engineering —Science Teaching—

(Gen)

(General)

Orleans, JW Marriott

Gerhard Sonnert (gsonnert@cfa.harvard.edu) and **Jaimie Miller**, Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

With a focus on gender issues, we will share results from a study about factors that predict career interests in STEM fields among beginning college students.

SESSION 13**High School Students Monitoring Weather Hazards from Space —Science Content—** (Env)*(High School)**Bonaparte, New Orleans Marriott***Ross Blank-Libra** (*ross.blank-libra@k12.sd.us*), Washington High School, Sioux Falls, S.Dak.

Discover a lesson designed to teach students the fundamentals of remote sensing through a hands-on simulation of a decision-making process for identifying drought and flood hazards.

SESSION 14**Informal Science Day Session: Ultimate Science Education Partnerships —Science Teaching—** (Gen)*(General)**Carondelet/Group 1, New Orleans Marriott***Tina J. Cartwright** (*tina.cartwright@marshall.edu*), Marshall University, Huntington, W.Va.**Tony Streit** (*tstreit@edc.org*), Education Development Center, Inc., Chicago, Ill.

Presider: Maryann Stimmer, Educational Equity Center at AED, New York, N.Y.

Ultimate science partnerships connect school-day science to after school's unique venue for inquiry. Experts in forging these partnerships share their strategies and successes.

SESSION 15**Informal Science Day Session: It's ALIVE! How Zoos and Aquariums Can Promote Science —Science Content—** (Bio)*(Informal Education)**Carondelet/Group 2, New Orleans Marriott***Ben Hunt** (*bhunt@shedd-aquarium.org*), John G. Shedd Aquarium, Chicago, Ill.

Presider: Terri Stern, Yale Peabody Museum of Natural History, New Haven, Conn.

Did you know zoos and aquariums can help you address science inquiry standards? Learn how these content-rich resources aren't meaningless "field trips" for your students.

SESSION 16**Informal Science Day Session: Web 2.0 for Science: Examples of Participatory Tools for Science Learning —Science Teaching—** (Gen)*(General)**Carondelet/Group 3, New Orleans Marriott***Chad W. Dorsey** (*cdorsey@concord.org*), The Concord Consortium, Concord, Mass.**Kimberly Lightle** (*lightle.16@osu.edu*), The Ohio State University, Columbus

Learn about the work of museums, research labs, scientific societies, and others who are using social collaboration and data mash-up tools to enhance science learning.

SESSION 17 (two presentations)*(Informal Education)**Carondelet/Group 4, New Orleans Marriott***Informal Science Day Session: Bringing the Outside In: A Closer Look at Informal Learning Institutions and Their Role in the Science Classroom —Professional Development—** (Env)**James Kisiel** (*jkisiel@csulb.edu*), California State University, Long Beach

Some of the most memorable science learning experiences happen outside of school. Discover ways to more effectively tap into museums and other community resources.

Informal Science Day Session: Educational Value of Zoos and Aquariums: Results from Research on the Perceptions of Teachers, Administrators, and Parents —Professional Development— (Bio)

John Fraser (fraser@ilinet.org), Institute for Learning Innovation, Edgewater, Md.

How do educators and parents perceive zoos and aquariums in the education and development of children? We'll look at the research findings.

SESSION 18

Kids Teaching Kids Climate Change with Hands-On Demos —Science Teaching— (Env)

(General)

Jackson, New Orleans Marriott

Sylvia Petersen (sylvia_petersen@ipsd.org), Crone Middle School, Naperville, Ill.

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

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

These teacher-tested and kid-approved demos allow students to take ownership of their education. Learn about fantastic exhibits that demonstrate climate changes in our world.

SESSION 19

The NSTA Learning Center: Free Classroom Resources and Professional Development for Educators and More! —Science Teaching— (Gen)

(Supervision/Administration)

Regent, New Orleans Marriott

Flavio Mendez, Senior Director, NSTA Learning Center, Arlington, Va.

Need help finding online resources for your classroom? Let NSTA show you how the NSTA Learning Center can provide accurate, standards-aligned resources for your classroom. With over 2,400 resources, 25% of which are free, and quality professional development opportunities to assist educators with core subject content, NSTA can help!

SESSION 20 (two presentations)

(Middle Level–High School)

Bayside A, Sheraton

Science, Schoolyards, and Statistics: Using the Schoolyard to Gather Authentic Data —Science Teaching— (Gen)

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

Our partnership with the Maryland Association for Environmental and Outdoor Education and the U.S. Fish and Wildlife Service has given teachers and their students opportunities to create native plant habitats that improve the local environment and provide authentic opportunities for data collection.

An Interdisciplinary Project of *The World Without Us* —Science Teaching—

(Gen)

Elizabeth C. Helfant, Mary Institute and Saint Louis Country Day School, St. Louis, Mo.

A reading of Alan Weisman's *The World Without Us* provides a starting point for redesigning curricula to engage students in exploring the problems their generation must solve. It starts the year with a platform for motivating students to investigate science.

SESSION 21

Make Scientific Thinking Happen in the High School Classroom —Science Teaching— (Gen)

(High School)

Edgewood A/B, Sheraton

Bettina Dembek (*bdembek@edc.org*), Education Development Center, Inc., Newton, Mass.

Students answer questions but their answers don't really say much? Learn about adaptations you can make to your current lessons to open up students' minds and engage them more in scientific discourse.

SESSION 22

The Fairchild Challenge: Competitive, Multidisciplinary Environmental Education —Science Teaching— (Env)

(General)

Napoleon A3, Sheraton

Gwen Pollock (*gpollock@casscomm.com*), NSTA Director, Professional Development, and Science Consultant, Sherman, Ill.

Caroline Lewis, Fairchild Tropical Botanic Garden, Coral Gables, Fla.

The Fairchild Challenge is exploring new senses of creativity and curiosity for engaging students with nature center colleagues. Learn about our special fascination index!

SESSION 23

Coincidence or Pattern? When Do We Believe It? —Science Teaching— (Earth)

(General)

Napoleon C1, Sheraton

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

Here is a model lesson that intrigues and engages all audiences. Tantalizing coincidences and patterns are described and related to the historical quest to discover planets in our solar system, distinguishing correlation from cause/effect.

SESSION 24

NSTA High School Chemistry Share Session —Science Content— (Chem)

(High School)

Napoleon D3, Sheraton

Ted Koehn (*tkeohn@lps.org*), Lincoln East High School, Lincoln, Neb.

Vincent Pereira (*vt.pereira@verizon.net*), NEST+m, New York, N.Y.

Presider: Chuck Cohen, NSTA Director, District XVIII, and Tanenbaum Community Hebrew Academy of Toronto, Vaughan, Ont., Canada

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

SESSION 25 (two presentations)

(Middle Level–High School)

Rhythms I, Sheraton

A Secret of Fruit Ripening: Measuring Ethylene Production in School Laboratories —Science Content— (Bio)

Supaporn Porntrai (*sporntrai@yahoo.com*), Ubon Rajathanee University, Ubon Ratchathani, Thailand

I'll share a simple bioassay based on titration of malic acid that provides an indirect but reliable indication of ethylene production by fruits.

A “Bird in the Hand” Is Worth a Classful of Young Biologists —Science Content— (Bio)

Michelle A. Giroir (*mgiroir@mcsd.k12.co.us*), Columbine Middle School, Montrose, Colo.

Glenn P. Giroir (*glenn.giroir@rmbo.org*), Rocky Mountain Bird Observatory, Brighton, Colo.

A field trip to a bird banding and research station can provide a valuable and unforgettable outdoor education experience.

SESSION 26

Project-based Assessments for Physical Science Students —Science Teaching— (Chem)

(Middle Level–High School)

Salons 817 & 821, Sheraton

Jennifer M. Range (rangej@ritenour.k12.mo.us), **Laura A. Eberle** (eberlel@ritenour.k12.mo.us), and **Lori A. Greiner** (greinerl@ritenour.k12.mo.us), Ritenour High School, St. Louis, Mo.

Are you tired of paper and pencil tests? See three examples of project-based assessments that engage students through the use of technology.

SESSION 27

Graphic Organizers in a Digital World —Science Teaching— (Phys)

(Middle Level–High School)

Salons 825 & 829, Sheraton

David A. Young (dayoung7@gmail.com), Fayetteville (Ark.) Public Schools

How can we come to know what students know through the use of technology? Student drawings will allow the learning community to grow and learn.

SESSION 28

From Akron, Ohio, to Cape Town, South Africa —Science Teaching— (Earth)

(General)

Salon 828, Sheraton

Steven L. Frantz, Roswell Kent Middle School, Akron, Ohio

The “SATELLITE Girls” will present their award-winning research and share their experiences in South Africa at the Globe Learning Experience 2008.

2:00–3:00 PM WORKSHOPS



Step Up to a Symphony of Science —Science Teaching— (Gen)

(Preschool/Elementary)

Room 238, Convention Center

Kirstin Reed (kreed@dmail.net) and **Sonya Nelson** (snelson@dmail.net), Knowlton Elementary School, Farmington, Utah

Presider: **Rita Stevenson** (rstevenson@dmail.net), Knowlton Elementary School, Farmington, Utah

Learn how movement, music, and art can enhance your science classroom. Experience how creative movement helps students and teachers understand and retain science concepts.

Minerals, Rocks, and Cereal

(Earth)

(Elementary–Middle Level)

Room 253, Convention Center

Mark Greenman (greenman.mark@marbleheadschoools.org), Marblehead (Mass.) Public Schools

These fun, safe, student-centered activities engage students as mineralogists/geologists as they explore conditions for the formation of common minerals and then build their minerals into common igneous rocks.

Inquiry—Not Always Fair! —Professional Development— (Gen)
(Preschool–Middle Level) Room 254, Convention Center

Stephen D. Marshall (steve.marshall@barnet.gov.uk), The London Borough of Barnet, London, U.K.

Within the English science community we have identified six different types of inquiry (enquiry). We'll focus on fair-testing and pattern-seeking types.

Igniting Students' Interests in Science Careers —Science Teaching— (Gen)
(Elementary–Middle Level) Room 344, Convention Center

Julie Miller (jmillerirc@olatheschools.com), Sally Ride Science, Olathe, Kans.

Explore the wide range of science careers, the many paths to becoming a scientist, and the vibrant women and men in science today. Students' interests can come alive through hands-on activities as well as personal explorations.

The Outdoor Class Study Area: An Integrated Learning Experience —Science Content— (Gen)
(Elementary–Middle Level) Room 345, Convention Center

Carol Ann Brennan (carolb@hawaii.edu), **Brooke Davis** (bdavis@hawaii.edu), and **Thomas Scarlett** (scarlett@hawaii.edu), University of Hawaii, Honolulu



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www.BamaByDistance.ua.edu/science 1-800-467-0227



Learn how a small area of the school yard can engage students in uncovering the mysteries of how nature works. Handouts provided.

Stop Faking It! Finally Understand MORE CHEMISTRY BASICS So You Can Teach It —Professional Development— (Chem)

(Elementary–Middle Level) Room 353, Convention Center

Bill Robertson (wrobert9@ix.netcom.com), NSTA Press Author, Woodland Park, Colo.

Join the author of the *Stop Faking It!* books for activities and explanations of concepts from the second chemistry book in the series. This is not a “make and take” workshop but rather an introduction to how you can gain a deeper understanding of chemistry concepts. We’ll cover hybrid orbitals, acid-base indicators, and batteries. *Note:* This workshop is different from the one titled CHEMISTRY BASICS, but not more advanced (see page 117).

Launch to Learning! Promoting Authentic Learning in Middle School Physical Science —Science Content— (Phys)

(Middle Level) Room 354, Convention Center

Randy Mousley (r_mousley@yahoo.com) and **Aaron Kealey** (akealey@usd259.net), Dean Ray Stucky Middle School, Wichita, Kans.

These engaging hands-on activities address force and motion standards and are adaptable to many levels. Plenty of handouts (on CD) and door prizes!

Footprints: A Guide to Development of the Outdoor Classroom —Science Teaching— (Env)

(Elementary–Middle Level) Room 357, Convention Center

Curtis J. Varnell, Western Arkansas Educational Cooperative, Branch

Use Google Earth, topographic maps, and other available resources to develop an outdoor classroom that will match environmental resources available to your school with your educational needs.

Choose Your Superpower: Exploring Energy Sources —Science Content— (Env)

(Elementary) Room R01, Convention Center

Elizabeth J. Faulkner (efaulkner@cfl.rr.com), Apollo Elementary School, Titusville, Fla.

Cheryl Surrett (surrett.cheryl@brevardschool.com), Audubon Elementary School, Merritt Island, Fla.

Edward P. Short (shorte@brevard.k12.fl.us), Brevard Public Schools, Viera, Fla.

Wendy J. Shelden (shelden.wendy@brevardschools.org), Ralph Williams Elementary School, Viera, Fla.

Presider: Edward P. Short

Engage students in a high-energy unit as they develop a superhero character who travels in a student-designed space vehicle powered by a researched energy source.

Ice Cream, Chemical Reactions, and Molecular Structures —Science Teaching— (Chem)

(Preschool/Elementary) Room R03, Convention Center

Ava F. Pugh (apugh@ulm.edu) and **Jerrilene Washington** (washington@ulm.edu), The University of Louisiana at Monroe

Presider: Ava F. Pugh

Come make ice cream to illustrate states of matter, examine molecular structures and construct atomic forms, and observe chemical reactions. Handouts provided.

A Symbiotic Relationship: Science Inquiry and Language Arts Increase Student Understanding —Science Teaching— (Gen)

(Elementary)

Room R06, Convention Center

Jeffery Scott Townsend (scott.townsend@eku.edu) and **Kathryn R. Decker** (kathryn_decker3@eku.edu), Eastern Kentucky University, Richmond

Two elementary methods instructors (science and language arts) integrate their subjects through the use of the 5E Learning Cycle. Participate in some of their favorite activities.

It's All in the Family: Hosting Family Science Celebrations at Your School and in Your Community —Science Teaching— (Gen)

(General)

Room R08/R09, Convention Center

David R. Heil (dheil@davidheil.com), Foundation for Family Science, Portland, Ore.

Joseph L. Maglaty, Merck Institute for Science Education, West Point, Pa.

Discover the thrill of scientific inquiry and problem solving with students and parents. Take home hands-on activities and learn how to create a family science event.

Out of the Classroom: Adapting Inquiry-based Instructional Materials to Informal Educational Settings —Science Teaching— (Gen)

(General)

Jasperwood, Hilton

Jim Short (jshort@amnh.org) and **David Randle** (drandle@amnh.org), American Museum of Natural History, New York, N.Y.

Explore ways inquiry-based instructional materials can be adapted for use in informal settings such as museums and parks. We will analyze the essential features of inquiry-based instruction and demonstrate ways that this type of instruction can take place in informal settings.

Outstanding Science Trade Books' Connections to Reality by Presidential Awardees —Professional Development— (Gen)

(General)

Napoleon Ballroom, Hilton

Kathleen B. Horstmeyer, Chester, Conn.

Carol L. Baird (bbairdclan@aol.com), Mt. Salus Christian School, Clinton, Miss.

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

Conni Crittenden, Explorer Elementary School, Williamston, Mich.

DeLene Hoffner, The da Vinci Academy, Colorado Springs, Colo.

Alma S. Miller, Bowie State University, Bowie, Md.

Norma Neely, Truman State University, Kirksville, Mo.

Kathy Renfrew (kathy.renfrew@state.vt.us), NSTA Director, District II, and Vermont Dept. of Education, Montpelier

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

Deb Wickerham, Chamberlin Hill Intermediate School, Findlay, Ohio

Presidential Awardees will present the outstanding science trade books selected by the CBC/NSTA committee and share inquiry, hands-on, and standard-based activities.

What Is Technological Literacy? —Science Teaching— (Gen)

(General)

Oak Alley, Hilton

Yvonne M. Spicer (yspicer@mos.org), Museum of Science, Boston, Mass.

These activities will open your students' eyes to the effort involved in designing every structure, surface, and mechanism in the world around them.

The Good, the Bad, and the Hydrophobic: Proteins and the Cell —Science Content— **(Bio)**

(High School–College)

Ile de France III, JW Marriott

Lynn M. Diener (*lmdiener@wisc.edu*), Mount Mary College, Madison, Wis.

Robert P. Payo (*rpayo@ucar.edu*), The National Science Digital Library, Boulder, Colo.

Learn about the biochemistry of the cell using a popular, hands-on paper marbling activity, focusing specifically on cell membrane structure and function.

K–6 Science Trade Books Illustrated and Written by Elementary Teacher Candidates? How and Why Did They Do That? —Science Teaching— **(Gen)**

(Elementary/College)

Maurepas, JW Marriott

Coralee Smith (*smithcs@buffalostate.edu*), Buffalo State College, Buffalo, N.Y.

Meet with elementary teacher candidates to explore the processes they used to create and publish original K–6 science trade books that were used to teach science in urban field placement.

Teacher Researcher Day Session: How to Conduct Action Research in the Science Classroom —Science Teaching— **(Gen)**

(General)

Acadia, New Orleans Marriott

Mike G. Rivas, California State University, Northridge

Come get practical experience in designing an action research project in the classroom.

There’s a Dead Fish in the Middle of the Pond, and It’s Stinking to High Heaven! —Science Content— **(Env)**

(High School)

La Galerie 5, New Orleans Marriott

Denise I. Linzman (*dlinzman@lawtonps.org*), MacArthur High School, Lawton, Okla.

Explore an inquiry project that investigates causes of simulated (or real!) fish kills by analyzing pH, O₂, and simulated DNA fingerprints of *E. coli*.

The Structure of Matter, the Periodic Table, and Chemical Reactions the 5E Way —Science Content— **(Chem)**

(General)

Bayside C, Sheraton

Debbie K. Jackson (*d.jackson1@csuohio.edu*), Cleveland State University, Cleveland, Ohio

Explore 5E learning cycle lessons on the structure of matter, the periodic table, and chemical reactions.

Using NASA’s Great Observatories to Teach the EM Spectrum —Science Education Program— **(Phys)**

(Middle Level–High School)

Maurepas, Sheraton

Sherre L. Boothman, Lehman High School, Kyle, Tex.

Come get an overview of NASA’s four great observatories. Bring your wireless laptops and I’ll install the free DS9 software from the Chandra X-ray Observatory website. Leave with a DVD and booklets, lithographs, and posters from the Chandra X-ray Observatory. Websites include access to ready-to-use units for middle level and high school teachers.

Dinner with Darwin: Maintaining Rigor and Integrity of Science Standards in Interdisciplinary Projects —Science Content— **(Bio)**

(High School)

Napoleon A1&2, Sheraton

Barbara T. Scott, Northridge Academy High School, Northridge, Calif.

Robert L. Scott, Los Angeles Unified School District, District 1, Lake Balboa, Calif.
Tired of interdisciplinary projects tangentially tied to your standards and curriculum? Examine and produce a standards-based project that integrates major concepts of evolution and creative writing.

Magnetism Activities, Space Weather, and Geomagnetism —Science Content— **(Earth)**

(General)

Napoleon C2, Sheraton

Randy M. Russell, Becca Hatheway, Lisa Gardiner, Sandra Henderson, and Roberta M. Johnson (*rmjohnsn@ucar.edu*), University Corporation for Atmospheric Research, Boulder, Colo.

We will share tested hands-on activities about magnetism and related background information about space weather and geomagnetism (Earth's magnetic field). Handouts provided.

Sorting Out the Galaxy Zoo —Professional Development— **(Earth)**

(Middle Level–High School)

Napoleon C3, Sheraton

Robert T. Sparks, National Optical Astronomy Observatory, Tucson, Ariz.

Learn how to classify galaxies like professional astronomers and involve your students in an exciting research project called the Galaxy Zoo run by the Sloan Digital Sky Survey.

Cruisin' to Food Safety —Science Content— **(Bio)**

(Middle Level–High School)

Napoleon D1&2, Sheraton

Laurie A. Hayes (*lhayes@cart.org*), Center for Advanced Research and Technology, Clovis, Calif.

Susan E. Hartley (*susan.hartley@nisd.us*), Navarro High School, Geronimo, Tex.

Explore the microbiology of food safety through the FDA's FREE activity-based curriculum. Leave with ideas for hands-on science activities.

Hassle-free Microbiology —Science Teaching— **(Bio)**

(Middle Level–College)

Rhythms II, Sheraton

John W. Fedors (*jfedors@ssctv.net*), Science Activities, Lincoln, Calif.

A variety of microbial activities are possible with minimal teacher preparation time, NO laboratory aides and minimal or NO capital outlay.

Smithsonian Science: Bottleneck Genes and the Cheetah Conservation Story —Science Content— **(Bio)**

(Elementary–High School)

Rhythms III, Sheraton

Ricki Ferrence and Adrienne Crosier (*crosiera@si.edu*), Smithsonian National Zoological Park, Front Royal, Va.

Presenter: Maureen Kerr, Smithsonian National Air and Space Museum, Washington, D.C.

Use Smithsonian science and the cheetah conservation story together with a stunningly simple genetic bottleneck activity to teach students small-population biology and genetic diversity.

Bring the Science of Cars into the Classroom —Professional Development—

(Phys)

(Middle Level–High School)

Salons 816 & 820, Sheraton

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

Debbie Goodwin, 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!

2:00–3:00 PM EXHIBITOR WORKSHOPS

Active Physics: Newly Revised Third Edition

(Phys)

(Grades 9–12)

Room 212, Convention Center

Sponsor: It's About Time

Arthur Eisenkraft, 2000–2001 NSTA President, and University of Massachusetts, Boston

Perform a series of guided inquiry activities that prepare students to do a voice-over of a sports video and explain the physics of the action appearing on the screen. Watch what happens to the quality of the students' work when they take ownership of real-world scientific challenges that matter to them. Leave with a practical hands-on activity that you can do in your classroom. We will also focus on how differential instruction can make physics accessible to those with higher math and reading levels as well as those who have difficulties in these activities.

Tough Topics in Middle School Science: Physical Science —Science Teaching—

(Phys)

(Grades 6–8)

Room 218, Convention Center

Sponsor: PASCO Scientific

Tess Ewart, A.I. Root Middle School, Medina, Ohio

Explore PASCO's state-of-the-art science solution to tough topics in middle school physical science. Participate in standards-based probeware lab activities from PASCO's new middle school curriculum. See how the SPARK Science Learning System can change your teaching practice and improve student understanding of core topics.

Tough Topics in Chemistry: Determining the Concentration of a Solution—Beer's Law —Science Teaching—

(Chem)

(Grades 6–12)

Room 219, Convention Center

Sponsor: PASCO Scientific

Angela Hill, Blythewood High School, Blythewood, S.C.

Explore PASCO's state-of-the-art science teaching solution to one of the toughest topics in chemistry—determining the concentration of a solution. In this hands-on workshop you will participate in standards-based probeware lab activities from PASCO's new chemistry curriculum. See how the SPARK Science Learning System can change your teaching practice and improve student understanding of core topics.

2:00–3:30 PM EXHIBITOR WORKSHOPS

WARD's Presents: A Potpourri of Forensic Science Ideas

(Gen)

(Grades 7–College)

Room 202, Convention Center

Sponsor: WARD's Natural Science

Kathy Mirakovits, Portage Northern High School, Portage, Mich.

Sample various types of forensic science lab activities that can be incorporated into the science classroom or used as a foundation for a forensic science course. Topics will include bloodstain pattern analysis, glass analysis, fingerprinting, and accident investigation.

How to Design a Safe and Efficient Science Laboratory for the 21st Century
—Science Teaching— **(Chem)**

(Grades 7–12)

Room 204/205, Convention Center

Sponsor: Flinn Scientific, Inc.

Greg Chyson, Flinn Scientific, Inc., Batavia, Ill.

Get answers to all your laboratory design questions! We will share design priority tips and safety information gathered from years of experience helping science teachers plan laboratory construction and remodeling projects. You'll learn what features to include in your laboratories and what common mistakes to avoid.

Chemistry and the Data Collector —Science Content— **(Chem)**

(Grades 5–12)

Room 210, Convention Center

Sponsor: CPO Science/School Specialty Science

Erik Benton and **Patsy Eldridge**, CPO Science/School Specialty Science, Nashua, N.H.

Use CPO's new data collector with temperature and pressure probes to investigate Boyle's law in a hands-on activity. Digitally log temperature change and watch the data collector graph your data in real time to pinpoint the exact freezing point of a delicious treat as it experiences a dramatic phase change.

High School Super! Wow! Neat! Physics and Chemistry by Ron Perkins —Science Content— **(Gen)**

(Grades 9–12)

Room 214, Convention Center

Sponsor: Educational Innovations, Inc.

Ron Perkins, Educational Innovations, Inc., Norwalk, Conn.

Sharing his best physics and chemistry ideas in this fast-moving presentation, Ron will demonstrate Educational Innovations products, enlighten you with their versatility, simplify instruction, and entertain you with his humor. Topics include electrostatics, mysterious density, light, and metallurgy. Over 25 product door prizes! Seating is limited.

AUTOPSY: Forensic Dissection Featuring Carolina's Perfect Solution® Pigs
(Bio)

(Grades 9–12)

Room 215, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Are you ready for a forensic dissection activity that is on the cutting edge? Engage students and revitalize your instruction of mammalian structure and function with a "real" classroom autopsy! Working in pairs, participants will dissect a pig by modeling the autopsy protocols of a forensic pathologist.

"Finding Solutions" for Your Chemistry Labs with Carolina's New Inquiries in Science™ Chemistry Kits **(Chem)**

(Grades 9–12)

Room 216, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Increase student understanding of difficult concepts such as solubility, freezing point, boiling point, molar mass, and pressure by using a guided inquiry approach. Carolina's Inquiries in Science™ chemistry units provide hands-on activities and supplies to make teaching challenging topics effortless. Free teacher materials and door prizes.

Effective Science Materials Support Systems —Science Teaching— (Gen)

(Grades K–8)

Room 217, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

We'll explore the rationale, practical purpose, and day-to-day need for materials distribution systems that support elementary and middle school science education. This session is presented by experienced materials center managers with firsthand knowledge and skill in running successful, effective materials centers.

WOW! Realistic High School Laboratory Simulations You Have to See to Believe! —Science Teaching— (Gen)

(Grades 9–12)

Room 220, Convention Center

Sponsor: Pearson

Brian Woodfield, Brigham Young University, Provo, Utah

Come see a one-of-a-kind demonstration of these amazingly realistic lab simulations and learn how you can use them in your high school science courses. Dr. Woodfield will demo a variety of innovative labs and show how each helps develop students' critical-thinking skills.

Earth Science with Vernier —Science Teaching— (Earth)

(Grades 6–12)

Room 222, Convention Center

Sponsor: Vernier Software & Technology

Robyn Johnson (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Experiments such as exploring magnetism, acid rain, and comparing UV protection of sunglasses from our popular *Earth Science with Vernier* lab book will be performed in this hands-on workshop. You will be able to try these experiments using LabQuest as a stand-alone device and on a computer.

AP* Science with Vernier —Science Teaching— (Gen)

(Grades 9–12)

Room 224, Convention Center

Sponsor: Vernier Software & Technology

Verle Walters (info@vernier.com) and **Dan Holmquist** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Do you want to learn how to conduct traditional AP labs using Vernier probeware? We'll show you how to do lots of experiments in less time and with greater accuracy and precision. See how our award-winning data-collection programs, Logger Pro and LabQuest App, allow students to meaningfully analyze their data. Correlations between Vernier lab books and the AP sciences will be provided.

Pluto, Yet Again! (Earth)

(General)

Room 225, Convention Center

Sponsor: Starry Night Education

Herb Koller (hkoller@starrynight.com), Starry Night Education, Edina, Minn.

Is it or isn't it? Just what is Pluto's status? Come learn how Starry Night High School and Starry Night Middle School can help you and your students draw your own conclusions.

A Natural Approach to Chemistry (Chem)

(Grades 9–12)

Room 226, Convention Center

Sponsor: Lab-Aids, Inc.

Tom Hsu, Author, Andover, Mass.

Join author Tom Hsu for a special preview and hands-on examination of selected laboratory

activities from his new high school book *A Natural Approach to Chemistry*. This workshop takes a fresh look at how chemistry is used today in and out of the laboratory. Experiments have been developed to allow the program to do real, quantitative chemistry using only non-toxic chemicals that are easy to dispose of. Fume hoods are not required and open flames are not used. Selected lab activities will feature an innovative new probeware system that is rugged, simple to use, and makes accurate, quantitative measurements accessible to all students. Selected labs and other program materials will be provided for all participants. This workshop is suitable for all high school chemistry teachers.

Inquiry-based Labs for the Biology Classroom —Science Content— (Bio)

(Grades 9–12)

Room 227, Convention Center

Sponsor: Houghton Mifflin Harcourt-Holt McDougal

Angela White, Carolina Biological Supply Co., Burlington, N.C.

Lory Heron, Holt McDougal, Indianapolis, Ind.

Holt McDougal and Carolina Biological Supply Company introduce their new science kit curriculum for biology. Learn how you can incorporate inquiry-based *Biology* kits into your classroom instruction. This hands-on workshop will allow participants to perform an activity from one of the *Biology* kits and enter in a drawing to win a *Biology* kit for their classroom!

Smithsonian Science: Invasive Species and Society —Science Content— (Bio)

(Grades 4–12)

Room 228, Convention Center

Sponsor: Smithsonian Institution

Hannah Koppelberger and **Shawna Behling**, Smithsonian Conservation and Research Center, Front Royal, Va.

Explore how Smithsonian scientists investigate and mitigate the impact of invasive plant species on local ecosystems. Practice monitoring techniques used by Smithsonian scientists through a hands-on sampling activity that simulates the protocols used in fieldwork. Receive detailed lesson plans to implement your own outdoors studies program.

Teaching Chemistry: “When Am I Ever Going to Need This?” —Science Content— (Chem)

(Grades 10–12)

Room 231, Convention Center

Sponsor: Kendall/Hunt Publishing Co.

Kelly Deters, Kendall/Hunt Publishing Co., Dubuque, Iowa

Learn how a rigorous, thematic chemistry curriculum increases student motivation and attitude, inquiry skills, and content knowledge. I’ll share a chemistry program based on chemistry education research and efficient instructional design principles that was developed by a classroom teacher to interest her students while maintaining high academic standards.

Ocean Resources—From Energy to the Environment K–12 —Science Content— (Gen)

(Grades K–12)

Room 232, Convention Center

Sponsor: U.S. Dept. of the Interior, Minerals Management Service (MMS)

John Romero (john.romero@mms.gov) and **Caryl Fagot** (caryl.fagot@mms.gov), Minerals Management Service, Camarillo, Calif.

Unlock the mysteries of America’s offshore waters. Explore ocean energy resources and their relationship to coastal and marine environments through curricula, educational posters, and hands-on classroom activities. Take home free science-based classroom materials developed from actual MMS-funded research!

The Case of the Kidnapped Tamarin Monkey—Did You Do It? —Science Content— **(Gen)**

(Grades 9–12)

Room 235, Convention Center

Sponsor: CORD Communications

Karen McDowell (mcdowell@cord.org), CORD Communications, Waco, Tex.

Carolyn K. Ulmer and **Greg Ulmer** (gregulmer@centurytel.net), Fort Zumwalt South High School, St. Peters, Mo.

Join us for this interactive forensic science mystery. Use popular forensic science and applied biology/chemistry skills to solve the case of the teacher's kidnapped pet... a tamarin monkey from the Amazon. Participants will be randomly assigned a character—will you be a suspect? Complete hands-on forensic science analysis tasks to catch the kidnapper!

Let WebAssign Do Your Homework Grading!

(Phys)

(Grades 9–College)

Room 236, Convention Center

Sponsor: WebAssign

John S. Risley (risley@webassign.net) and **Anne Squire** (anne_squire@webassign.net), WebAssign, Raleigh, N.C.

WebAssign gives you all the tools and features you need to manage your homework assignments online. You can create assignments, write questions, and review student progress easily and efficiently while WebAssign automatically scores and computes the grades. Best of all, your textbook questions are available and ready to use.

2:00–4:00 PM MEETING

Science Matters – Building a Presence State Coordinators Annual Meeting

(By Invitation Only)

Bacchus, New Orleans Marriott

This is the annual meeting of the state coordinators within the Building a Presence community. For additional information, visit bap.nsta.org.

2:00–4:00 PM PRESENTATIONS

SESSION 1

PDI

EDCi Pathway Session: Writing in Science Using Firsthand Data —Science Teaching— **(Gen)**

(Elementary)

Room 335, Convention Center

Karen Worth (kworth@edc.org), **Jeff Winokur** (jwinokur@edc.org), and **Sally Crissman**, Education Development Center, Inc., Newton, Mass.

Martha Heller-Winokur (martha.heller_winokur@tufts.edu), Tufts University, Medford, Mass.

We will focus on teaching strategies that help students write reports that are based on their own experiences and their own thinking.

SESSION 2

PDI **SC Pathway Session: Science Coaches Networking Forum —Professional Development—** **(Gen)**
(General) Room 348, Convention Center
Alice Gilchrist (*agilchrist@lander.edu*), Upper Savannah Regional Math and Science, Greenville, S.C.
Dorothy Earle, South Carolina Coalition for Mathematics & Science, Greenville
 While the number of coaches is steadily increasing nationwide, the roles, responsibilities, and support of coaches vary tremendously from location to location. Come network with other coaches, those interested in coaching, and experts from the field to share successes, effective strategies, and lessons learned.

SESSION 3

PDI **Exploratorium Pathway Session: Using Inquiry to Teach for Understanding —Professional Development—** **(Phys)**
(General) Room 349, Convention Center
Paul J. Kuerbis (*pkuerbis@coloradocollege.edu*), Colorado College, Colorado Springs
Sandra Smith (*chem_smith@msn.com*), William J. Palmer High School, Colorado Springs, Colo.
 We will share a professional development model that has been successful in helping elementary and middle school teachers learn substantive science content using a guided (explicit) inquiry approach.

2:00–4:00 PM EXHIBITOR WORKSHOP

Bio-Rad Comparative Proteomics Kit II: Western Blot Module —Science Teaching— **(Bio)**
(Grades 9–College) Room 230, Convention Center
 Sponsor: Bio-Rad Laboratories
Stan Hitomi (*professional_development@bio-rad.com*) and **Kirk Brown** (*professional_development@bio-rad.com*), Bio-Rad Laboratories, Hercules, Calif.
 Take protein electrophoresis to the next level and explore evolution using western blotting to specifically identify a protein using immunodetection. In this workshop you will identify the myosin light chain protein from hundreds of other muscle proteins present in pre-run protein profile polyacrylamide gels. For in-depth experience with protein electrophoresis, we recommend participation in the exhibitor workshop “Is There Molecular Evidence for Evolution? Protein Profiler Kit,” which is scheduled at 10:00 AM (see page 77).

2:00–5:00 PM PRESENTATION

SESSION 1

PDI **BSCS Pathway Session: Classroom Inquiry: A Tool for Reflection —Assessment—** **(Gen)**
(General) Room 333, Convention Center
Jody Bintz (*jbintz@bscs.org*) and **Betty Stennett** (*bstennett@bscs.org*), BSCS, Colorado Springs, Colo.
 By analyzing videos of secondary science classrooms, participants will become familiar with a “practice profile” that helps them identify effective, inquiry-based teaching practices. We’ll also look at other resources.

2:00–6:00 PM SHORT COURSE



Putting Science in Context? How Do We Do That (SC-16)

(Grades K–16)

Tickets Required; \$31

Ballroom II, Westin

Travis Sandland (tsandland@smm.org), **Liesl Chatman**, **Erin Strauss** (estrauss@smm.org), **Molly Leifeld** (mleifeld@smm.org), and **Tony Skauge** (tskauge@smm.org), Science Museum of Minnesota, St. Paul

For description, see Volume 1, page 86.

2:30–3:00 PM PRESENTATION

SESSION 1

A Teacher-Scientist Partnership Model for Professional Development —Science Teaching—

(Gen)

(General)

Conde, JW Marriott

Katherine Nielsen (katherine.nielsen@ucsf.edu) and **Jennifer Chu** (jennifer.chu@ucsf.edu), University of California, San Francisco

Learn how to implement a model that builds teachers' content knowledge and pedagogical expertise through rich and engaging professional development led by teacher-scientist teams.

2:30–4:30 PM RECEPTION

GEMS Network Reception

Ile de France II, JW Marriott

For additional information, visit www.lhsgems.org.

3:00–3:30 PM PRESENTATION



SESSION 1

Teacher Researcher Day Session: Teacher Inquiry Groups: Learning About Learning —Professional Development—

(Gen)

(General)

Acadia, New Orleans Marriott

Claire G. Bove (cgbove@flash.net), Mills College, Oakland, Calif.

What happens when educators come together to form a teacher inquiry group? Bring your experiences, ideas, and questions to discuss and share with others.

3:00–4:00 PM EXHIBITOR WORKSHOP**Immersive Space Science Curriculum: “The Seasons” in a Fulldome Classroom (Earth)***(Grades K–12)**Booth No. 1133, Exhibit Hall, Convention Center*

Sponsor: Spitz, Inc.

David H. Bradstreet (*dbradstr@eastern.edu*), Eastern University, St. Davids, Pa.**Scott Huggins** (*shuggins@spitzinc.com*), Spitz, Inc., Chadds Ford, Pa.

Dr. David H. Bradstreet presents an immersive “Seasons” lesson using the dome environment to communicate the reasons for our seasons in a fun, engaging lesson. The *Spitz Fulldome Curriculum* uses original 3-D visualization as a completely new way to teach challenging space science concepts.

3:00–4:00 PM NSTA’s ESP SYMPOSIUM III**Exemplary Science Programs: Best Practices in Professional Development****(Gen)***(General)**Room 252, Convention Center*

Coordinator: Robert E. Yager, 1982–1983 NSTA President, Editor of the NSTA ESP Program, and The University of Iowa, Iowa City

The Exemplary Science Program (ESP) was initiated by NSTA to produce monographs consisting of descriptions of programs and evidence of their effectiveness in producing superior student learning. This session will include brief descriptions of programs that exemplify how the four NSES goals have been met. Drawn from chapters in several monographs in the series, these sessions will center on how NSES *More Emphasis* suggestions have guided instruction. Participants in this roundtable will include authors of specific chapters:

Exemplary Science: Best Practice in Science Teaching TodayTimothy Cooney (*timothy.cooney@uni.edu*), University of Northern Iowa, Cedar Falls**Bringing School Science to College: Modeling Inquiry in the Elementary Science Methods Course**Sondra Akins (*akins@wpunj.edu*), William Paterson University of New Jersey, Wayne**Knowing and Teaching Science: Just Do It**Matthew Perkins (*mperkin2@utk.edu*), Oak Ridge High School, Oak Ridge, Tenn.Ioana Badara (*ibadara@utk.edu*) and Claudia T. Melear (*ctmelear@utk.edu*), University of Tennessee, Knoxville**Hey! What’re Ya Thinking? Developing Teachers as Reflective Practitioners**Barbara S. Spector (*spector@coedu.usf.edu*), University of South Florida, Tampa

3:00–4:30 PM SOCIAL

NMLSTA Ice Cream Social

Rosedown, Hilton

An invitation to all middle level science teachers—meet and network with colleagues. Free ice cream, friends, door prizes, and fun. This social is sponsored by It's About Time. For further information, visit www.nmlsta.org.

3:00–4:30 PM EXHIBITOR WORKSHOP

A Closer Look at Biology, Chemistry, and Earth Science Virtual Labs —Science Content— (Gen)

(Grades 7–10)

Room 213, Convention Center

Sponsor: Frey Scientific/School Specialty Science

Ken Rainis, Frey Scientific/School Specialty Science, Nashua, N.H.

Lisa Bowman, Mansfield, Ohio

Learn how virtual labs constitute a “laboratory experience” while exploring unique, object-manipulative, network-capable virtual labs for general and AP subjects. Perform actual lab investigations onscreen and view, record, analyze, and report results. Ideas to create custom web content and individualized assessment will be provided. Take home various software samplers.

3:00–5:00 PM MEETINGS

SESD Business Meeting

Newberry, Hilton

International Advisory Board Meeting

Estherwood, Sheraton

3:30–4:00 PM PRESENTATION

SESSION 1

Swimming in Digital Waters: Schooling Digital Natives Through Disruptive Technology —Science Teaching— (Gen)

(General)

Ascot, Hilton

Elisebeth C. Boyer (eboyer@psu.edu), Pennsylvania State University, University Park

Web-based tools enhance student reasoning, discourse, and interaction in the millennial science classroom and beyond.

3:30–4:30 PM **ROBERT H. CARLETON LECTURE****It's a New Day for Science Education Leadership: Stories Published and Unpublished Inform Our Future** (Gen)

(General)

Room 243, Convention Center



Speaker

Bonnie J. Brunkhorst

1990–1991 NSTA President, and
Professor, Science Education and Geology
California State University
San Bernardino, Calif.

bbrunkho@csusb.edu

Bonnie J. Brunkhorst was a science teacher and K–8 science supervisor in Lexington, Massachusetts, for 15 years. She is an NSTA past president and past chair of The Council of Scientific Society Presidents (CSSP). She served as a member of the National Academy of Sciences/NRC national committee that developed the national standards and on the Academy's Standards Executive Editorial Committee. Brunkhorst is the recipient of numerous awards, including the NSTA 2008 Robert H. Carleton Award.

The future of science education and NSTA is at a crossroads. We need to keep and strengthen our leadership in science education—national, state, and local—and not be directed by others' special interests. We need to claim our expertise. Learn what has worked and not worked for NSTA elected leadership and staff with stories published and unpublished. This will be an interactive lecture to support the future of science learning, with effective science leadership by NSTA in cooperation with others.

3:30–4:30 PM **PRESENTATIONS****SESSION 1****Sharing the Spirit of Stewardship: Writing Green for Kids —Science Teaching—** (Env)

(General)

Room 238, Convention Center

Patricia K. Dean (*pkdean@salisbury.edu*), **Nic Bishop**, **Sneed Collard**, and **Ernest Bond** (*elbond@salisbury.edu*), Salisbury University, Salisbury, Md.

Melissa Stewart (*hbeeprod@msn.com*), Peachtree Publishing, Acton, Mass.

Presider: Patricia K. Dean

Interact with authors who participated in the 2007 National Green Earth Book Award Celebration as they share their projects on environmental writing for children.

SESSION 2**Teaching Environmental Science with Case Studies: Agriculture and Renewable Energy —Science Content—** (Env)

(High School)

Room 239, Convention Center

Emily Sherman (*esherman@scarborough.k12.me.us*), Scarborough High School, Scarborough, Maine

I will share two classroom-tested case studies, including curriculum and student work, that increase student motivation and responsibility for learning.



SESSION 3

Guiding Preservice Teachers' Development of Meaningful Science Investigations for Preschool —Professional Development— (Gen)

(General)

Room 240/241, Convention Center

Mary Kay Kelly (kellymaz@notes.udayton.edu), **Shauna M. Adams** (shauna.adams@udayton.edu), and **Joy L. Comingore** (comingjl@notes.udayton.edu), University of Dayton, Ohio

We will demonstrate a model for instructional design that promotes content-rich science experiences for preschoolers.

SESSION 4

Don't Forget the Science: High-Interest, High-Quality Children's Books Provide a Path to Integrating Science and Literacy into Standards-based Curriculum —Professional Development— (Gen)

(Elementary–Middle Level)

Room 343, Convention Center

Jeanette Day (dayj@easternct.edu) and **Susannah Richards** (richardss@easternct.edu), Eastern Connecticut State University, Willimantic

Cheryl Sundberg (sundbergc@att.net), Millbrook, Ala.

Explore research-based learning activities that combine scientifically accurate children's literature with science activities. Complete bibliographies will be supplied.

SESSION 5

Connecting Your Students to Authentic Scientific Research —Science Content— (Gen)

(Middle Level)

Room 345, Convention Center

Rosamond Kinzler and **David Randle** (drandle@amnh.org), American Museum of Natural History, New York, N.Y.

Terry L. Pavlis, The University of Texas at El Paso

Deepen student understanding of the scientific method using freely available, downloadable short-format science videos.

SESSION 6

PDI

NGS Pathway Session: What Every Science Teacher Should Know About Geography but May Be Afraid to Ask —Science Teaching— (Gen)

(General)

Room 347, Convention Center

Daniel Edelson, National Geographic Society, Washington, D.C.

Most Americans have no idea what geography is. Those that do think it's just social studies. Learn why geography is really an essential science.

SESSION 7

Debunking Desert Misconceptions —Assessment— (Gen)

(Elementary)

Room R04, Convention Center

Maria Y. Cieslak and **Francine Gollmer** (fmgollme@interact.ccsd.net), Gene Ward Elementary School, Las Vegas, Nev.

Clear up students' misconceptions about the desert by scaffolding student narrative and informative writing skills. Handouts will include rubrics and focused mini-lessons for creating podcasts.

SESSION 8

Science and Children Share-a-Thon —Professional Development— (Gen)
(Preschool/Elementary) Room R08/R09, Convention Center

Pita Martinez-McDonald, NSTA Director, Preschool/Elementary, and Cuba (N.Mex.) Independent Schools

Mary Smigel, Infinity Charter School, Lancaster, Pa.

Judith A. McKee, Central Elementary School, Wilmette, Ill.

Gregory T. Childs (gregory.childs@spps.org), St. Paul Public Schools Center for Professional Development, St. Paul, Minn.

Kathy Renfrew (karenfrew@earthlink.net), NSTA Director, District II, and Vermont Dept. of Education, Montpelier

Jim Harris (s4etjim@earthlink.net), Collins Elementary School, Scottsboro, Ala.

Join members of the NSTA Preschool/Elementary Committee and the *Science and Children* Advisory Board as they present lessons inspired by articles from *Science and Children*.

SESSION 9

Nature of Science and the Black Box Phenomenon —Science Teaching— (Gen)
(General) Belle Chasse, Hilton

Katherine A. Larson (katherine.larson@dmps.k12.ia.us), East High School, Des Moines, Iowa

Scott Moore (scottmoore96@gmail.com), Valley High School, West Des Moines, Iowa

Explore ideas about the nature of science and students' misconceptions about science through the mysterious black box experiment.

SESSION 10

Science Buddies: Free Online Tools for High Quality Science Fair Projects —Science Teaching— (Gen)

(Elementary–High School)

Elmwood, Hilton

Deborah A. Bogard, John C. Dempsey Middle School, Delaware, Ohio

Science fairs improve STEM skills! Learn how to use the free Science Buddies site to introduce, or improve the quality of, student science fair projects.

SESSION 11

Help! Is the Safety Doctor in the House? —Science Teaching— (Gen)
(General) Magnolia, Hilton

Kenneth R. Roy (royk@glastonburyus.org), Glastonbury (Conn.) Public Schools

Are you sick over laboratory safety? Get a lab check-up with a nationally recognized safety doc and be on the road to recovery!

SESSION 12 (two presentations)

(College)

Conde, JW Marriott

Exploring the Interaction Between Technology and Humanity (Gen)

Chuck Winrich and **Shari L. Laprise** (slaprise@babson.edu), Babson College, Babson Park, Mass.

Babson College's Science and Society concentration for nonscience majors allows students to explore their relationship to technology and the natural world.

Setting Up Blended Online Courses a Nibble at a Time —*Science Teaching*—
(Gen)

Gordon L. Wells (*gordon.wells@ovu.edu*), Ohio Valley University, Vienna, W.Va.

Learn how to start incorporating online course management systems in your science classes a little bit at a time.

SESSION 13

The National Academies: Teacher Advisory Council —*Professional Development*—
(Gen)

(General)

Orleans, JW Marriott

Dwight D. Sieggreen (*sieggdrw@northville.k12.mi.us*), Hillside Middle School, Northville, Mich.

Steve Long (*s jlong@rogers.k12.ar.us*), Rogers High School, Rogers, Ark.

We will discuss the National Academies Teacher Advisory Council, the work of the council, and the new initiative to start state Teacher Advisory Councils across the country.

SESSION 14

Reaching for the Sky: STEM Outreach and Indigenous Knowledge —*Science Teaching*—
(Gen)

(General)

Rosalie, JW Marriott

Brant G. Miller (*mill3770@umn.edu*), **Joel D. Donna** (*donna010@umn.edu*), **Gillian H. Roehrig**, **Tamara Moore**, and **Stephan Carlson**, University of Minnesota, Minneapolis

Presider: Eric McDonald, St. Olaf College, Northfield, Minn.

The Reach For The Sky (RFTS) program seeks to integrate an indigenous knowledge infrastructure with innovative STEM curriculum for contextually authentic learning situations.

SESSION 15

Teacher Researcher Day Session: Teacher as Researcher: Formal Presentations of Teachers' Research —*Science Teaching*—
(Gen)

(Middle Level–High School)

Acadia (Group 1), New Orleans Marriott

Mike G. Rivas, California State University, Northridge

Recent Masters in Science Education graduates will present their research problem and findings.

SESSION 16

Teacher Researcher Day Session: Science in the First Year: The Use of Narratives to Develop a Professional Stance of Teaching Science —*Science Teaching*—
(Gen)

(Elementary/Supervision)

Acadia (Group 4), New Orleans Marriott

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

We will present data from an ongoing study that uses narratives written by novice teachers as a means to construct professional stances of teaching science.

SESSION 17 (two presentations)*(Middle Level–High School)**Bonaparte, New Orleans Marriott***WebQuest: Inquiry—Exploring Earth System Science —*Science Teaching—*****(Env)****James L. Larsen**, The GLOBE Program, Boulder, Colo.

Introduce inquiry and student research into Earth system science using a Webquest where students write a research proposal.

Virtual Scat: Using Blogs and Conferencing Tools to Engage Students in Scientific Inquiry —*Science Teaching—***(Env)**

Allison Roach (aroach@earthwatch.org), **Alan W. Fortescue** (afortescue@earthwatch.org), and **Anna Janovicz**, Earthwatch Institute, Maynard, Mass.

Learn how to use blogs and conferencing tools to engage students in scientific inquiry as virtual field researchers.

SESSION 18**How to Get the Most Out of Mentoring: For New Teachers —*Professional Development—*****(Gen)***(Middle Level–High School/Supervision)**Jackson, New Orleans Marriott*

Catherine McCulloch and **Marian Pasquale** (mpasquale@edc.org), Education Development Center, Inc., Newton, Mass.

Discuss video footage of a mentoring interaction and tools in order to walk away with a set of strategies and tips for mentees to get the most out of their work with a mentor. Mentors will also find this session useful.

SESSION 19**Professional Development: Using Trends, Practices, and Research to Strengthen Science Teaching and Learning —*Professional Development—*****(Gen)***(Supervision/Administration)**Regent, New Orleans Marriott*

LaMoine L. Motz (lamoine.motz@oakland.k12.mi.us), 1988–1989 NSTA President, and Oakland County Schools, Waterford, Mich.

Jack Rhoton, East Tennessee State University, Johnson City

Emma L. Walton (elwalton@aol.com), 1999–2000 NSTA President, and Science Consultant, Anchorage, Alaska

Gerry M. Madrazo (gerrymadrazo@hotmail.com), 1993–1994 NSTA President, and Hawaii Dept. of Education, Honolulu

Presider: LaMoine L. Motz

Join our team of science education leaders as we share research, models, case studies, and collaborative initiatives toward improving science teaching and learning through sustained professional development and leadership.

SESSION 20**Learning Theory Research to Practice in the Science Classroom —*Science Teaching—*****(Gen)***(Middle Level–High School)**Edgewood A/B, Sheraton*

Erin E. Peters (epeters1@gmu.edu), George Mason University, Fairfax, Va.

We will analyze a variety of classroom interactions—including problem-based learning, cooperative learning in a laboratory setting, and assessment—to reveal the underpinnings of learning theory.



SESSION 21

How to Survive Teaching Chemistry: Tips for New Teachers —*Science Teaching—* **(Chem)**

(High School)

Gallier A/B, Sheraton

Patricia C. Duncan, Wallenpaupack Area High School, Hawley, Pa.

Whether you are a new chemistry teacher or a seasoned teacher new to chemistry, there are many tips that can help you survive your first few years.

SESSION 22

NASA's High-Energy Vision—Chandra and the X-ray Universe —*Science Content—* **(Earth)**

(General)

Napoleon C1, Sheraton

Donna L. Young (donna.young@tufts.edu), The Wright Center for Science Education, Tufts University, Medford, Mass.

Learn the latest results from NASA's Chandra X-ray Observatory concerning black holes, supernovae, colliding galaxies, stellar evolution, and the structure of the universe.

SESSION 23

Thar She Blows! Introducing Marine Mammals to Your Class —*Science Teaching—* **(Bio)**

(Informal Education)

Napoleon D3, Sheraton

Carl J. Carranza (carl.carranza@lacity.org), Cabrillo Marine Aquarium, San Pedro, Calif.

Come learn about all types of marine mammals, as well as how our changing climate can affect them. Free whale curriculum to attendees!

SESSION 24 (two presentations)

(Middle Level–High School)

Rhythms I, Sheraton

Monkeys, Pandas, Viruses, and Bacteria, Oh My! Teaching Evolution in Dover, Pennsylvania —*Science Teaching—* **(Bio)**

Leslie L. Prall (lprall@dover.k12.pa.us), Dover Area High School, Dover, Pa.

Join me as I share a variety of lessons to incorporate into your evolution unit. Lesson topics include Mad-Cow Disease, MRSA infection, flu vaccines, and more.

Frog's Blood vs. Human Blood: Comparing RBC as a Means to Understand Cellular Respiration and SA/V —*Science Content—* **(Bio)**

Michael J. Lazaroff (michael_lazaroff@westport.k12.ct.us), Staples High School, Westport, Conn.

Students compare RBC under the microscope and discover connections to SA/V, cellular respiration, endothermic and ectothermic metabolisms, and the evolution of body systems.

SESSION 25

In-Class Peer Review (ICPR) —*Science Content—*

(Chem)

(General)

Salons 817 & 821, Sheraton

Cynthia M. Lamberty, Nicholls State University, Thibodaux, La.

Learn how to use essays and electronic response pads for higher-order thinking assessments.

SESSION 26

Do You Have a Problem? Call 1-800-Get-STEM —Professional Development—**(Phys)***(Middle Level–High School)**Salons 825 & 829, Sheraton***Jeff H. Mosby** (*jmosby@fortsmithschools.org*), Ramsey Junior High School, Fort Smith, Ark.**Mason B. Pyper**, Southside High School, Fort Smith, Ark.**Linda Stocker** (*lstocker@fortsmithschools.org*), Northside High School, Fort Smith, Ark.Presider: **Margaret Hall** (*mhall@fortsmithschools.org*), Northside High School, Fort Smith, Ark.

In these activities, students use science, technology, engineering, and mathematics to investigate real-world problems. Handouts.

3:30–4:30 PM WORKSHOPS**Lights! Action! Science!****(Gen)***(Elementary–Middle Level)**Room 242, Convention Center***Barbara De Santis** (*bsdesantis@yahoo.com*), Sayreville Public School, Parlin, N.J.

Students miss a lab? Looking for authentic assessment? Want to focus on student digital learning opportunities? Come make a movie with a digital camera.

Good Bugs, Bad Bugs: Water Quality and Population Sampling —Science Teaching—**(Env)***(Middle Level–High School/Informal Education)**Room 253, Convention Center***Gina L. Disteldorf** (*gina.disteldorf@springbranchisd.com*), Spring Woods High School, Houston, Tex.**Greg McDonald** (*paul.mcdonald@springbranchisd.com*), Westchester Academy for International Studies, Houston, Tex.

Discover simulation activities for determining stream quality based on numbers/types of macroinvertebrates collected and identified, and random sampling techniques for identifying population sizes of motile/sessile species.

Scintillating Science: Plagues and Pestilence —Science Content—**(Bio)***(Middle Level)**Room 254, Convention Center***Nancy Moreno** (*nmoreno@bcm.tmc.edu*), **Barbara Tharp** (*btharp@bcm.edu*), and **Deanne Erdmann** (*derdmann@bcm.edu*), Baylor College of Medicine, Houston, Tex.

Infectious diseases—from the most ancient afflictions to new pandemics—have affected human history in countless ways. We will share a teacher's guide and web connections.

Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-Up Session: Climate Resources for Teachers and Students**(Env)***(Middle Level–High School)**Room 256, Convention Center***Karen Flammer**, Sally Ride Science, San Diego, Calif.**Frank Niepold** (*frank.niepold@noaa.gov*), NOAA, Silver Spring, Md.

Federal agencies and educational organizations are partnering to provide web seminars and online materials that will stimulate student interest and understanding of climate science with inquiry-based tutorials, real-time data, and case studies. Free curricular materials will be provided.

Toy Design: Engineering in Disguise —Science Teaching— (Gen)
(Elementary–Middle Level) Room 344, Convention Center

Jim Brown, Sally Ride Science, San Diego, Calif.

Team up, brainstorm, design, and create—learn the engineering design process as you create a toy. Come get the tools for teaching students who are probably experts with toys, yet don't see the science and engineering in them.



Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It
—Professional Development— (Phys)

(Elementary–Middle Level) Room 353, Convention Center

Bill Robertson (wrobert9@ix.netcom.com), NSTA Press Author, Woodland Park, Colo.

Tired of trying to teach a subject you don't fully understand yourself? With the author as your guide, experience activities and explanations taken from the NSTA Press book on force and motion. Rather than a set of resource activities for the classroom, this book is intended to help you, the teacher, gain a deeper understanding of science concepts. Yes, you too can understand why Galileo had to invent the force of friction.

Spice Up Your Curriculum with a Little “Fresh and Salt” —Science Content— (Gen)

(Elementary–Middle Level/Informal Education) Room 354, Convention Center

Terri Hallesy (thallesy@uiuc.edu) and **Robin Goettel** (goettel@illinois.edu), University of Illinois at Urbana-Champaign, Urbana

Preview a new collection linking ocean and Great Lakes science lessons. Leave with sample activities incorporating timely topics that meet ocean literacy principles and national standards.

Read a Good Science Book Lately? Science and Literature—What a Great Mix!
—Science Teaching— (Gen)

(Elementary–Middle Level) Room 355, Convention Center

Nancy K. Byrd (nancykbb@excite.com), Blair Middle School, Norfolk, Va.

Dawn Lock and **Jane Walker**, Northside Middle School, Norfolk, Va.

Grab your students' interest using our innovative approach, which integrates the teaching of science and literature while reinforcing necessary skills for the challenges of tomorrow and beyond.

Project SPECTRA! —Science Content— (Earth)

(Middle Level) Room 356, Convention Center

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

Use light to bring solar system exploration and engineering and real mission data into the classroom. Explore spectroscopy and apply it to space missions.

Where Will All the Polar Bears Go? —Science Content— (Env)

(Middle Level) Room 357, Convention Center

Cheryl Surrett (surrett.cheryl@brevardschool.com), Audubon Elementary School, Merritt Island, Fla.

Michelle J. Ferro (ferro.michelle@brevardschools.org), West Melbourne School for Science, West Melbourne, Fla.

Nancy G. Rehwoldt (rehwoldt.nancy@brevardschools.org), Surfside Elementary School, Satellite Beach, Fla.

Presider: Edward P. Short (shorte@brevard.k12.fl.us), Brevard Public Schools, Viera, Fla.
Activities and inquiry will help participants discover possible causes of global warming and generate solutions to this problem affecting Earth's natural environments and organisms.

Bazaar Science Explorations —Science Content—

(Env)

(Elementary)

Room R01, Convention Center

Pamela A. Koch (pkoch@tc.edu), Teachers College, Columbia University, New York, N.Y.

Darlene Beal (darlene_beale@pvusd.net), Linscott Charter School, Watsonville, Calif.

Turn a field trip to your local food market into an investigation of natural resource consumption.

Inquiry-based Integrated Approach in Teaching Science —Professional Development—

(Gen)

(Elementary–Middle Level)

Room R02, Convention Center

Sumita Bhattacharyya (sumita.bhattacharyya@nicholls.edu), Nicholls State University, Thibodaux, La.

Learn how to create interdisciplinary lessons geared toward elementary school children using the 5E cycle. These activities use readily available materials.

Simple Machines by Design —Science Content—

(Phys)

(Elementary)

Room R03, Convention Center

Bruce L. Larson (blarson@sau16.org), Stratham Memorial School, Stratham, N.H.

Engage students in a series of simple machine design activities using readily available toys.

What's Math Got to Do with It? —Professional Development—

(Gen)

(Elementary)

Room R05, Convention Center

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

These inquiry activities for elementary classrooms explore the important connections between mathematics and science.

Technology Turf Tidbits: Elementary Plant Investigations Through Technology —Science Teaching—

(Gen)

(Preschool/Elementary)

Room R06, Convention Center

Pamela S. Krohne-Googe (pgooge@paulding.k12.ga.us) and **Tammy Shiflett** (tshiflett@gmail.com), C.A. Roberts Elementary School, Dallas, Ga.

This inquiry-based investigation uses video microscope dissection, digital camera data collection, video flower creation, classroom hydroponics, and creative conservation.

Our Very Own Star—The Sun! —Science Content—

(Earth)

(Elementary)

Room R07, Convention Center

Lynne H. Hehr (lhehr@uark.edu) and **John G. Hehr** (jghehr@uark.edu), University of Arkansas, Fayetteville

In this hands-on, content-based session you'll learn about the Sun, light, auroras, and much more. Take home a CD packed with lessons and resources.

Welcome to the Science Café! Casual + Spontaneous = Effective —Science Teaching— **(Gen)**

(General)

Jasperwood, Hilton

Ben Wiehe (ben_wiehe@wgbh.org), WGBH Educational Foundation, Boston, Mass.

Science cafés allow face-to-face conversation with a scientist. Join me for a lively discussion of unusual strategies for bringing science dialogue directly to your community.

The New York Times, CNN, and the Nature of Science —Professional Development— **(Gen)**

(General)

Oak Alley, Hilton

Monica Macklin (macklin@nsuok.edu) and **April D. Adams** (adams001@nsuok.edu), Northeastern State University, Tahlequah, Okla.

Analyze reports of scientific research, both in popular media and scientific journals, to promote teachers' understanding of the nature of science.

ASTE Session: Literacy Maps, Search Strategies, and Teacher-reviewed Content —Science Teaching— **(Gen)**

(General)

Ile de France III, JW Marriott

Robert P. Payo (rpayo@ucar.edu), The National Science Digital Library, Boulder, Colo.

Susan Van Gundy (vangundy@ucar.edu), NSTA Director, District XIV, and The National Science Digital Library, Boulder, Colo.

Science literacy maps, efficient search strategies, and annotated collections of teacher-reviewed content can help teachers find online resources better aligned to intended learning objectives.

Using Hardy-Weinberg Equilibrium to Show Evolutionary Change —Science Content— **(Bio)**

(High School–College)

Maurepas, JW Marriott

William H. Leonard (leonard@clemson.edu), Clemson University, Mountain Rest, S.C.

John E. Penick, 2003–2004 NSTA President, and North Carolina State University, Raleigh

Engage in a mathematical population genetics simulation using a single trait that demonstrates evolutionary change through founder effect and natural selection.

Art and Writing Connections in Science —Science Content— **(Env)**

(Middle Level–High School/Informal Education)

La Galerie 5, New Orleans Marriott

Sandra K. Enger (engers@uah.edu), The University of Alabama in Huntsville

We'll share ideas for incorporating art, digital images, and writing in journals or science notebooks.

Particle Pictures: Connecting the Dots to the Big Ideas in Science —Science Teaching— **(Chem)**

(Elementary–High School)

Bayside C, Sheraton

Jill W. Saia (jsaia@eberschools.org), East Baton Rouge Parish Public Schools, Baton Rouge, La.

Melinda Oliver (moliver@bcbe.org), Fairhope High School, Fairhope, Ala.

Use the big ideas in science to help students make connections among the isolated facts in science and improve overall understanding and application.

The Power of the Wind —Science Content—**(Phys)***(Middle Level–High School)**Maurepas, Sheraton*

Jana Sebestik (*sebestik@uiuc.edu*), University of Illinois at Urbana-Champaign, Champaign

James Schreiner (*jschreiner@bbchs.org*), Bradley Bourbonnais High School, Bradley, Ill.

Learn about wind and how its energy can be transferred to machines to do work or produce electricity. Use an engineering design process to create a wind-powered device.

Antarctica—From the Air, on the Land, and in the Seas —Science Teaching—**(Gen)***(Middle Level–High School)**Napoleon B1, Sheraton*

Lollie Garay, Redd School, Houston, Tex.

Kirk Beckendorf (*kirk.beckendorf@noaa.gov*), NOAA, Washington, D.C.

Sarah Anderson (*sarah.anderson@boerne-isd.net*), Boerne High School, Boerne, Tex.

Discover cool activities that bring the message of polar science to the Gulf Coast from Texas PolarTREC teachers on expeditions to Antarctica in 2007.

Using Robotics to Model and Monitor Energy Processes —Science Teaching—**(Gen)***(High School)**Napoleon B2, Sheraton*

Julie M. Webb (*julianne.webb@esc20.net*), Transformation 2013 STEM Center, San Antonio, Tex.

Learn how to use robotics to model and monitor energy processes and evaluate the efficiency of multiple energy resources, while introducing students to engineering, programming, and design concepts in the science classroom.

Are We Alone in the Universe? Using Current Research in Astrobiology to Enrich Astronomy and Biology Curricula —Professional Development—**(Earth)***(General)**Napoleon C2, Sheraton*

Thomas H. Nassif, Carnegie Institution of Washington, D.C.

Randall Dunkin (*rdunkin@cinci.rr.com*), North Adams High School, Seaman, Ohio

Learn how extremophiles and the discovery of Earth-like planets can enhance students' knowledge and interest in the life and earth/space sciences.

Smithsonian Science: Earth from Space: How Satellite Imagery Helps Us Understand Our Planet —Science Content—**(Earth)***(Middle Level–High School)**Napoleon C3, Sheraton*

Maureen Kerr (*kerrm@si.edu*) and **Andrew Johnston**, Smithsonian National Air and Space Museum, Washington, D.C.

Find out how Smithsonian scientists use satellite images to study changes on Earth and learn how your students can do the same.

Shear Madness! —Science Teaching—**(Bio)***(Elementary–High School)**Rhythms II, Sheraton*

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

Temperature regulation is critical to all animals. In this completely hands-on, data-collection session, we will explore this phenomenon.

Drop the Lecture and Let the Students Pick Up the Learning in AP Biology
—*Professional Development*— **(Bio)**

(High School)

Rhythms III, Sheraton

Kristen R. Dotti (*kristen_dotti@yahoo.com*), Christ School, Arden, N.C.

Model dough gastrulation, water noodle operons, membrane transport enactments—could this be AP science? Come see hands-on science that doesn't compromise AP content.

Beyond Introductory Circuits: Electronics —*Science Content*— **(Phys)**

(High School)

Salons 816 & 820, Sheraton

Aaron R. Osowiecki (*aosowiecki@gmail.com*), Boston Latin School, Boston, Mass.

Physics courses typically review basic series and parallel. However, most circuits these days are more advanced, with diodes, transistors, etc. Learn how to teach students about modern electronics with computer probes.

DUPONT Session: Wow! That's Engineering? **(Gen)**

(Middle Level–High School)

Southdown, Sheraton

Ronna Robertson and **Barbara Knight**, DuPont Fayetteville Works, Fayetteville, N.C.

See an overview of the Society of Women Engineers' Wow! That's Engineering? event. It focuses on helping middle and high school girls experience engineering careers.

3:30–4:30 PM EXHIBITOR WORKSHOPS

Introduction to Planet FOSS for Middle School —*Science Content*— **(Gen)**

(Grades 5–8)

Room 209, Convention Center

Sponsor: Delta Education/School Specialty Science-FOSS

Habiba Noor and **Jessica Penchos**, Lawrence Hall of Science, University of California, Berkeley

Join us for a journey to Planet FOSS, a photo-sharing site on FOSSweb where students post images illustrating concepts taught in FOSS middle school courses. We'll demonstrate how to use the site and offer suggestions for incorporating it into FOSS courses to enhance science learning.

Active Chemistry **(Chem)**

(Grades 9–12)

Room 212, Convention Center

Sponsor: It's About Time

Arthur Eisenkraft, 2000–2001 NSTA President, and University of Massachusetts, Boston

Active Chemistry is an NSF inquiry-based curriculum that makes chemistry accessible to ALL high school students. Learn how Active Chemistry can enhance your chemistry instruction and how your students can become artists using chemistry, cooks using chemistry, and game developers using chemistry. We will also discuss how Active Chemistry support materials can assist you with differential instruction in the classroom.

Tough Topics in Environmental Science: Field Data Collection —*Science Teaching*— **(Env)**

(Grades 6–12)

Room 219, Convention Center

Sponsor: PASCO Scientific

Ryan Reardon, Alabama School of Fine Arts, Birmingham

Explore PASCO's state-of-the-art science solution to one of the toughest aspects of environmental science investigations—field data collection. In this hands-on workshop you will participate in standards-based probeware lab activities from PASCO's new advanced environmental science curriculum. See how the SPARK Science Learning System can enhance your teaching practice and improve student understanding of core topics.

3:30–4:45 PM EXHIBITOR WORKSHOP

Technology and National Board Certification for Accomplished Teachers —*Professional Development*— (Gen)

(Grades 6–12)

Room 218, Convention Center

Sponsor: PASCO Scientific

Presenter to be announced

Learn how to implement specific technology into your teaching practice to improve all four entries of your EA or AYA Science portfolio. If you are considering National Board Certification, or if you are currently a candidate in the process, come get specific strategies you can use to improve your instruction and your written commentaries for each entry of your portfolio.

3:30–5:00 PM MEETING

SCST Annual Business Meeting

Frontenac, JW Marriott

3:30–5:00 PM RECEPTION

The Dr. Wendell G. Mohling Chapters and Associated Groups Reception

(By Invitation Only)

La Galerie 6, New Orleans Marriott

This fun-filled event permits chapters and associated groups leaders to recognize achievements and milestones. This event is graciously sponsored by ETA/Cuisenaire.

3:30–5:00 PM PRESENTATION

SESSION 1

PDI

McREL Pathway Session: Designing Effective Science Lessons: Helping Students Think Scientifically —*Science Content*— (Gen)

(General)

Room 346, Convention Center

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

Learn how to design your instruction to promote students' scientific thinking and understanding. Take home sample lesson materials.

4:00–4:30 PM PRESENTATION

SESSION 1

Teacher Researcher Day Session: Information Recall vs. Real Learning—*Science Teaching—* (Chem)

(Middle Level–High School)

Acadia (Group 2), New Orleans Marriott

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

All students seem to care about is the TEST. It's true. There has been a shift in education that only seems to value test scores. Learn what I have “discovered” and how I am trying to change memorizing facts into real learning.

4:00–5:00 PM SOCIAL

ExploraVision Ice Cream Social and Information Session

Room 352, Convention Center

Discover elements of winning ExploraVision projects and learn how to succeed in this leading K–12 science competition while enjoying an afternoon treat, a gift, and a chance to win a Toshiba product door prize. Gain insight into the rules, developing innovative project ideas, and getting students involved and recognized.

4:00–5:00 PM EXHIBITOR WORKSHOPS

Green Science in the Middle and High School Classroom (Chem)

(Grades 7–College)

Room 211, Convention Center

Sponsor: Fisher Scientific Education

John Pyers and **Brooke Carson**, Beyond Benign, Wilmington, Mass.

Learn how to introduce your middle- and high school–level general science, chemistry, or environmental science students to the 12 principles of green chemistry. Bring the concepts of sustainability to life for your students by introducing them to chemistry on an industrial level and putting them in the position of innovator and decision maker. Experience three activities and an overview of this free downloadable curriculum.

Bio-Rad Cloning and Sequencing Explorer Series—*Science Teaching—* (Bio)

(Grades 9–College)

Room 229, Convention Center

Sponsor: Bio-Rad Laboratories

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

In this unique modular lab series, students are guided through an innovative research workflow identical to those performed in genomics labs worldwide. Learn about this multiple-week lab course, where students combine traditional and cutting-edge molecular biology techniques and bioinformatics to clone, sequence, and analyze a housekeeping gene from a plant of your choice, ensuring each class produces unique and novel data.

4:00–5:30 PM EXHIBITOR WORKSHOPS

I Didn't, Who Did? —Science Content—**(Gen)***(Grades K–3)**Room 202, Convention Center*

Sponsor: Science Kit & Boreal Laboratories

Patty Muscatello (*pmuscatello@vwreducation.com*), Science Kit & Boreal Laboratories, Tonawanda, N.Y.

Every day classroom materials become forensic clues in the hands of our youngest students. Learn how to take the mystery out of working science and inquiry into your already full school day while using classroom readers and common materials and equipment.

How to Supplement Your Lessons with NOVA, Zoom, and Other Teachers' Domain Digital Media Resources for Your Classroom**(Gen)***(General)**Room 204/205, Convention Center*

Sponsor: PBS TeacherLine/Teachers' Domain

Daniella Quinones (*daniella_quinones@wgbh.org*), WGBH Teachers' Domain, Boston, Mass.

We will focus on Teachers' Domain standards-based digital media classroom resources and how to use them to supplement existing lesson plans. Resources draw from the best shows in public television, including *NOVA*, *Zoom*, and *Design Squad*. Learn how to navigate the site and search for content, download media, save to folders, and create groups that allow you to share videos, lesson plans, and other resources with students or colleagues. I'll also provide a brief introduction to Teachers' Domain online professional development courses. Enter a raffle to win a *NOVA* DVD!

Car and Ramp —Science Content—**(Phys)***(Grades 7–12)**Room 210, Convention Center*

Sponsor: CPO Science/School Specialty Science

Erik Benton, Patsy Eldridge, and Scott Eddleman, CPO Science/School Specialty Science, Peabody, Mass.

Combine a unique timer/photogate system with a car and ramp experiment for a series of inquiry-based investigations. The concepts of speed, acceleration, and Newton's laws are uncovered during the quest to find a theory to predict the speed of the car at any point on the ramp.

The Private Eye®: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art —Science Content—**(Gen)***(General)**Room 214, Convention Center*

Sponsor: Educational Innovations, Inc.

Kerry Ruef, The Private Eye Project, Lyle, Wash.

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

Butterflies in Your Classroom**(Bio)***(Grades 6–12)**Room 215, Convention Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Bring excitement into your classroom with The Painted Lady butterfly (*Vanessa cardui*), a small insect that is easily raised and cultured year-round. It also meets National Science Education Standards for characteristics, life cycles, and reproduction. Session includes guidance on care of the butterfly in every life stage. Free living sample and activities.

Genetics with Wisconsin Fast Plants®/Flies/Corn

(Bio)

(Grades 9–12)

Room 216, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Wisconsin Fast Plants™, corn, and *Drosophila* help teach genetics. Learn basic techniques of culturing Wisconsin Fast Plants™ and *Drosophila*, including how to evaluate F2 offspring and collect and analyze data. Need a quick genetics lab? Corn is an excellent choice, and the contrasting phenotypes are easily recognized even by beginners.

The Middle School Science Lab...Out of a Box!

(Bio)

(Grades 6–8)

Room 217, Convention Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Want a science lab but don't have the materials? Already teaching an inquiry program but not sure it's effective? This introduction to the STC PROGRAM™ explores the possibilities of a kit-based science program in the middle school classroom. Sample activities help you discover how students can best learn science.

BIOZONE Showcases Their Biology Workbooks and Presentation Media

(Bio)

(Grades 10–12)

Room 225, Convention Center

Sponsor: BIOZONE International Ltd.

Richard Allan (richard@biozone.co.nz), BIOZONE International Ltd, Hamilton, New Zealand

BIOZONE's critically acclaimed biology workbooks and presentation media will be showcased. Our resources provide cutting-edge, current, and state-of-the-art content. Ideal supplemental resources, their highly visual content, and write-on format make a winning formula to engage students, facilitating "differential learning." FREE samples of the latest workbooks will be provided to each workshop attendee.

**Just Released! New IIHS Car Crash Video—Perfect for Integrating the Sciences—
—Science Teaching—**

(Gen)

(Grades 9–12)

Room 226, Convention Center

Sponsor: Insurance Institute for Highway Safety

Griff Jones (gjones@coe.ufl.edu), University of Florida, Gainesville

Pini Kalnite, Insurance Institute for Highway Safety, Arlington, Va.

Award-winning teacher Griff Jones goes behind the scenes of the new IIHS video *Understanding Car Crashes: When Physics Meets Biology*. Learn how crash test footage, crash dummies, and egg-carrying paper cars can teach students about the vital connections between biology, physics, medicine, and engineering. Handouts and DVD prizes.

Engaging Inquiry Activities for Middle School—Science Content—

(Gen)

(Grades 6–8)

Room 227, Convention Center

Sponsor: Houghton Mifflin Harcourt-Holt McDougal

Beth Swayze and **Lory Heron**, Holt McDougal, Indianapolis, Ind.

Learn numerous, inexpensive, hands-on activities that will help you integrate scientific inquiry into your classroom. Join us and see a wide variety of activities from the *Holt Science & Technology* lab program that will engage students of all levels. Arrive early—this workshop is a favorite.

From the Field: Igniting a Passion for Science —Science Content— (Gen)

(Grades 3–9)

Room 228, Convention Center

Sponsor: National Academy of Sciences

Diane France, Colorado State University, Fort Collins

April Luehmann (aluehmann@warner.rochester.edu), University of Rochester, N.Y.

The National Academy of Sciences invites you to meet world-renowned forensic anthropologist Diane France, the Bone Detective. Learn about Diane's fascinating experiences solving mysteries as she leads a forensic science–based activity you can duplicate in your classroom. Also meet professor April Luehmann and find out how educators are using the stories of Diane and other contemporary women scientists to ignite a passion for science in their classrooms. Discover ways to build community and encourage inquiry using the *iWASwondering.org* website. Be among the first to find out about ASK IT!—a free, NAS-moderated online resource dedicated to engaging students in science inquiry.

Teach Overseas—International Schools Services (ISS) (Gen)

(Grades K–12)

Room 231, Convention Center

Sponsor: International Schools Services

Laura Light (dirloedstaffing@iss.edu), International Schools Services, Princeton, N.J.

Since 1955, ISS has placed almost 20,000 teachers and administrators in overseas schools. Using state-of-the-art recruitment technologies and a personalized screening approach tailored to each school's needs, ISS is able to present the most qualified teaching and administrative candidates for service in international schools around the world. In addition to continuous year-round placement, ISS hosts three International Recruitment Centers (IRCs) in the United States each year. Recruiting administrators conduct interviews during the IRCs with experienced, highly qualified teaching and administrative candidates. Come find out about opportunities available at American and international schools all around the world.

Experience Digital Physics Curricula (Phys)

(Grades 9–College)

Room 232, Convention Center

Sponsor: Kinetic Books

Mark Bretl (markb@kbooks.com), Kinetic Books, Seattle, Wash.

Learn how a fully integrated digital physics curriculum can aid your instruction. Application of multiple learning styles and inquiry-based learning in a self-paced package provides students with experimentation and involvement. Join us for an overview of the design and use of our products along with many subject highlights.

Educational Gaming in Science: Shifting the Paradigm —Science Teaching— (Gen)

(Grades 3–5)

Room 235, Convention Center

Sponsor: Tabula Digita

Nt Etuk (nt@tabuladigita.com), Tabula Digita, New York, N.Y.

At least 93% of U.S. K–12 students play video games. Math has capitalized, with Tabula Digita math games more than DOUBLING score increases on district exams. Now it's time for science. Education is about to become very cool—let the games begin!

The JASON Project: Connecting Students with Great Explorers and Great Events (Env)

(Grades 6–8)

Room 236, Convention Center

Sponsor: The JASON Project

Peter Haydock (info@jason.org), The JASON Project, Ashburn, Va.

Bill Jewell, Digital Media and Technology, Ashburn, Va.

The JASON Project embeds the cutting-edge research of its partners—National Geographic Society, NOAA, and NASA—into core science curricula and professional development. Leading scientists work side by side with JASON students in the classroom and in an on-line global community, challenging them to apply their knowledge to the same real-world scenarios that scientists face every day. We have found that students approach science and scientific investigation with personal dedication when they connect with charismatic explorers and compelling, real-world events. This workshop will explore two standards-based curricula—Operation: Monster Storms and Operation: Resilient Planet.

4:00–6:00 PM NSTA’s ESP SYMPOSIUM IV



Exemplary Science Programs on Inquiry (Gen)

(General)

Room 252, Convention Center

Coordinator: Robert E. Yager, 1982–1983 NSTA President, Editor of the NSTA ESP Program, and The University of Iowa, Iowa City

The Exemplary Science Program (ESP) was initiated by NSTA to produce monographs consisting of descriptions of programs and evidence of their effectiveness in producing superior student learning. This session will include brief descriptions of programs that exemplify how the four NSES goals have been met. Drawn from chapters in several monographs in the series, these sessions will center on how NSES *More Emphasis* suggestions have guided instruction. Participants in this roundtable will include authors of specific chapters:

Future Scientists—Student Outreach Initiative: “Sowing the Seeds of Future Success”

Craig Wilson (cwilson@science.tamu.edu), Texas A&M University, College Station

Inquiry: A Challenge for Changing the Teaching of Science in Connecticut

Holly Harrick (hharrick@ctsciencecenter.org), Connecticut Science Center, Hartford

Learning Science with Inquiry in the Clark County School District

Ellen K. Ebert (ekebert@interact.ccsd.net), Clark County School District, Las Vegas, Nev.

Kent J. Crippen (kcrippen@unlv.nevada.edu), University of Nevada, Las Vegas

Cindy Kern (clkern@interact.ccsd.net), Green Valley High School, Henderson, Nev.

Rebecca Reichenbach (rsreichenbach@interact.ccsd.net), Western High School, Las Vegas, Nev.

Cheryl Waldman (cawaldman@interact.ccsd.net), Palo Verde High School, Las Vegas, Nev.

Inquiry Is Elementary: A Description of Differing Approaches to Inquiry Within Two Elementary Schools Focusing on Environmental Science and Mathematics and on Mathematics and Children’s Engineering

Patricia C. Paulson (patricia-paulson@bethel.edu), Bethel University, St. Paul, Minn.

Douglas Paulson (douglas.paulson@anoka.k12.mn.us) and Rose Wippler (rose.wippler@anoka.k12.mn.us), Monroe Elementary School, Brooklyn Park, Minn.

Science Projects: A Recipe for Successful Inquiry in Eighth-Grade Earth and Space Science

Pascale Creek Pinner (*ppinner@k12.hi.us*), Hilo Intermediate School, Hilo, Hawaii

Q200: An Introduction to Scientific Inquiry

Paula A. Magee (*pamagee@iupui.edu*) and Natalie S. Barman (*nbarman@iupui.edu*), Indiana University/Purdue University, Indianapolis

Science as Inquiry at Sir Winston Churchill Collegiate and Vocational Institute

Wayne Melville (*wmelvill@lakeheadu.ca*) and Anthony Bartley (*anthony.bartley@lakeheadu.ca*), Lakehead University, Thunder Bay, Ont., Canada

Doug Jones (*douglas_jones@lakeheadschoos.ca*), Sir Winston Churchill Collegiate and Vocational Institute, Thunder Bay, Ont., Canada

Science Is Not a Spectator Sport: Three Principles from 15 Years of Project Dragonfly

Chris Myers (*myersca@muohio.edu*) and Lynne Born Myers (*myerslb@muohio.edu*), Miami University, Oxford, Ohio

Richard Hudson (*rhudson@tpt.org*), TPT/Twin Cities Public Television, St. Paul, Minn.

Student Inquiry and Research: Developing Students' Authentic Inquiry Skills

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

4:00–6:00 PM WORKSHOP**Informal Science Day Session: Informal Science Education Share-a-Thon —Science Teaching—****(Gen)***(General)**Carondelet, New Orleans Marriott*

Phyllis Katz (*pkatz15@gmail.com*), **J. Randy McGinnis**, **Emily Hestness**, and **Kelly Riedinger**, University of Maryland, College Park

Hollie Barattolo (*barattolo@ansp.org*), Academy of Natural Sciences, Philadelphia, Pa.

Susan Buckey, WGBH Educational Foundation, Boston, Mass.

Teresa Eastburn (*eastburn@ucar.edu*), National Center for Atmospheric Research, Boulder, Colo.

Shea Eaves (*shea@imms.org*), Institute for Marine Mammal Studies, Gulfport, Miss.

Jennifer Edginton (*jennifer.edginton@msichicago.org*), Museum of Science and Industry, Chicago, Ill.

Joan Freese (*jfreese@tpt.org*) and **Richard Hudson**, *DragonflyTV*/Twin Cities Public Television, St. Paul, Minn.

Ron Gird (*ron.gird@noaa.gov*), NOAA's National Weather Service, Silver Spring, Md.

Eric Hamilton (*ehamilton@amnh.org*), American Museum of Natural History, New York, N.Y.

Jennifer Hammond, **Michiko Martin** (*michiko.martin@noaa.gov*), **Paulo Maurin** (*paulo.maurin@noaa.gov*), and **Peggy L. Steffen** (*peg.steffen@noaa.gov*), NOAA, Silver Spring, Md.

Molly Harrison (*molly.harrison@noaa.gov*), NOAA Fisheries Service, Silver Spring, Md.

Janice Harvey (*jharvey@gemini.edu*), Gemini Observatory, Hilo, Hawaii

David Heil, Foundation for Family Science, Portland, Ore.

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

Robin Keith and Maggie Reinbold (mreinbold@sandiegozoo.org), Zoological Society of San Diego, Escondido, Calif.

Katie Levedahl (klevedahl@sciencecenter.org), Sciencecenter, Ithaca, N.Y.

Tracey T. Meilander (broaderimpacts@yahoo.com), Broader Impacts LLC, Broadview Heights, Ohio

Eric P. Muller (emuller@exploratorium.edu) and **Julie Yu**, The Exploratorium, San Francisco, Calif.

Jessica Neely (jneely@gmail.com), KQED/QUEST, San Francisco, Calif.

Michelle Nichols (mnichols@adlerplanetarium.org), The Adler Planetarium, Chicago, Ill.

Rae Ostman (rostman@sciencecenter.org), NISE Network/Sciencecenter, Ithaca, N.Y.

Susan Pion (spion@boonshoftmuseum.org), Boonshoft Museum of Discovery, Dayton, Ohio

Dennis Schatz (schatz@pacsci.org), Pacific Science Center, Seattle, Wash.

Tom Schmeltzer (schmeltz@att.net), DeKalb County School System, Marietta, Ga.

Christine Shupla (shupla@lpi.usra.edu), Lunar and Planetary Institute, Houston, Tex.

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

Douglas Sprunger, National Academies, Washington, D.C.

Joyce Tugel (jtugel@mmsa.org), Maine Mathematics and Science Alliance, Augusta

Mary Whaley (mwhaley@mbayaq.org), Monterey Bay Aquarium, Monterey, Calif.

Catherine Williamson (cwilliamson@sciport.org), Sci-Port LOUISIANA's Science Center, Shreveport

Greta Zenner (gmszenner@wisc.edu), University of Wisconsin, Madison

Come to this lively informal science share-a-thon, where informal science educators will showcase their programs, and resources, and share ideas with the science education community.

4:30–5:00 PM PRESENTATION



SESSION 1

Teacher Researcher Day Session: Fostering Teacher Researcher Collaborations
—*Professional Development*— **(Gen)**

(General)

Acadia, New Orleans Marriott

Emily H. van Zee, Oregon State University, Corvallis

Claire G. Bove (cgbove@flash.net), Mills College, Oakland, Calif.

Deborah R. Harris (drobert1@umd.edu), Queen Creek (Ariz.) Unified School District

What can teacher researchers do to foster their own and others' inquiries into science learning and teaching? Please join us in reflecting on ways to collaborate.

5:00–5:30 PM PRESENTATION

SESSION 1

Education in the Humane Treatment of Animals: Building Conscientious Decision-making Skills —*Science Content*— **(Gen)**

(Preschool/Elementary)

Room R07, Convention Center

M. Susan McWilliams (smcwilliams@unomaha.edu), University of Nebraska at Omaha

I will describe collaborative work in facilitating teacher candidates and graduate-level teachers in learning and then teaching about the humane treatment of animals.

5:00–6:00 PM RECEPTION

Retired Members Reception*(By Invitation Only)**St. Charles (41st Floor), New Orleans Marriott*

5:00–6:00 PM PRESENTATIONS

SESSION 1

**Saving Our Coast, Our Communities, and Our Homes —Science Teaching—****(Env)***(General)**Room 238, Convention Center***JoAnn G. Burke** (joann@saveourlake.org), Lake Pontchartrain Basin Foundation, Metairie, La.

Saving Our Coast is a matter of life and death post-Katrina. Come see how to get the message to our children in memorable ways.

SESSION 2

**Scaffolding Inquiry and Language for English Learners —Science Teaching—****(Gen)***(Middle Level)**Room 239, Convention Center***Ann K. Fathman** (afathman@ndnu.edu), Notre Dame de Namur University, Belmont, Calif.**Ursula Sexton**, WestEd, Redwood City, Calif.

Learn strategies for scaffolding inquiry and language to help English learners successfully participate in science activities.

SESSION 3

**A Practitioner Resource for Learning Science in Informal Settings —Science Education System—****(Gen)***(Informal Education)**Room 240/241, Convention Center***Thomas E. Keller** (tkeller@nas.edu), National Academy of Sciences, Washington, D.C.

This work contextualizes a research study on informal science education. The findings are applicable to formal education as well.

SESSION 4

**Storycaching GLOBE: iPods, GPS, Data, and the GLOBE Project —Professional Development—****(Env)***(Elementary–High School)**Room 242, Convention Center***Martin G. Horejsi** (martin.horejsi@umontana.edu) and **Georgia Cobbs** (georgiacobbs@umontana.edu), The University of Montana, Missoula

Create a rich new dimension in communication by combining GPS and iPods to generate storycaches.

SESSION 5

Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-Up Session: Earth's Carbon Cycle and Ocean Acidification**(Env)***(Middle Level–High School)**Room 256, Convention Center***Paulo Maurin**, NOAA, Silver Spring, Md.The oceans have absorbed about 50% of the carbon dioxide (CO₂) released from the burn-

ing of fossil fuels, resulting in chemical reactions that lower ocean pH. A growing number of studies have demonstrated adverse impacts on marine organisms.

SESSION 6 (two presentations)

(Middle Level)

Room 344, Convention Center

How Do I Integrate Technology into My Middle School Science Classroom?

—*Science Teaching*—

(Gen)

Kim Bartell, Perryville Middle School, Perryville, Md.

A middle school science teacher turned computer literacy teacher shares technology tips she wishes she knew when she taught science.

ABCs of Podcasting —Science Content—

(Gen)

Stef Paramoure (stef.paramoure@comalisd.org), Canyon Middle School, New Braunfels, Tex.

Ignite your learning environment and address differentiated instruction goals with podcasting. I'll share basics, curriculum connections, and details on lesson templates.

SESSION 7

An Interactive and Inquiry-based Model for ELL —Assessment—

(Phys)

(Middle Level)

Room 354, Convention Center

Alan D. Dorado (adorado@torremar.edu.ec), Unidad Educativa Torremar, Guayaquil, Ecuador

Peer instruction, interactive teaching, and inquiry-based learning were used to overcome the difficulties inherent in a science class for ELL.

SESSION 8

Writing for Communicating and Understanding Ecology Field Experiences in Middle School —Science Teaching—

(Env)

(Middle Level/Informal Education)

Room 357, Convention Center

Debby E. Peck (debby.peck@unb.ca) and **Karen S. Sullenger**, University of New Brunswick, Fredericton, Canada

Robert D. Poirier, St. Stephen Middle School, St. Stephen, N.B., Canada

We present rationale and challenges related to middle school students in an after-school science program, who do writing exercises during their field experiences with scientists.

SESSION 9

Laboratory Safety: Let It Be Written, Let It Be Done! —Science Teaching—

(Gen)

(General)

Magnolia, Hilton

Kenneth R. Roy (royk@glastonburyus.org), Glastonbury (Conn.) Public Schools

Ventilation, occupancy load, liability, GFCI, goggles—are all safety issues covered by OSHA, NFPA, and other regulations? Learn about these regulations that protect you and your students.

SESSION 10 (two presentations)

(High School–College/Informal Education)

Conde, JW Marriott

Frontiers of Science in Your Classroom —Science Teaching—

(Gen)

Julia E. Sable (js1719@columbia.edu), Teachers College, Columbia University, New York, N.Y.

Learn how to understand and incorporate current science publications in classroom dis-



cussions. We'll focus on using primary and secondary literature in high school and college introductory science courses.

EPICS (Engineering Projects in Community Service) (Gen)

Jeffery D. Sayers (*jdsayers@bsu.edu*), Indiana Academy, Ball State University, Muncie

EPICS provides an opportunity for students at the Indiana Academy to learn STEM skills while designing and implementing community service projects.

SESSION 11

Meeting Science Standards Through Backwards Design —Assessment— (Gen)

(General)

Maurepas, JW Marriott

James T. McDonald (*jim.mcdonald@cmich.edu*), Central Michigan University, Mount Pleasant

Using your major science assignments, go through a step-by-step process to assess students using state and national science standards.

SESSION 12

Using the 5E Lesson Plan Model to Support Teaching and Learning —Science Education Program— (Gen)

(General)

Orleans, JW Marriott

Julie K. Jackson, Texas State University, San Marcos

Experience an easy-to-follow framework that supports the implementation of inquiry science instruction. We'll share 5E lesson templates, lesson materials, and video cases.

SESSION 13

The El Paso Collaborative and Ysleta ISD: How the Math/Science Partnership Transformed Teachers into Instructional Leaders —Professional Development— (Gen)

(General)

Rosalie, JW Marriott

Diane D. Walker (*dwalker@nmsu.edu*), New Mexico State University, Las Cruces

Gloria Hajat, Ysleta Independent School District/New Mexico State University, El Paso, Tex.

Instructional leaders are asked to join this discussion by the science professional staff developers who worked for the Ysleta Independent School District during the Math/Science Partnership grant.

SESSION 14

How to Succeed at Grant Writing for Funding Opportunities from NOAA (Env)

(General)

Bacchus, New Orleans Marriott

Sarah E. Schoedinger (*sarah.schoedinger@noaa.gov*), **Bronwen Rice** (*bronwen.rice@noaa.gov*), and **Stacey Rudolph** (*stacey.rudolph@noaa.gov*), NOAA, Washington, D.C.

Priti Brahma (*priti.brahma@noaa.gov*), NOAA, Silver Spring, Md.

Learn what NOAA looks for in a grant or scholarship application. We'll cover the "do's and don'ts" for applying to various grant and scholarship programs offered by NOAA.

SESSION 15 (two presentations)

(General)

Bonaparte, New Orleans Marriott

Presider: Rochelle Lofstrand (lofstrand@fultonschools.org), North Springs High School, Atlanta, Ga.

Connecting Classrooms to the Community —Science Teaching— (Env)

Jon Yoder (yoder_jon@salkeiz.k12.or.us), Salem-Keizer School District, Salem, Ore.

Learn how to contextualize student knowledge and skills. I'll present specific examples and curriculum materials of this community-based approach. Free materials!

Socialization of Wolf Pups at the International Wolf Center —Science Content— (Env)

Kimberly S. Loomis (kloomis@kennesaw.edu), Kennesaw State University, Kennesaw, Ga.

Pups at the International Wolf Center were hand-raised until they were integrated with the adult pack. Learn about their socialization, watch a video, and explore resources.

SESSION 16

Professional Development and Improved Instruction Through Lesson Study —Professional Development— (Gen)

(Middle Level—High School/Supervision)

Jackson, New Orleans Marriott

David L. Radford (dradford@uab.edu), The University of Alabama at Birmingham

Teachers and university faculty relate their challenges and successes in improving teaching and learning in urban schools through collaborative lesson study.

SESSION 17

Up and Running: Using Inquiry and Lesson Study to Teach Cellular Respiration —Science Teaching— (Bio)

(Middle Level—College/Supervision)

Regent, New Orleans Marriott

Mark C. Wolfgang (mwolfgang@franklinregional.k12.pa.us), Franklin Regional High School, Murrysville, Pa.

Use lesson study to create an engaging inquiry lesson on cellular respiration. Participants will receive an activity usable in their classrooms.

SESSION 18

Harry Potter and Disney Come to Science Class —Science Teaching— (Gen)

(General)

Edgewood A/B, Sheraton

Laura M. Arndt (lauraarndt@earthlink.net), Nature Connections, Franktown, Colo.

View movie clips from Disney productions, *Harry Potter*, and more that creatively teach students the inquiry process, scientific content, and scientific accuracy (or inaccuracy) in media.

SESSION 19

Getting Kids Invested with Stories: Copper and the Statue of Liberty —Science Teaching— (Chem)

(High School)

Gallier A/B, Sheraton

Charles J. Hill (chill@edc.org), Education Development Center, Inc., Newton, Mass.

"Science, like the rest of culture, is based on the manufacture of narrative," said scientist E.O. Wilson. We will explore the use of stories to engage high school students.

SESSION 20**The Virtual Science Laboratory: Exploring Neurobiology Research in the Secondary Classroom —Professional Development— (Bio)***(Middle Level–High School)**Napoleon A3, Sheraton***Elisa Palmer, Darci Harland, and Karen K. Lind**, Illinois State University, Normal

We will demonstrate grades 7–12 supplemental online curriculum modules on cocaine addiction, stroke, and Parkinson’s disease.

SESSION 21**From Land to Sea to Classroom —Professional Development— (Earth)***(Middle Level–High School)**Napoleon B3, Sheraton***Louise McMinn** (lmcminn@ci.stamford.ct.us), Scofield Magnet Middle School, Stamford, Conn.**Megan F. O’Neill** (moneill@bcbe.org), Fairhope High School, Fairhope, Ala.

See how participation in an ARMADA Project research experience in the Arctic can invigorate your classroom and inspire beginning teachers in your school.

SESSION 22**The Lionfish Invasion! What It Is and How to Teach About Invasive Species in Your Classroom —Professional Development— (Env)***(General)**Napoleon D3, Sheraton***Bruce Moravchik** (bruce.moravchik@noaa.gov), NOAA National Ocean Service, Silver Spring, Md.**Thomas H. Nassif**, Carnegie Academy for Science Education, Washington, D.C.

Learn how NOAA researchers study invasive aquatic species. Receive a free video and standards-based multimedia resources for teaching about invasive species in your classroom.

SESSION 23**Celebrating African American Scientists and Inventors Through Live Science Demonstrations —Professional Development— (Gen)***(Middle Level–High School/Informal Education)**Rhythms I, Sheraton***Tyraine D. Ragsdale** (grandhank@aol.com), Grand Hank Consulting, Philadelphia, Pa.

This live demonstration series is designed to introduce, highlight, and reinforce students’ understanding of the important contributions made to science and technology by African Americans.

SESSION 24**Student-centered Modeling as a Means of Assessment for Learning in Chemistry —Science Teaching— (Chem)***(High School)**Salons 817 & 821, Sheraton***Kevin D. Cunningham** (kdcunningham@wisc.edu), University of Wisconsin-Madison**Julie A. Cunningham** (jcunning@lakemills.k12.wi.us), Lake Mills High School, Lake Mills, Wis.

Learn to assist students in developing, evaluating, revising, and applying conceptual particulate models as a means of building and assessing meaningful understanding in the sciences.

SESSION 25

Integrating Music into the Science Curriculum —Professional Development—
(Phys)

(High School)

Salons 825 & 829, Sheraton

Marsha K. Turin, TechBoston Academy, Dorchester, Mass.

Using music for context, I have developed a curriculum that ties together the teaching of the physics of sound with a cultural and historical appreciation of music using digital media, analysis of musical style, and the use of music as a means of communication.

5:00–6:00 PM WORKSHOPS

Make Your Own Insulin! —Science Content—

(Bio)

(Middle Level–High School)

Room 254, Convention Center

Carla L. Hoyer (choyer@houstonisd.org) and **Deborah Campbell** (dcampbel@houstonisd.org), Waltrip High School, Houston, Tex.

Lori D. Dunklin (ldunklin@houstonisd.org), Contemporary Learning Center, Houston, Tex.

Use bioinformatic websites and model construction to increase engagement in protein synthesis and mutation lessons. Free CD containing lesson plans and student documents for all participants.

Use the Force: Using Science Notebooks to Teach Simple Machines, Force, and Friction —Science Teaching—

(Gen)

(Elementary–Middle Level)

Room 343, Convention Center

Julie A. Alexander (juaalexan@columbia.k12.mo.us), Columbia (Mo.) Public Schools

Learn science notebooking strategies to help teach the concepts of simple machines, force, friction, and experimental design. We'll share examples of student work.

Fun Activities with Gel Polymers to Enhance Any Science Class —Science Teaching—

(Gen)

(Elementary–Middle Level)

Room 345, Convention Center

Cora S. Salumbides, Jefferson High School, Daly City, Calif.

Discover fun activities with gel polymeric materials that will enhance your science class. Participants will work with interesting, gooey, sticky, slimy materials and learn basic science concepts while having fun.

Successfully Integrating Science, Math, and Art Instruction —Science Teaching—

(Gen)

(Elementary–Middle Level)

Room 355, Convention Center

John Eichinger (jeichin@calstatela.edu), California State University, Los Angeles

These activities for grades 3–8 are designed to integrate science, mathematics, and the visual arts into a discovery-based, academically rigorous, student-centered program.

From the Classroom to Outerspace, Are You Suited for Spacewalking? —Science Teaching—

(Earth)

(Preschool–Middle Level)

Room 356, Convention Center

Jennifer Becerra (jennifer.becerra-1@nasa.gov), NASA Johnson Space Center, Houston, Tex.

Learn about the crew and education mission of STS 119. Teach your students about the equipment necessary for survival in the space environment.

A Plant Parts Picnic! —Science Teaching—

(Bio)

(Preschool/Elementary)

Room R01, Convention Center

Kirstin Reed (kreed@dmail.net) and **Sonya Nelson** (snelson@dmail.net), Knowlton Elementary School, Farmington, Utah

Rita Stevenson (rstevenson@dmail.net), Davis School District, Farmington, Utah

Presider: Lorna McCleary, Whitesides Elementary School, Layton, Utah

Come learn in a make-and-take setting how to teach students about plants through a variety of activities culminating in a picnic. Integrating science to other areas of the curriculum will also be explored.

Ready-to-Go Space Science Activities for the K–5 Classroom —Science Content—

(Earth)

(Elementary)

Room R03, Convention Center

Sally L. Feldman (feldmom@aol.com), Washington Elementary School, Richmond, Calif.

Make the most of young students' curiosity about space! Explore fun hands-on activities for learning about our amazing solar system.

Puppets, Writing, and Elementary Science: A Terrific Trio —Science Teaching—

(Gen)

(Preschool/Elementary)

Room R05, Convention Center

Carol Ann Brennan (carolb@hawaii.edu), University of Hawaii, Honolulu

Meet Brockleyella, a life-sized puppet with a less than desirable reputation. Explore an effective technique that combines science activities and the teaching of literacy skills.

Observation: The First Required Skill in Inquiry Science —Science Content—

(Gen)

(Elementary)

Room R06, Convention Center

Sara B. Sweetman (sara_sweetman@mail.uri.edu) and **Adam Scott** (adam_scott@mail.uri.edu), University of Rhode Island, Narragansett

Participate in hands-on/minds-on exploration of sand from around the world while learning to teach your students the essential skill of observation.

Sun-Earth Middle School Share-a-Thon —Science Content—

(Earth)

(Middle Level)

Room R08/R09, Convention Center

N. Eric Heiselt (nericheiselt@bagley.msstate.edu), Mississippi State University, Mississippi State, Miss.

Mary Allen, Springfield College, Springfield, Mass.

Presider: Mary Allen

Master teachers from the NASA heliophysics division share successful lessons and activities to reinforce earth science concepts in the middle level.

Teaching Science to Students with Visual Impairments —Science Teaching—

(Gen)

(Elementary–High School)

Oak Alley, Hilton

Kate Fraser (kate.fraser@perkins.org) and **Michele Engelbrecht** (michele.engelbrecht@perkins.org), Perkins School for the Blind, Watertown, Mass.

Explore adapted materials, creative techniques, and technology that make participation in science both possible and meaningful for students with visual impairments.

Mapping Environmental Quality with a Geographic Information System (GIS): Exploring the Environmental Sustainability Index (ESI) for Countries Across the World —Science Teaching— **(Env)**

(Middle Level–High School)

La Galerie 5, New Orleans Marriott

Carla M. McAuliffe (*carla_mcauliffe@terc.edu*), TERC, Tempe, Ariz.

Tamara Ledley (*tamara_ledley@terc.edu*), TERC, Cambridge, Mass.

Analyze the factors that affect a country's environmental sustainability. If possible, bring your charged laptop to work along with the facilitator. Take home a free CD of activities.

Use Polymer Science to Create 3-D Objects in Your Classroom —Science Teaching— **(Chem)**

(General)

Bayside C, Sheraton

Joe Muskin (*jmuskin@uiuc.edu*) and **Matthew Ragusa** (*mtragusa@gmail.com*), University of Illinois, Urbana

Using a photoactive polymer, you can create a device that will “print” 3-D plastic objects in your classroom with PowerPoint and a data projector.

Inquiry Hands-On Labs for Physics and Physical Science —Professional Development— **(Phys)**

(Middle Level–High School)

Maurepas, Sheraton

John Cooper (*debcooper12@comcast.net*) and **Peter C. Fischer**, Hiram High School, Hiram, Ga.

These labs were changed from traditional lab format to inquiry activities developed for the Math Science Partnership Grant.

Urease: A New Enzyme for School Science Experiments —Science Teaching— **(Bio)**

(Middle Level–High School)

Napoleon A1&2, Sheraton

Minsu Ha (*mortar2839@nate.com*), **Jihyun Park** (*haha0103@gmail.com*), and **Heeyoung Cha** (*hycha@knue.ac.kr*), Korea National University of Education, Cheongwongun, Choongbuk

Discover a new and interesting enzymatic experiment that uses soybeans and red cabbages.

Sounds Like Science: The Key Role of Questioning in Elementary Classrooms —Professional Development— **(Gen)**

(General)

Napoleon B1, Sheraton

Beverly L. Kutsunai (*bekutsun@ksbe.edu*), Kamehameha Elementary School, Honolulu, Hawaii

Come explore research about questioning strategies and work through selected lessons featuring sound.

Can You See Me Now? Incorporating Lenses and Telescopes in Your Physical Science or Earth Science Classes —Science Teaching— (Earth)*(High School)**Napoleon C3, Sheraton***Marla R. Hines** (*mhines@hoover.k12.al.us*) and **Pamela E. Harman** (*pharman@hoover.k12.al.us*), Spain Park High School, Hoover, Ala.

Learn how to make projection boxes and explore use of lenses and telescopes in physical science or earth science classes.

Spreadable, Edible, and Incredible Coral Reefs! —Science Content— (Bio)*(Informal Education)**Napoleon D1&2, Sheraton***Carolyn E. Dixon** (*cdixon@disl.org*), Dauphin Island Sea Lab, Dauphin Island, Ala.

Learn how to make different models of coral reef critters using sweets, healthy snacks, and recyclables.

Flatheads Pursue Diversity: Beyond the Phases of Meiosis —Science Content—**(Bio)***(Middle Level–College)**Rhythms II, Sheraton***Janet L. Vigna** (*vignaj@gvsu.edu*), Grand Valley State University, Allendale, Mich.

As members of a fictional flathead species, participants will actively demonstrate how the cellular process of meiosis leads to trait diversity in populations.

Hurricanes Katrina and Rita Geographical Reality Check: Thinking About Scale —Science Content— (Gen)*(Middle Level–High School/Informal Education)**Southdown, Sheraton***Dianne M. Lindstedt** (*dlindst@lsu.edu*), Louisiana State University, Baton Rouge

Using a hands-on mapping activity with hurricane data helps students understand the scale and impact of natural hazards.

5:00–6:30 PM EXHIBITOR WORKSHOP**PASCO Presents the Seventh Annual Just Physics Evening (Phys)***(Grades 6–12)**Room 244/245, Convention Center*

Sponsor: PASCO Scientific

Presenter to be announced

Please join us for another Just Physics Evening event filled with fun, food, and tips for teaching physics.

5:00–7:00 PM MEETING**NMLSTA Board Meeting***(By Invitation Only)**Durham, Hilton*

5:00–7:00 PM SOCIALS

APAST Social

(By Invitation Only)

Windsor, Hilton

For additional information, visit www.apast.org.

MSU Teachers in Geosciences Reunion

(By Invitation Only)

Bayside B, Sheraton

Mississippi State University's Teachers in Geosciences program has been going strong for over 10 years! Alumni and current and prospective students are invited to this reunion.

6:00–7:00 PM RECEPTION

NSTA Student Member and Student Chapter Reception

(By Invitation Only)

Ile de France II, JW Marriott

Enjoy a few delicious treats and soft drinks, network with other new and preservice teachers from all over North America, and share your insights with key NSTA leadership, including NSTA President Page Keeley. Student chapter representatives will have the opportunity to share their success stories and lessons learned with students at teacher preparation institutions that currently do not have an NSTA Student Chapter.

6:00–8:00 PM RECEPTION

Science Matters – Building a Presence Reception

(By Invitation Only)

Versailles Ballroom, Hilton

This reception is sponsored by AquaPhoenix Scientific.

6:30–8:00 PM RECEPTION

NESTA Friends of Earth Science Reception

La Galerie 6, New Orleans Marriott

For additional information, visit nestanet.org.

7:00–9:30 PM SOCIAL

SCST Social and Poster Session

Ile de France I, JW Marriott

6:00 PM–12 Midnight **SPECIAL EVENING SESSION**

A Stimulating Evening with Eight Extraordinary
Scientists and Communicators of Science:
Sagan, Bronowski, Gould, Miller, Morrison,
Bartlett, Carson, and Herschbach

Elmwood, Hilton

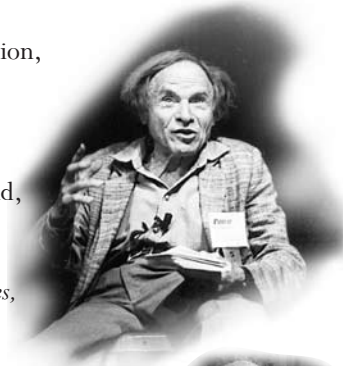
Mitchell E. Batoff, Past President, New Jersey Science Teachers Association, Nutley

Linda Frederick (*adnil@ptd.net*), Freedom High School, Bethlehem, Pa.

Gordon D. Clark, Retired Educator, Manalapan, N.J.

Prsident: Donald E. Beahm (*dbeahm@cpis.net*), Ophthalmologist, Great Bend, Kans.

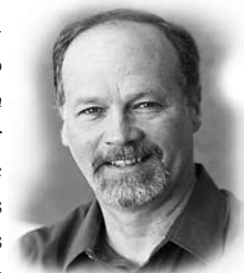
Be inspired, informed, motivated, and entertained by these world-renowned luminaries, all with a sense of history as well as science.



CARL SAGAN needs no introduction. See excerpts from *Cosmos*, his classic landmark TV series and winner of multiple awards for distinguished programming, as well as one of his many appearances on *The Tonight Show* with Johnny Carson. JACOB BRONOWSKI was a master at intertwining science and the humanities. See *Knowledge or Certainty*, the most famous and powerful episode of his epic film series and book *Ascent of Man*. STEPHEN JAY GOULD was a world-renowned Harvard paleontologist and multifaceted gifted writer. See his 1984 *NOVA* production *This View of Life* and one or more of his conversations with Charlie Rose.



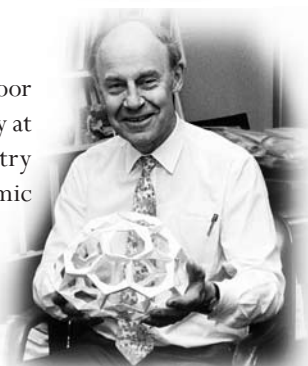
KENNETH R. MILLER, professor of biology at Brown, is a leading expert on evolution education and a masterful communicator. One of the best. See excerpts from two of his great presentations—*Darwin, God, and Design: America's New Battle Over Evolution* and *Evolution: Fossils, Genes, and Mousetraps*. PHILIP MORRISON, institute professor emeritus at MIT and distinguished theoretical physicist, was actively involved in science education for more than three decades. See excerpts from several choice productions of this fascinating, charismatic speaker. ALBERT A. BARTLETT, professor emeritus of physics at the University of Colorado, has lectured more than 1,600 times at venues across the country on *Arithmetic, Population, and Energy*.



The story of BEN CARSON, MD, is an inspiration for us all. An inner-city kid with poor grades and little motivation, at age 33 he became Director of Pediatric Neurosurgery at Johns Hopkins University Hospital. DUDLEY HERSCHBACH, professor of chemistry at Harvard and, since 1976, Beard Professor of Science, is an animated, often dynamic speaker. See excerpts from his recent talk *Linus Pauling as an Evangelical Chemist*.



Relevant door prizes galore throughout the entire evening. Receive a useful handout. Refreshments at halftime. Come and go, stay as long as you wish. Bring your dinner!





Index

- Exhibitors (see Volume 4)
- Meetings and Social Functions
- Index of Exhibitor Workshops
- Schedule At a Glance (Subject Index)
- Participant Index
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Conference Program

Meetings and Social Functions

Friday, March 20

NSTA Dorothy K. Culbert CAG Breakfast (M-2)

(Tickets required; \$40)

St. Charles, New Orleans Marriott 7:00–8:30 AM

High School Breakfast (M-3)

(Tickets required; \$40)

Maurepas, Sheraton 7:00–8:30 AM

APAST Breakfast

(By Invitation Only)

Belle Chasse, Hilton 7:00–8:30 AM

SEPA Meeting

(By Invitation Only)

Durham, Hilton 7:00–9:00 AM

AMSE Alice Moses Breakfast

(By Invitation Only)

Rosedown, Hilton 7:00–9:00 AM

ASMC Networking Forum

(By Invitation Only)

Ile de France I, JW Marriott 7:00–10:00 AM

Breakfast with Tim Samaras

Sponsored by National Geographic, The JASON Project

(By Invitation Only)

Compass, Hilton 7:30–9:00 AM

Aerospace Programs Advisory Board Meeting

Estherwood, Sheraton 8:30–10:30 AM

NSTA International Lounge

Trafalgar, Hilton 9:00 AM–5:00 PM

ASMC Advisory Board Meeting

(By Invitation Only)

St. Claude, JW Marriott 10:00 AM–3:00 PM

Journal of College Science Teaching Advisory Board Meeting

Estherwood, Sheraton 11:00 AM–1:00 PM

NSELA/ASTE Luncheon (M-4)

(Tickets required; \$55)

St. Charles, New Orleans Marriott 12 Noon–2:00 PM

NSTA/NMLSTA Middle Level Luncheon (M-5)

(Tickets required; \$55)

Rosedown, Hilton 12 Noon–2:00 PM

I Teach Inquiry Network Forum and Reception

(By Invitation Only)

Ile de France I, JW Marriott 12 Noon–5:00 PM

AMSE General Membership Meeting

Room 253, Convention Center 12:15–1:30 PM

Write from the Start Meeting

Evergreen, Sheraton 1:00–2:00 PM

New Science Teacher Academy Conference Discussion Session

(By Invitation Only)

Bayside B, Sheraton 1:00–3:00 PM

NSTA New Member Social

Sponsored by GEICO

(By Invitation Only)

La Galerie 6, New Orleans Marriott 2:00–3:00 PM

Reviewing for NSTA Journals Meeting

Evergreen, Sheraton 2:00–3:00 PM

Science Matters – Building a Presence State Coordinators Annual Meeting

(By Invitation Only)

Bacchus, New Orleans Marriott 2:00–4:00 PM

GEMS Network Reception

Ile de France II, JW Marriott 2:30–4:30 PM

NMLSTA Ice Cream Social

Rosedown, Hilton 3:00–4:30 PM

International Advisory Board Meeting

Estherwood, Sheraton 3:00–5:00 PM

Meetings and Social Functions

SESD Business Meeting Newberry, Hilton 3:00–5:00 PM	MSU Teachers in Geosciences Reunion (By Invitation Only) Bayside B, Sheraton 5:00–7:00 PM
SCST Annual Business Meeting Frontenac, JW Marriott 3:30–5:00 PM	NMLSTA Board Meeting (By Invitation Only) Durham, Hilton 5:00–7:00 PM
The Dr. Wendell G. Mohling Chapters and Associated Groups Reception <i>Sponsored by ETA/Cuisenaire</i> (By Invitation Only) La Galerie 6, New Orleans Marriott 3:30–5:00 PM	NSTA Student Member and Student Chapter Reception Ile de France II, JW Marriott 6:00–7:00 PM
ExploraVision Ice Cream Social and Information Session Room 352, Convention Center 4:00–5:00 PM	Science Matters – Building a Presence Reception <i>Sponsored by AquaPhoenix Scientific</i> Versailles Ballroom, Hilton..... 6:00–8:00 PM
Retired Members Reception St. Charles, New Orlean Marriott 5:00–6:00 PM	NESTA Friends of Earth Science Reception La Galerie 6, New Orleans Marriott 6:30–8:00 PM
APAST Social (By Invitation Only) Windsor, Hilton 5:00–7:00 PM	SCST Social and Poster Session Ile de France I, JW Marriott 7:00–9:30 PM

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Academy of Model Aeronautics

Booth No. 901

Friday, March 20 10:00–11:30 AM Room 228, Conv. Center AeroLab (p. 77)

Bio-Rad Laboratories

Booth No. 439

Friday, March 20 8:00–9:00 AM Room 230, Conv. Center Bio-Rad Genes in a Bottle™ Kit (p. 35)
 Friday, March 20 8:00–10:30 AM Room 229, Conv. Center Bio-Rad—DNA Fingerprinting and Gel Analysis (p. 42)
 Friday, March 20 10:00–11:30 AM Room 230, Conv. Center Bio-Rad—Is There Molecular Evidence for Evolution? Protein Profiler Kit (p. 77)
 Friday, March 20 1:00–3:30 PM Room 229, Conv. Center Bio-Rad Got Protein?™ Kit (p. 125)
 Friday, March 20 2:00–4:00 PM Room 230, Conv. Center Bio-Rad Comparative Proteomics Kit II: Western Blot Module (p. 149)
 Friday, March 20 4:00–5:00 PM Room 229, Conv. Center Bio-Rad Cloning and Sequencing Explorer Series (p. 166)

BIOZONE International Ltd.

Booth No. 545

Friday, March 20 4:00–5:30 PM Room 225, Conv. Center BIOZONE Showcases Their Biology Workbooks and Presentation Media (p. 168)

Carolina Biological Supply Co.

Booth No. 124

Friday, March 20 8:00–9:30 AM Room 215, Conv. Center Carolina's Young Scientist's Dissection Series (p. 37)
 Friday, March 20 8:00–9:30 AM Room 216, Conv. Center Amplify Your Genetics Teaching Skills with Carolina's New Inquiries in Science™ Biology Units (p. 38)
 Friday, March 20 8:00–9:30 AM Room 217, Conv. Center Math Out of the Box®—Measuring Success! (p. 38)
 Friday, March 20 10:00–11:30 AM Room 215, Conv. Center Drop the Lecture and Let Students Pick Up the Learning in AP® Science (p. 75)
 Friday, March 20 10:00–11:30 AM Room 216, Conv. Center Go APES! Explore Carolina's Quality AP® Environmental Science Series (p. 75)
 Friday, March 20 10:00–11:30 AM Room 217, Conv. Center Science Investigations: Students, Notebooks, and the Power of Inquiry (p. 75)
 Friday, March 20 12 Noon–1:30 PM Room 215, Conv. Center Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (p. 102)
 Friday, March 20 12 Noon–1:30 PM Room 216, Conv. Center Illuminate Your Classroom with Carolina's Green Gene Colony Transformation (p. 102)
 Friday, March 20 12 Noon–1:30 PM Room 217, Conv. Center The Zula Patrol® Exploration Station—Mission: Simple Machines! (p. 102)
 Friday, March 20 2:00–3:30 PM Room 215, Conv. Center AUTOPSY: Forensic Dissection Featuring Carolina's Perfect Solution® Pigs (p. 145)
 Friday, March 20 2:00–3:30 PM Room 216, Conv. Center "Finding Solutions" for Your Chemistry Labs with Carolina's New Inquiries in Science™ Chemistry Kits (p. 145)
 Friday, March 20 2:00–3:30 PM Room 217, Conv. Center Effective Science Materials Support Systems (p. 146)
 Friday, March 20 4:00–5:30 PM Room 215, Conv. Center Butterflies in Your Classroom (p. 167)

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Carolina Biological Supply Co., cont.

Friday, March 20	4:00–5:30 PM	Room 216, Conv. Center	Genetics with Wisconsin Fast Plants®/Flies/Corn (p. 168)
Friday, March 20	4:00–5:30 PM	Room 217, Conv. Center	The Middle School Science Lab...Out of a Box! (p. 168)

CORD Communications

Booth No. 611

Friday, March 20	2:00–3:30 PM	Room 235, Conv. Center	The Case of the Kidnapped Tamarin Monkey—Did You Do It? (p. 148)
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CPO Science/School Specialty Science

Booth No. 610

Friday, March 20	8:00–9:30 AM	Room 210, Conv. Center	Genetics: The Crazy Traits Game (p. 37)
Friday, March 20	10:00–11:30 AM	Room 210, Conv. Center	Chemistry and the Atom (p. 74)
Friday, March 20	12 Noon–1:30 PM	Room 210, Conv. Center	Light and Optics (p. 102)
Friday, March 20	2:00–3:30 PM	Room 210, Conv. Center	Chemistry and the Data Collector (p. 145)
Friday, March 20	4:00–5:30 PM	Room 210, Conv. Center	Car and Ramp (p. 167)

Delta Education/School Specialty Science

Booth No. 411

Friday, March 20	8:00–9:15 AM	Room 208, Conv. Center	Put Some Spark into Science Investigations (p. 35)
Friday, March 20	10:00–11:15 AM	Room 208, Conv. Center	Integrating Science and Literacy: Grades 1–6 (p. 74)
Friday, March 20	1:00–2:15 PM	Room 208, Conv. Center	Working as One with Hands and Minds (p. 124)

Delta Education/School Specialty Science-FOSS

Booth No. 411

Friday, March 20	8:30–11:30 AM	Room 209, Conv. Center	Using Science Notebooks with FOSS Middle School Courses (p. 45)
Friday, March 20	1:00–2:30 PM	Room 209, Conv. Center	FOSS Assessment: Valuing Academic Progress in Grades 3–6 (p. 124)
Friday, March 20	3:30–4:30 PM	Room 209, Conv. Center	Introduction to Planet FOSS for Middle School (p. 164)

Discovery Education

Booth No. 242

Friday, March 20	8:00–9:30 AM	Room 225, Conv. Center	Get Your Green On (p. 39)
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Disney Educational Products/Underwriters Laboratories

Booth No. 303

Friday, March 20	12 Noon–1:30 PM	Room 225, Conv. Center	Safety Smart Science (p. 103)
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Diversified Woodcrafts, Inc.

Booth No. 1013

Friday, March 20	10:00–11:30 AM	Room 225, Conv. Center	How to Get the Science Room You Want and Need! (p. 76)
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DNA Depot

Booth No. 406

Friday, March 20	10:00–11:30 AM	Room 235, Conv. Center	Research on the Effectiveness of Hands-On Experiments (p. 78)
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Educational Innovations, Inc.

Booth No. 1317

Friday, March 20	8:00–9:30 AM	Room 214, Conv. Center	The Private Eye®: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 37)
Friday, March 20	10:00–11:30 AM	Room 214, Conv. Center	Elementary Super! Wow! Neat! Science by Ron Perkins (p. 75)
Friday, March 20	12 Noon–1:30 PM	Room 214, Conv. Center	Middle School Super! Wow! Neat! Science by Ron Perkins (p. 102)
Friday, March 20	2:00–3:30 PM	Room 214, Conv. Center	High School Super! Wow! Neat! Physics and Chemistry by Ron Perkins (p. 145)
Friday, March 20	4:00–5:30 PM	Room 214, Conv. Center	The Private Eye®: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 167)

EDVOTEK

Booth No. 407

Friday, March 20	8:00–9:30 AM	Room 228, Conv. Center	EDVOTEK Biotechnology—PCR Made Easy! (p. 39)
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Energy Concepts, Inc.

Booth No. 613

Friday, March 20	8:00–9:30 AM	Room 235, Conv. Center	Fundamentals of Biotechnology (p. 40)
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ESRI

Booth Nos. 1736/1737

Friday, March 20	8:00–9:30 AM	Room 231, Conv. Center	GIS for Earth Science Inquiry (p. 40)
Friday, March 20	10:00–11:30 AM	Room 231, Conv. Center	GIS for Environmental Science Inquiry (p. 77)

Fisher Scientific Education

Booth Nos. 602/603

Friday, March 20	8:00–9:30 AM	Room 211, Conv. Center	Fun and Games That Help Improve Test Scores! (p. 37)
Friday, March 20	10:30 AM–12 Noon	Room 211, Conv. Center	How Safe Is Your Lab? (p. 81)
Friday, March 20	1:30–3:00 PM	Room 211, Conv. Center	Using Technology in Your Science Classroom: How to Really Hook Your Students (p. 129)
Friday, March 20	4:00–5:00 PM	Room 211, Conv. Center	Green Science in the Middle and High School Classroom (p. 166)

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Flinn Scientific, Inc.

Booth No. 710

Friday, March 20	8:00–9:30 AM	Room 204/205, Conv. Center	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 36)
Friday, March 20	10:00 AM–12 Noon	Room 244/245, Conv. Center	Seeing Is Believing—Make the Invisible Visual in Chemistry (p. 79)
Friday, March 20	12 Noon–1:30 PM	Room 204/205, Conv. Center	Biotechnology and Genetics Activities from Flinn Scientific (p. 101)
Friday, March 20	12:30–1:30 PM	Room 244/245, Conv. Center	Flinn Scientific eLearning <i>Teaching Chemistry</i> TM Video Series (p. 121)
Friday, March 20	2:00–3:30 PM	Room 204/205, Conv. Center	How to Design a Safe and Efficient Science Laboratory for the 21st Century (p. 145)

Frey Scientific/School Specialty Science

Booth No. 511

Friday, March 20	8:00–9:30 AM	Room 213, Conv. Center	Inquiry Investigations TM Forensics Science Curriculum Module and Kits (p. 37)
Friday, March 20	10:00–11:30 AM	Room 213, Conv. Center	Introducing Inquiry Investigations TM : Hands-On Inquiry Activities Focusing on Technology (p. 75)
Friday, March 20	1:00–2:30 PM	Room 213, Conv. Center	Inquiry Investigations TM Biotechnology Curriculum Modules and Kits (p. 124)
Friday, March 20	3:00–4:30 PM	Room 213, Conv. Center	A Closer Look at Biology, Chemistry, and Earth Science Virtual Labs (p. 152)

Houghton Mifflin Harcourt

Booth No. 809

Friday, March 20	12 Noon–1:30 PM	Room 227, Conv. Center	<i>What Do You Know About That!</i> Strategies, Activities, and Motivating Materials for Reinforcing Students' Knowledge Before the Standardized Test (p. 104)
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Houghton Mifflin Harcourt-Holt McDougal

Booth No. 809

Friday, March 20	8:00–9:30 AM	Room 227, Conv. Center	Capturing Attention in the Chemistry Classroom (p. 39)
Friday, March 20	10:00–11:30 AM	Room 227, Conv. Center	Practical Strategies for Engaging Today's Biology Student (p. 77)
Friday, March 20	2:00–3:30 PM	Room 227, Conv. Center	Inquiry-based Labs for the Biology Classroom (p. 147)
Friday, March 20	4:00–5:30 PM	Room 227, Conv. Center	Engaging Inquiry Activities for Middle School (p. 168)

Insurance Institute for Highway Safety

Booth No. 2111

Friday, March 20	4:00–5:30 PM	Room 226, Conv. Center	Just Released! New IIHS Car Crash Video—Perfect for Integrating the Sciences (p. 168)
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International Expeditions

Booth No. 1533

Friday, March 20	8:00–9:30 AM	Room 226, Conv. Center	Amazon Rain Forest Expedition: Curriculum from the Classroom to the Field (p. 39)
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International Schools Services

Booth No. 200

Friday, March 20	4:00–5:30 PM	Room 231, Conv. Center	Teach Overseas—International Schools Services (ISS) (p. 169)
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It's About Time

Booth No. 100

Friday, March 20	8:00–9:00 AM	Room 212, Conv. Center	Active Physical Science (p. 35)
Friday, March 20	9:30–10:30 AM	Room 212, Conv. Center	Project-Based Inquiry Science: A New Middle School Science Program—From a Science Educator's Point of View (p. 70)
Friday, March 20	11:00 AM–12 Noon	Room 212, Conv. Center	Investigating Earth Systems and EarthComm: Middle School and High School Guided Inquiry (p. 98)
Friday, March 20	12:30–1:30 PM	Room 212, Conv. Center	Coordinated Science for the Physical, Earth, and Space Sciences (p. 120)
Friday, March 20	2:00–3:00 PM	Room 212, Conv. Center	<i>Active Physics</i> : Newly Revised Third Edition (p. 144)
Friday, March 20	3:30–4:30 PM	Room 212, Conv. Center	Active Chemistry (p. 164)

The JASON Project

Booth No. 1114

Friday, March 20	4:00–5:30 PM	Room 236, Conv. Center	The JASON Project: Connecting Students with Great Explorers and Great Events (p. 170)
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Kendall/Hunt Publishing Co.

Booth No. 425

Friday, March 20	12 Noon–1:30 PM	Room 231, Conv. Center	Forensic Science for High School: An Inquiry-rich Curriculum (p. 104)
Friday, March 20	2:00–3:30 PM	Room 231, Conv. Center	Teaching Chemistry: "When Am I Ever Going to Need This?" (p. 147)

Key Curriculum Press

Booth No. 1818

Friday, March 20	8:00–9:30 AM	Room 232, Conv. Center	Living by Chemistry: Create a Table! (p. 40)
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Kinetic Books

Booth No. 402

Friday, March 20	4:00–5:30 PM	Room 232, Conv. Center	Experience Digital Physics Curricula (p. 169)
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Lab-Aids, Inc.

Booth No. 717

Friday, March 20	10:00–11:30 AM	Room 226, Conv. Center	Making and Interpreting Topographic Maps (p. 76)
Friday, March 20	12 Noon–1:30 PM	Room 226, Conv. Center	A Natural Approach to Chemistry (p. 104)
Friday, March 20	2:00–3:30 PM	Room 226, Conv. Center	A Natural Approach to Chemistry (p. 146)

LaMotte Co.

Booth No. 333

Friday, March 20	10:00–11:30 AM	Room 232, Conv. Center	Stream Ecology: Slimy Leaves for Clean Streams (p. 78)
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Mississippi State University

Booth No. 1925

Friday, March 20	12 Noon–1:30 PM	Room 232, Conv. Center	Master of Science in Geosciences via Distance Learning from Mississippi State University (p. 105)
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National Academy of Sciences

Booth No. 1204

Friday, March 20	4:00–5:30 PM	Room 228, Conv. Center	From the Field: Igniting a Passion for Science (p. 169)
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National Geographic School Publishing

Booth No. 1111

Friday, March 20	12 Noon–1:30 PM	Room 236, Conv. Center	Student Success with Inquiry (p. 105)
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PASCO Scientific

Booth No. 1813

Friday, March 20	8:00–9:00 AM	Room 218, Conv. Center	Tough Topics in Middle School Science: Earth Science (p. 35)
Friday, March 20	8:00–9:00 AM	Room 219, Conv. Center	Tough Topics in Chemistry: States of Matter (p. 35)
Friday, March 20	9:30–10:30 AM	Room 218, Conv. Center	Tough Topics in Physics: Conservation of Energy (p. 70)
Friday, March 20	9:30–10:30 AM	Room 219, Conv. Center	Tough Topics in Biology: Enzymes (p. 70)
Friday, March 20	11:00 AM–12 Noon	Room 218, Conv. Center	Tough Topics in Middle School Science: Life Science (p. 99)
Friday, March 20	11:00 AM–12 Noon	Room 219, Conv. Center	Tough Topics in Earth Science: Understanding Weather with GIS (p. 99)
Friday, March 20	12:30–1:30 PM	Room 218, Conv. Center	Tough Topics in Physics: Ohm's Law (p. 121)
Friday, March 20	12:30–1:30 PM	Room 219, Conv. Center	Tough Topics in Biology: Cell Respiration (p. 121)
Friday, March 20	2:00–3:00 PM	Room 218, Conv. Center	Tough Topics in Middle School Science: Physical Science (p. 144)
Friday, March 20	2:00–3:00 PM	Room 219, Conv. Center	Tough Topics in Chemistry: Determining the Concentration of a Solution—Beer's Law (p. 144)
Friday, March 20	3:30–4:30 PM	Room 219, Conv. Center	Tough Topics in Environmental Science: Field Data Collection (p. 164)

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PASCO Scientific, cont.

Friday, March 20	3:30–4:45 PM	Room 218, Conv. Center	Technology and National Board Certification for Accomplished Teachers (p. 165)
Friday, March 20	5:00–6:30 PM	Room 244/245, Conv. Center	PASCO Presents the Seventh Annual Just Physics Evening (p. 181)

**PBS TeacherLine/Teachers' Domain
Booth No. 740**

Friday, March 20	4:00–5:30 PM	Rooms 204/205, Conv. Center	How to Supplement Your Lessons with <i>NOVA</i> , <i>Zoom</i> , and Other Teachers' Domain Digital Media Resources for Your Classroom (p. 167)
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**Pearson
Booth No. 110**

Friday, March 20	8:00–9:30 AM	Room 220, Conv. Center	The Heart of Science Teaching: INQUIRY, INQUIRY, INQUIRY! (p. 38)
Friday, March 20	8:00–9:30 AM	Room 221, Conv. Center	Inquiry in the Chemistry Classroom (p. 38)
Friday, March 20	10:00–11:30 AM	Room 220, Conv. Center	STEM: Activity Options for the Elementary and Middle Grades Science Classroom (p. 76)
Friday, March 20	10:00–11:30 AM	Room 221, Conv. Center	New Editions of <i>Physical Science</i> and <i>Integrated Science</i> (p. 76)
Friday, March 20	12 Noon–1:30 PM	Room 220, Conv. Center	Reading Informational Text: Strategies for Connecting Science and Literacy with Content Readers (p. 103)
Friday, March 20	12 Noon–1:30 PM	Room 221, Conv. Center	Energy Sources for the Future of Humanity: Examples of the Importance of Physical Science! (p. 103)
Friday, March 20	2:00–3:30 PM	Room 220, Conv. Center	WOW! Realistic High School Laboratory Simulations You Have to See to Believe! (p. 146)

**Questar Assessment
Booth No. 1005**

Friday, March 20	12 Noon–1:30 PM	Room 235, Conv. Center	Science Tests and Learning: Science Textbook Reading Is Not the Same as Literature Reading (p. 105)
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**Sargent-Welch
Booth No. 642**

Friday, March 20	10:00–11:30 AM	Room 202, Conv. Center	CENCO Physics Presents: Resources for Teaching Physics (p. 74)
Friday, March 20	12 Noon–1:30 PM	Room 202, Conv. Center	Scholar Chemistry Demonstrations (p. 101)

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Science Kit & Boreal Laboratories

Booth No. 638

Friday, March 20	8:00–9:30 AM	Room 202, Conv. Center	Science Kit Presents: Hands-On Activities with a Hydrogen Fuel Cell Car (p. 36)
Friday, March 20	4:00–5:30 PM	Room 202, Conv. Center	I Didn't, Who Did? (p. 167)

Smithsonian Institution

Booth No. 1640

Friday, March 20	12 Noon–1:30 PM	Room 228, Conv. Center	Smithsonian Science: At the National Zoo, We've Got Watching Animals Down to a Science (p. 104)
Friday, March 20	2:00–3:30 PM	Room 228, Conv. Center	Smithsonian Science: Invasive Species and Society Competition (p. 147)

Spitz, Inc.

Booth No. 1133

Friday, March 20	11:00 AM–12 Noon	Booth No. 1133, Conv. Center	Visualizing Our Universe in a Full-dome Classroom: Teaching Simulations (p. 98)
Friday, March 20	3:00–4:00 PM	Booth No. 1133, Conv. Center	Immersive Space Science Curriculum: "The Seasons" in a Full-dome Classroom (p. 151)

Starry Night Education

Booth No. 2117

Friday, March 20	2:00–3:30 PM	Room 225, Conv. Center	Pluto, Yet Again! (p. 146)
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Tabula Digita

Booth No. 400

Friday, March 20	4:00–5:30 PM	Room 235, Conv. Center	Educational Gaming in Science: Shifting the Paradigm (p. 169)
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U.S. Dept. of Energy/Office of Scientific and Technical Information (OSTI)

Booth No. 1240

Friday, March 20	8:00–9:30 AM	Room 207, Conv. Center	The U.S. Department of Energy Makes Government Research Accessible Online (www.osti.gov) (p. 36)
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U.S. Dept. of the Interior, Minerals Management Service (MMS)

Booth No. 1626

Friday, March 20	2:00–3:30 PM	Room 232, Conv. Center	Ocean Resources—From Energy to the Environment K–12 (p. 147)
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Vernier Software & Technology

Booth No. 314

Friday, March 20	8:00–9:30 AM	Room 222, Conv. Center	<i>Chemistry with Vernier</i> (p. 38)
Friday, March 20	8:00–9:30 AM	Room 224, Conv. Center	<i>Forensics with Vernier</i> (p. 38)
Friday, March 20	10:00–11:30 AM	Room 222, Conv. Center	<i>Physics with Vernier</i> (p. 76)
Friday, March 20	10:00–11:30 AM	Room 224, Conv. Center	Engineering with Vernier (p. 76)
Friday, March 20	12 Noon–1:30 PM	Room 222, Conv. Center	<i>Water Quality with Vernier</i> (p. 103)
Friday, March 20	12 Noon–1:30 PM	Room 224, Conv. Center	Lights, Camera...Data Collection (p. 103)
Friday, March 20	2:00–3:30 PM	Room 222, Conv. Center	<i>Earth Science with Vernier</i> (p. 146)
Friday, March 20	2:00–3:30 PM	Room 224, Conv. Center	AP* Science with Vernier (p. 146)

WARD's Natural Science

Booth No. 641

Friday, March 20	2:00–3:30 PM	Room 202, Conv. Center	WARD's Presents: A Potpourri of Forensic Science Ideas (p. 144)
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Wavefunction, Inc.

Booth No. 1407

Friday, March 20	8:00–9:30 AM	Room 236, Conv. Center	Learning Chemistry with Software for Molecular-Level Visualization (p. 40)
Friday, March 20	10:00–11:30 AM	Room 236, Conv. Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 78)

WebAssign

Booth No. 2018

Friday, March 20	2:00–3:30 PM	Room 236, Conv. Center	Let WebAssign Do Your Homework Grading! (p. 148)
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Wright Group/McGraw-Hill

Booth No. 730

Friday, March 20	10:00–11:30 AM	Rooms 204/205, Conv. Center	Literacy Strategies in the Sciences (p. 74)
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Schedule At a Glance

G = General M = Middle School S = Supervision/Administration T = Teacher Preparation
 P = Preschool H = High School I = Informal Education
 E = Elementary C = College R = Research

BIOLOGY/LIFE SCIENCE

FRI

8:00–9:00 AM	M–H	Rhythms II, Sheraton	Quantitative Reasoning in Biology (p. 34)
8:00–8:30 AM	M–H	Rhythms I, Sheraton	Teacher Perceptions of an Inquiry Unit on Evolution (p. 30)
8:00–9:00 AM	H–C	Maurepas, JW Marriott	AP Biology Teachers' Open Forum (p. 26)
8:00–9:00 AM	E–H	Rhythms III, Sheraton	Oh, Me! Oh, My! Mitosis and Meiosis! (p. 34)
8:00–9:00 AM	M–H	Napoleon A1&2, Sheraton	Scintillating Science: The Alphabet Soup of Genetics (p. 34)
8:00–9:00 AM	ME	Room 254, Conv. Ctr.	Science with Video Games (p. 20)
8:00–9:00 AM	H–C	Ile de France III, JW Marr.	Teaching Hemoglobin—From Gene and Protein to Oxygen Transport and Sickle Cell Anemia (p. 33)
8:00–9:00 AM	E–H	Napoleon D3, Sheraton	Using Available Classroom Technology to Extend and Enhance Offsite Field and Peak Experiences (p. 29)
8:00–9:00 AM	P	Room R01, Conv. Ctr.	The Teacher and Child as Researchers: A Co-Constructivist Approach to Preschool Science Learning (p. 22)
8:00–9:00 AM	H	Room 257, Conv. Ctr.	NIH Symposium Follow-up Session: Exploring the Bioethics of Vaccination Policies (p. 20)
8:20–8:40 AM	G	Frontenac, JW Marriott	SCST Session: Making Teaching More Scientific: Evidence Shows the Use of Real-World Research Data Improves Student Learning (p. 25)
8:30–9:00 AM	M–H	Rhythms I, Sheraton	"DRAWING" Conclusions in Science (p. 30)
8:00–9:00 AM	6–10	Room 230, Conv. Ctr.	Bio-Rad Genes in a Bottle™ Kit (p. 35)
8:00–9:30 AM	5–8	Room 210, Conv. Ctr.	Genetics: The Crazy Traits Game (p. 37)
8:00–9:30 AM	6–C	Room 228, Conv. Ctr.	EDVOTEK Biotechnology—PCR Made Easy! (p. 39)
8:00–9:30 AM	9–C	Room 235, Conv. Ctr.	Fundamentals of Biotechnology (p. 40)
8:00–9:30 AM	G	Room 226, Conv. Ctr.	Amazon Rain Forest Expedition: Curriculum from the Classroom to the Field (p. 39)
8:00–9:30 AM	9–C	Room 224, Conv. Ctr.	<i>Forensics with Vernier</i> (p. 39)
8:00–9:30 AM	9–12	Room 216, Conv. Ctr.	Amplify your Genetics Teaching Skills with Carolina's New Inquiries in Science™ Biology Units (p. 38)
8:00–9:30 AM	5–8	Room 215, Conv. Ctr.	Carolina's Young Scientist's Dissection Series (p. 37)
8:00–10:30 AM	9–C	Room 229, Conv. Ctr.	Bio-Rad—DNA Fingerprinting and Gel Analysis (p. 42)
9:30–10:30 AM	6–8	Room 212, Conv. Ctr.	Project-Based Inquiry Science: A New Middle School Science Program—From a Science Educator's Point of View (p. 70)
9:30–10:30 AM	6–12	Room 219, Conv. Ctr.	Tough Topics in Biology: Enzymes (p. 70)
9:30–10:30 AM	H	Room 257, Conv. Ctr.	NIH Symposium Follow-up Session: Research Ethics: The Power and Peril of Human Experimentation (p. 49)

BIOLOGY/LIFE SCIENCE, cont.

FRI

9:50–10:00 AM	H–C	Frontenac, JW Marriott	SCST Session: Promoting Higher-Order Thinking in Freshman-Level Anatomy and Physiology (p. 52)
9:30–10:30 AM	H	Napoleon D3, Sheraton	NSTA High School Biology Share Session (p. 58)
9:30–10:30 AM	H	Napoleon A1&2, Sheraton	DNA Unzipped: What Is a Gene? (p. 68)
10:00–10:30 AM	H	Rhythms I, Sheraton	The Ideal Mate Project: Authentic Assessment in the Construction and Interpretation of the Student’s Own Family Pedigree (p. 60)
9:30–10:30 AM	H	Napoleon A3, Sheraton	Inquiring into Evolutionary Trees (p. 58)
9:30–10:00 AM	M–H	Rhythms I, Sheraton	Overcoming Hurdles to Open-ended Student Investigations (p. 58)
9:30–10:30 AM	H–C	Ile de France III, JW Marr.	Stem Cells: Current Research and Future Potential (p. 65)
9:30–10:30 AM	M–C	Rhythms III, Sheraton	The Wolbachia Project: One Bacterial Species, a Few Interactions, and Many Techno-scientists Born! (p. 69)
9:30–10:30 AM	H	Rhythms II, Sheraton	A Vivid Simulation for Human Population Growth (p. 68)
9:30–10:30 AM	E–H	Room 238, Conv. Ctr.	Pads, Pups, and Pods (p. 60)
9:30–11:30 AM	E–M/I	Room 338, Conv. Ctr.	FHL Pathway Session: Nature Journals and Field Guides: Tools for Linking Science and Literacy (p. 72)
10:00–11:30 AM	K–6	Room 217, Conv. Ctr.	Science Investigations: Students, Notebooks, and the Power of Inquiry (p. 75)
10:00–11:30 AM	10–12	Room 215, Conv. Ctr.	Drop the Lecture and Let Students Pick Up the Learning in AP® Science (p. 75)
10:00–11:30 AM	5–9	Room 235, Conv. Ctr.	Research on the Effectiveness of Hands-On Experiments (p. 78)
10:00–11:30 AM	9–12	Room 227, Conv. Ctr.	Practical Strategies for Engaging Today’s Biology Student (p. 77)
10:00–11:30 AM	9–C	Room 230, Conv. Ctr.	Bio-Rad—Is There Molecular Evidence for Evolution? Protein Profiler Kit (p. 77)
11:00 AM–12 Noon	6–8	Room 218, Conv. Ctr.	Tough Topics in Middle School Science: Life Science (p. 99)
11:00 AM–12 Noon	H–C	Ile de France III, JW Marr.	Science Take-Out: Kidney Function (p. 96)
11:00 AM–12 Noon	H	Room 257, Conv. Ctr.	NIH Symposium Follow-up Session: The Bioethics of Animals in Research (p. 83)
11:00 AM–12 Noon	M–C	Rhythms I, Sheraton	Teaching Evolution Without Compromising the Science or Offending Students’ Religious Beliefs (p. 93)
11:00 AM–12 Noon	M	Room 254, Conv. Ctr.	You Wouldn’t Pollute Your Body, Why Pollute Your Brain? Teaching About Substance Abuse from an Environmental Perspective (p. 83)
11:00 AM–12 Noon	G	Napoleon B1, Sheraton	Hue Are You? Color, Light, and the Human Eye (p. 97)
11:00 AM–12 Noon	G	Rhythms III, Sheraton	Online Genomics Resources for Students and Science Educators (p. 98)

BIOLOGY/LIFE SCIENCE, cont.**FRI**

11:00 AM–12 Noon	H–C	Room 238, Conv. Ctr.	Influenza: Fears of an Approaching Pandemic? (p. 93)
11:00 AM–12 Noon	H	Napoleon A3, Sheraton	Bioethics and the 21st Century (p. 92)
11:00 AM–12 Noon	M–H	Rhythms II, Sheraton	Our Amazing Immune System (p. 98)
11:00 AM–12:30 PM	M–H	Southdown, Sheraton	DUPONT Session: The Science of Food Safety (p. 99)
11:00 AM–1:00 PM	E	Room 333, Conv. Ctr.	BSCS Pathway Session: Inquiry Through the Eyes of an Elementary Learner (p. 99)
12 Noon–1:30 PM	9–C	Room 216, Conv. Ctr.	Illuminate Your Classroom with Carolina's Green Gene Colony Transformation (p. 102)
12 Noon–1:30 PM	6–12	Room 215, Conv. Ctr.	Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (p. 102)
12 Noon–1:30 PM	4–12	Room 228, Conv. Ctr.	Smithsonian Science: At the National Zoo, We've Got Watching Animals Down to a Science (p. 104)
12 Noon–1:30 PM	9–C	Rooms 204/205, Conv. Ctr.	Biotechnology and Genetics Activities from Flinn Scientific (p. 101)
12:30–1:00 PM	M–H	Rhythms I, Sheraton	Macrosopes: Wireless Sensor Networks for Soil Ecology (p. 109)
12:30–1:30 PM	H–C	Ile de France III, JW Marr.	Xylose Fermentation: A Classroom Biofuel Lab (p.)118
12:30–1:30 PM	H	Napoleon A1&2, Sheraton	Variation in Human Skin Pigmentation (p. 119)
12:30–1:30 PM	M–H	Napoleon D1&2, Sheraton	Brain Boot Camp...Empowering Student Learning (p.)120
12:30–1:30 PM	E–H	Rhythms II, Sheraton	Amazingly Simple Enzyme Assays for Everyone (p. 120)
12:30–1:30 PM	H	Rhythms III, Sheraton	A Foolproof Enzyme Lab (p. 120)
12:30–1:30 PM	M–C	Napoleon B1, Sheraton	Muse of Fire: Fire Ant Epidemiology (p. 119)
12:30–1:30 PM	6–12	Room 219, Conv. Ctr.	Tough Topics in Biology: Cell Respiration (p. 121)
12:30–1:30 PM	C	Frontenac, JW Marriott	SCST Session: The Marjorie Gardner Lecture: Ancient Maya Skeletons Meet 21st-Century Technology (p. 109)
1:00–1:30 PM	H–C	Maurepas, JW Marriott	Teaching Biotechnology in Grades 10–11 with an Interdisciplinary Project That Includes e-Learning Technology (p. 123)
1:00–3:30 PM	5–C	Room 229, Conv. Ctr.	Bio-Rad Got Protein?™ Kit (p. 125)
1:30–3:00 PM	E-M/I	Room 347, Conv. Ctr.	NGS Pathway Session: The BioBlitz Program—Bringing Science into Your Backyard (p. 128)
2:30–3:00 PM	I	Carondelet/Gp. 4, NO Marr.	Informal Science Day Session: Educational Value of Zoos and Aquariums: Results from Research on the Perceptions of Teachers, Administrators, and Parents (p. 136)
2:00–3:00 PM	I	Carondelet/Gp. 2, NO Marr.	Informal Science Day Session: It's ALIVE! How Zoos and Aquariums Can Promote Science (p. 135)
2:00–3:00 PM	M–C	Rhythms II, Sheraton	Hassle-free Microbiology (p. 143)

BIOLOGY/LIFE SCIENCE, cont.

FRI

2:00–2:30 PM	H	Rhythms I, Sheraton	A Secret of Fruit Ripening: Measuring Ethylene Production in School Laboratories (p. 137)
2:30–3:00 PM	M–H	Rhythms I, Sheraton	A “Bird in the Hand” Is Worth a Classful of Young Biologists (p. 137)
2:00–3:00 PM	M–H	Napoleon D1&2, Sheraton	Cruisin’ to Food Safety (p. 143)
2:00–3:00 PM	E–H	Rhythms III, Sheraton	Smithsonian Science: Bottleneck Genes and the Cheetah Conservation Story (p. 143)
2:00–3:00 PM	H	Napoleon A1&2, Sheraton	Dinner with Darwin: Maintaining Rigor and Integrity of Science Standards in Interdisciplinary Projects (p. 142)
2:00–3:00 PM	H–C	Ile de France III, JW Marr.	The Good, the Bad, and the Hydrophobic: Proteins and the Cell (p. 142)
2:00–3:30 PM	4–12	Room 228, Conv. Ctr.	Smithsonian Science: Invasive Species and Society (p. 147)
2:00–3:30 PM	9–12	Room 227, Conv. Ctr.	Inquiry-based Labs for the Biology Classroom (p. 147)
2:00–3:30 PM	9–12	Room 215, Conv. Ctr.	AUTOPSY: Forensic Dissection Featuring Carolina’s Perfect Solution® Pigs (p. 145)
2:00–4:00 PM	9–C	Room 230, Conv. Ctr.	Bio-Rad Comparative Proteomics Kit II: Western Blot Module (p. 149)
3:30–4:30 PM	M	Room 254, Conv. Ctr.	Scintillating Science: Plagues and Pestilence (p. 159)
4:00–4:30 PM	H	Rhythms I, Sheraton	Frog’s Blood vs. Human Blood: Comparing RBC as a Means to Understand Cellular Respiration and SA/V (p. 158)
3:30–4:30 PM	H–C	Maurepas, JW Marriott	Using Hardy-Weinberg Equilibrium to Show Evolutionary Change (p. 162)
3:30–4:30 PM	I	Napoleon D3, Sheraton	Thar She Blows! Introducing Marine Mammals to Your Class (p. 158)
3:30–4:30 PM	E–H	Rhythms II, Sheraton	Shear Madness! (p. 163)
3:30–4:30 PM	H	Rhythms III, Sheraton	Drop the Lecture and Let the Students Pick Up the Learning in AP Biology (p. 164)
3:30–4:00 PM	M–H	Rhythms I, Sheraton	Monkeys, Pandas, Viruses, and Bacteria, Oh My! Teaching Evolution in Dover, Pennsylvania (p. 158)
4:00–5:00 PM	9–C	Room 229, Conv. Ctr.	Bio-Rad Cloning and Sequencing Explorer Series (p. 166)
4:00–5:30 PM	9–12	Room 216, Conv. Ctr.	Genetics with Wisconsin Fast Plants®/Flies/ Corn (p. 168)
4:00–5:30 PM	6–12	Room 215, Conv. Ctr.	Butterflies in Your Classroom (p. 167)
4:00–5:30 PM	6–8	Room 217, Conv. Ctr.	The Middle School Science Lab...Out of a Box! (p. 168)
4:00–5:30 PM	10–12	Room 225, Conv. Ctr.	BIOZONE Showcases Their Biology Workbooks and Presentation Media (p. 168)
5:00–6:00 PM	P/E	Room R01, Conv. Ctr.	A Plant Parts Picnic! (p. 179)
5:00–6:00 PM	I	Napoleon D1&2, Sheraton	Spreadable, Edible, and Incredible Coral Reefs! (p. 181)

BIOLOGY/LIFE SCIENCE, cont.

FRI	5:00–6:00 PM	M–H	Napoleon A3, Sheraton	The Virtual Science Laboratory: Exploring Neurobiology Research in the Secondary Classroom (p. 177)
	5:00–6:00 PM	M–H	Napoleon A1&2, Sheraton	Urease: A New Enzyme for School Science Experiments (p. 180)
	5:00–6:00 PM	M–H	Room 254, Conv. Ctr.	Make Your Own Insulin! (p. 178)
	5:00–6:00 PM	M-C/S	Regent, NO Marriott	Up and Running: Using Inquiry and Lesson Study to Teach Cellular Respiration (p. 176)
	5:00–6:00 PM	M–C	Rhythms II, Sheraton	Flatheads Pursue Diversity: Beyond the Phases of Meiosis (p. 181)

CHEMISTRY/PHYSICAL SCIENCE

FRI	8:00–9:00 AM	E–H	Regent, NO Marriott	CSSS Session: Chemical-safe Schools—A Federal, State, and Local Perspective (p. 28)
	8:00–9:00 AM	M–H	Room R07, Conv. Ctr.	Solids: The Neglected “State” of Chemistry (p. 24)
	8:00–9:00 AM	E–M	Room 252, Conv. Ctr.	Great Science, Cheap (p. 32)
	8:00–9:00 AM	H	Salons 817 & 821, Sheraton	Simple Experiments on Reaction Rates (p. 30)
	8:00–9:00 AM	M	Room 353, Conv. Ctr.	CSI: An Interactive Website for Forensics (p. 22)
	8:00–9:00 AM	6–12	Room 219, Conv. Ctr.	Tough Topics in Chemistry: States of Matter (p. 35)
	8:00–9:30 AM	9–C	Room 236, Conv. Ctr.	Learning Chemistry with Software for Molecular-Level Visualization (p. 40)
	8:00–9:30 AM	9–12	Room 221, Conv. Ctr.	Inquiry in the Chemistry Classroom (p. 38)
	8:00–9:30 AM	9–12	Room 227, Conv. Ctr.	Capturing Attention in the Chemistry Classroom (p. 39)
	8:00–9:30 AM	9–11	Room 232, Conv. Ctr.	Living By Chemistry: Create a Table! (p. 40)
	8:00–9:30 AM	9–C	Room 222, Conv. Ctr.	<i>Chemistry with Vernier</i> (p. 38)
	9:30–10:30 AM	G	Room 243, Conv. Ctr.	Featured Presentation: The Dead Chemists Society Presents: It’s a Gas, Gas, Gas! (p. 47)
	10:10–10:30 AM	G	Frontenac, JW Marriott	SCST Session: ChemAssist: A Hands-On Manipulative for Use in the Chemistry Classroom (p. 53)
	9:30–10:00 AM	H	Gallier A/B, Sheraton	An Inquiry-based Laboratory on Reaction Rate Using Household Chemicals and Reusable Materials (p. 57)
	10:00–10:30 AM	M–H	Gallier A/B, Sheraton	Chemistry Myth Busters: Authentic Science Investigations (p. 57)
	9:30–10:30 AM	M	Room 240/241, Conv. Ctr.	Using a Student’s Individual Strongest Multiple Intelligence Attribute to Plan the Lesson, Teach the Lesson, and Evaluate the Lesson (p. 48)
	9:30–10:30 AM	G	Salons 817 & 821, Sheraton	Analogical Physical Science Teaching (p. 60)
	10:00–11:30 AM	9–C	Room 236, Conv. Ctr.	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 78)
	10:00–11:30 AM	6–C	Room 210, Conv. Ctr.	Chemistry and the Atom (p. 74)

CHEMISTRY/PHYSICAL SCIENCE, cont.

FRI

10:00 AM–12 Noon	6–12	Room 244/245, Conv. Ctr.	Seeing Is Believing—Make the Invisible Visual in Chemistry (p. 79)
11:00 AM–12 Noon	H	Room 337, Conv. Ctr.	LHS Pathway Session: Alternative Energy for Transportation: Hydrogen and Fuel Cells (p. 83)
11:00 AM–12 Noon	M–H	Bayside C, Sheraton	Build a Battery of Batteries (p. 97)
11:00 AM–12 Noon	H	Salons 817 & 821, Sheraton	Basic Polymer Chemistry for the High School Classroom (p. 93)
11:00 AM–12 Noon	P/E	Room R03, Conv. Ctr.	A Great Solution: Science Combined with Literature (p. 95)
11:00 AM–12 Noon	G	Gallier A/B, Sheraton	Whole-Class Inquiry in the Science Classroom (p. 92)
12 Noon–1:30 PM	7–12	Room 202, Conv. Ctr.	ScholAR Chemistry Demonstrations (p. 101)
12 Noon–1:30 PM	9–12	Room 226, Conv. Ctr.	A Natural Approach to Chemistry (p. 104)
12:30–1:30 PM	9–12	Room 244/245, Conv. Ctr.	Flinn Scientific eLearning Teaching Chemistry™ Video Series (p. 121)
12:30–1:30 PM	G	Gallier A/B, Sheraton	Standards-based Grading: Measuring Understanding (p. 115)
12:30–1:30 PM	H	Salons 817 & 821, Sheraton	The Use of Interactive PowerPoint Learning Activities in Chemistry (p. 116)
12:30–1:30 PM	E–H	Bayside C, Sheraton	Toys—They’re Not Just for Physics Anymore (p. 119)
12:30–1:30 PM	E–M	Room 353, Conv. Ctr.	NSTA Press Session: Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It (p. 117)
2:00–3:00 PM	E–M	Room 353, Conv. Ctr.	NSTA Press Session: Stop Faking It! Finally Understand MORE CHEMISTRY BASICS So You Can Teach It (p. 140)
2:00–3:00 PM	M–H	Salons 817 & 821, Sheraton	Project-based Assessments for Physical Science Students (p. 138)
2:00–3:00 PM	P/E	Room R03, Conv. Ctr.	Ice Cream, Chemical Reactions, and Molecular Structures (p. 140)
2:00–3:00 PM	G	Bayside C, Sheraton	The Structure of Matter, the Periodic Table, and Chemical Reactions the 5E Way (p. 142)
2:00–3:00 PM	6–12	Room 219, Conv. Ctr.	Tough Topics in Chemistry: Determining the Concentration of a Solution—Beer’s Law (p. 144)
2:00–3:00 PM	H	Room 337, Conv. Ctr.	LHS Pathway Session: Ethanol: The Cleaner Burning Alternative? (p. 132)
2:00–3:00 PM	H	Napoleon D3, Sheraton	NSTA High School Chemistry Share Session (p. 137)
2:00–3:30 PM	10–12	Room 231, Conv. Ctr.	Teaching Chemistry: “When Am I Ever Going to Need This?” (p. 147)
2:00–3:30 PM	9–12	Room 216, Conv. Ctr.	“Finding Solutions” for Your Chemistry Labs with Carolina’s New Inquiries in Science™ Chemistry Kits (p.)145
2:00–3:30 PM	9–12	Room 226, Conv. Ctr.	A Natural Approach to Chemistry (p.)146

CHEMISTRY/PHYSICAL SCIENCE, cont.**FRI**

2:00–3:30 PM	7–12	Rooms 204/205, Conv. Ctr.	How to Design a Safe and Efficient Science Laboratory for the 21st Century (p. 145)
2:00–3:30 PM	5–12	Room 210, Conv. Ctr.	Chemistry and the Data Collector (p. 145)
3:30–4:30 PM	9–12	Room 212, Conv. Ctr.	Active Chemistry (p. 164)
3:30–4:30 PM	G	Salons 817 & 821, Sheraton	In-Class Peer Review (ICPR) (p. 158)
3:30–4:30 PM	H	Gallier A/B, Sheraton	How to Survive Teaching Chemistry: Tips for New Teachers (p. 158)
3:30–4:30 PM	E–H	Bayside C, Sheraton	Particle Pictures: Connecting the Dots to the Big Ideas in Science (p. 162)
4:00–4:30 PM	M–H	Acadia/Grp. 2, NO Marr.	Teacher Researcher Day Session: Information Recall vs. Real Learning (p. 166)
4:00–5:00 PM	7–C	Room 211, Conv. Ctr.	Green Science in the Middle and High School Classroom (p. 166)
5:00–6:00 PM	H	Salons 817 & 821, Sheraton	Student-centered Modeling as a Means of Assessment for Learning in Chemistry (p. 177)
5:00–6:00 PM	H	Gallier A/B, Sheraton	Getting Kids Invested with Stories: Copper and the Statue of Liberty (p. 176)
5:00–6:00 PM	G	Bayside C, Sheraton	Use Polymer Science to Create 3-D Objects in Your Classroom (p. 180)

EARTH/SPACE SCIENCE**FRI**

8:30–9:00 AM	G	Napoleon C1, Sheraton	How We Created a Constitution for a Martian Colony (p. 29)
8:00–8:30 AM	G	Napoleon C1, Sheraton	Real-Time Graphing and Modeling: The NASA Kepler Mission's Method of Finding Planets (p. 29)
8:00–9:00 AM	M–H	Napoleon C3, Sheraton	Why Can't Scientists Predict Earthquakes? (p. 34)
8:00–9:00 AM	M–H	Room 239, Conv. Ctr.	Climate Change Data Here and There (p. 30)
8:00–9:00 AM	G	Napoleon C2, Sheraton	Bringing the Earth and Sky Indoors with Google Earth (p. 34)
8:00–9:00 AM	I	Bayside C, Sheraton	Interactive Simulations and Hands-On Activities Across the Earth and Space Sciences (p. 33)
8:00–9:00 AM	M–H	Napoleon B3, Sheraton	Space Exploration as a STEM Curriculum (p. 29)
8:00–9:00 AM	E–M	Room 356, Conv. Ctr.	Inquiring into Fossils (p. 32)
8:00–9:00 AM	6–8	Room 218, Conv. Ctr.	Tough Topics in Middle School Science: Earth Science (p. 35)
8:00–9:00 AM	G	Carondelet/Gp. 2, NO Marr.	Informal Science Day Session: A Celebration of the 2009 International Year of Astronomy! (p. 27)
8:00–9:30 AM	3–C	Room 231, Conv. Ctr.	GIS for Earth Science Inquiry (p. 40)
9:30–10:30 AM	P/E	Room R02, Conv. Ctr.	Helping English Learners Meet the Science Standards: The Secret Is Comprehensible Input (p. 64)
9:30–10:30 AM	E–M	Room 356, Conv. Ctr.	Clear Skies Ahead: Clearing Up Confusion on Clouds (p. 62)

EARTH/SPACE SCIENCE, cont.

FRI	9:30–10:30 AM	M	Room 254, Conv. Ctr.	A Paper Moon Phases Computer (p. 61)
	9:30–10:30 AM	I	Napoleon C1, Sheraton	Sun Earth Day 2009-International Year of Astronomy: The Sun—Yours to Discover (p. 58)
	9:30–10:30 AM	E–H	Bissonet, NO Marriott	NESTA Session: National Earth Science Teachers Association Geology Share-a-Thon (p. 65)
	9:30–10:30 AM	M–H	Napoleon B3, Sheraton	Shake and Bake: Using Secondary Data Sets to Explore Earthquakes and Climate (p. 58)
	9:30–10:30 AM	I	Napoleon C2, Sheraton	Google Earth as an Educational Tool (p. 68)
	9:30–10:30 AM	M–H/I	Bayside C, Sheraton	Inquiring About the Universe: Capture & Explore (Phase 2) (p. 66)
	9:30–10:30 AM	M–H	Napoleon C3, Sheraton	Discovering Earth’s Layered Interior with Seismic Waves—Finally an Activity That Addresses This Standard! (p. 68)
	9:30 AM–12:30 PM	G	Room 349, Conv. Ctr.	Exploratorium Pathway Session: Teaching Inquiry-based Earth Science Using Student-generated Field Investigations (p. 73)
	10:00–11:30 AM	6–8	Room 226, Conv. Ctr.	Making and Interpreting Topographic Maps (p. 76)
	11:00 AM–12 Noon	K–12	Booth No. 1133, Conv. Ctr.	Visualizing Our Universe in a Full-dome Classroom: Teaching Simulations (p. 98)
	11:00 AM–12 Noon	6–12	Room 219, Conv. Ctr.	Tough Topics in Earth Science: Understanding Weather with GIS (p. 99)
	11:00 AM–12 Noon	M–H	Napoleon C1, Sheraton	International Year of Astronomy 2009—Get Ready Now! (p. 92)
	11:00 AM–12 Noon	6–12	Room 212, Conv. Ctr.	Investigating Earth Systems and EarthComm: Middle School and High School Guided Inquiry (p. 98)
	11:00 AM–12 Noon	H	Napoleon D3, Sheraton	NSTA High School Earth/Environmental Science Share Session (p. 92)
	11:00 AM–12 Noon	M–H	Napoleon C3, Sheraton	“Seeing” the Spectrum (p. 97)
	11:00 AM–12 Noon	G	Napoleon C2, Sheraton	The Science; the Solutions: Addressing the Climate Conundrum (p. 97)
	11:00 AM–12 Noon	E–H	Bissonet, NO Marriott	NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon (p. 96)
	11:00 AM–12 Noon	E–M	Room 356, Conv. Ctr.	Field Trip to Mercury! (p. 94)
	11:00 AM–12 Noon	M–H	Napoleon B3, Sheraton	Space Weather: The Sun’s Impact on the Earth-Atmosphere System (p. 92)
	12 Noon–1:30 PM	K–12	Room 232, Conv. Ctr.	Master of Science in Geosciences via Distance Learning from Mississippi State University (p. 105)
	12:30–1:30 PM	E–H	Salon 828, Sheraton	Teaching the International Year of Astronomy: Techniques and Resources (p. 116)
	12:30–1:30 PM	E–H	Bissonet, NO Marriott	NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon (p. 118)
	12:30–1:30 PM	G	Room 239, Conv. Ctr.	In a New Light: The Color of Weather and Climate (p. 116)

EARTH/SPACE SCIENCE, cont.

FRI

12:30–1:30 PM	M–H	Napoleon B3, Sheraton	Give Your Students the World: Google Earth as a Powerful Science Teaching Tool (p. 115)
12:30–1:30 PM	G	Napoleon C1, Sheraton	Geology Rocks! Using GeoPets to Teach Earth Science (p. 115)
12:30–1:30 PM	M/I	Room 356, Conv. Ctr.	NASA Family Science Night: Changing Perceptions One Family at a Time (p. 117)
12:30–1:30 PM	H–C	Conde, JW Marriott	Using the USGS Earthquake Hazards Program in the Classroom (p. 112)
12:30–1:30 PM	M–C	Napoleon C2, Sheraton	NASA: Cool Astronomy (p. 120)
2:00–3:00 PM	M	Room 356, Conv. Ctr.	VitalVenture: A Watershed Education Continuum for Grades 5–8 (p. 132)
2:00–3:00 PM	G	Napoleon C2, Sheraton	Magnetism Activities, Space Weather, and Geomagnetism (p. 143)
2:00–3:00 PM	M–H	Napoleon C3, Sheraton	Sorting Out the Galaxy Zoo (p. 143)
2:00–3:00 PM	G	Napoleon C1, Sheraton	Coincidence or Pattern? When Do We Believe It? (p. 137)
2:00–3:00 PM	E–M	Room 253, Conv. Ctr.	Minerals, Rocks, and Cereal (p. 138)
2:00–3:00 PM	G	Salon 828, Sheraton	From Akron, Ohio, to Cape Town, South Africa (p. 138)
2:00–3:30 PM	G	Room 225, Conv. Ctr.	Pluto, Yet Again! (p. 146)
2:00–3:30 PM	6–12	Room 222, Conv. Ctr.	<i>Earth Science with Vernier</i> (p.)
3:00–4:00 PM	K–12	Booth No. 1133, Conv. Ctr.	Immersive Space Science Curriculum: “The Seasons” in a Full-dome Classroom (p. 146)
3:30–4:30 PM	G	Napoleon C1, Sheraton	NASA’s High-Energy Vision—Chandra and the X-ray Universe (p. 158)
3:30–4:30 PM	E	Room R07, Conv. Ctr.	Our Very Own Star—The Sun! (p. 161)
3:30–4:30 PM	M–H	Napoleon C3, Sheraton	Smithsonian Science: Earth from Space: How Satellite Imagery Helps Us Understand Our Planet (p. 163)
3:30–4:30 PM	M	Room 356, Conv. Ctr.	Project SPECTRA! (p. 160)
3:30–4:30 PM	G	Napoleon C2, Sheraton	Are We Alone in the Universe? Using Current Research In Astrobiology to Enrich Astronomy and Biology Curricula (p. 163)
5:00–6:00 PM	P–M	Room 356, Conv. Ctr.	From the Classroom to Outerspace, Are You Suited for Spacewalking? (p. 178)
5:00–6:00 PM	M	Room R08/R09, Conv. Ctr.	Sun-Earth Middle School Share-a-Thon (p.179)
5:00–6:00 PM	H	Napoleon C3, Sheraton	Can You See Me Now? Incorporating Lenses and Telescopes into Your Physical Science or Earth Science Classes (p. 181)
5:00–6:00 PM	E	Room R03, Conv. Ctr.	Ready-to-Go Space Science Activities for the K–5 Classroom (p.)
5:00–6:00 PM	M–H	Napoleon B3, Sheraton	From Land to Sea to Classroom (p. 171)

ENVIRONMENTAL SCIENCE

FRI

8:00–9:00 AM	P/E	Room R05, Conv. Ctr.	How Urban Children Construct Their Concepts of Ecosystems: A Long-Term Field-based Study of a Salt Marsh (p. 24)
8:00–9:00 AM	E–H	Bonaparte, NO Marriott	An Arctic Voyage Onboard the CCGS <i>Amundsen</i> (p. 26)
8:00–9:00 AM	G	Napoleon A3, Sheraton	Podcasting from the Schoolyard: Helping Our Students to Become Planetary Citizens (p. 29)
8:00–9:00 AM	M	Room 253, Conv. Ctr.	Using Outdoor Inquiry to Promote Stewardship: Bridging Classroom and Environment (p. 32)
8:00–9:00 AM	G	La Galerie 5, NO Marriott	Introducing Students to Remote-sensing Technology for Monitoring Earth Environments (p. 33)
8:00–9:00 AM	I	Carondelet/Gp. 4, NO Marr.	Informal Science Day Session: 4-H SET: One Million New Scientists; One Million New Ideas (p. 33)
8:00–9:00 AM	H	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: Using i-Tree Software to Inventory Trees and Assess the Benefits and Services They Provide (p. 20)
9:00–10:30 AM	M–H	Southdown, Sheraton	DUPONT Session: DuPont Presents—Biofuels: By-Products of Combustion (p. 45)
9:15–10:45 AM	E	Room 337, Conv. Ctr.	LHS Pathway Session: Using Environmental Issues to Build Students’ Scientific Argumentation Skills (p. 46)
9:30–10:00 AM	H	Bonaparte, NO Marriott	Save the Planet—Start with Your Own Yard! (p. 46)
9:30–10:30 AM	E	Room R01, Conv. Ctr.	Using Outdoor Inquiry to Promote Stewardship: Bridging Classroom and Environment (p. 64)
9:30–10:30 AM	G	Room 239, Conv. Ctr.	The Urban Ecosystem Re-examined: A Return to the Forest Where We Live (p. 48)
9:30–10:30 AM	M	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: The Forest Service <i>Natural Inquirer</i> Climate Change Education Collection (p. 61)
10:00–11:00 AM	M-H/I	Room 347, Conv. Ctr.	NGS Pathway Session: Collaborative Mapping and Analysis for Real-World Science Education (p. 73)
10:00–11:30 AM	3–C	Room 231, Conv. Ctr.	GIS for Environmental Science Inquiry (p. 77)
10:00–11:30 AM	9–12	Room 216, Conv. Ctr.	Go APES! Explore Carolina’s Quality AP® Environmental Science Series (p. 75)
10:00–11:30 AM	6–C	Room 232, Conv. Ctr.	Stream Ecology: Slimy Leaves for Clean Streams (p. 78)
10:30 AM–12 Noon	G	Room 352, Conv. Ctr.	Shell Science Seminar: Marine Science into the Classroom: Oceanography via the Gulf of Mexico Dead Zone (p. 81)

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11:00 AM–12 Noon	M	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: Using Hands-On Activities to Teach Careers in Environmental Science (p. 94)
11:00 AM–12 Noon	H	La Galerie 5, NO Marriott	Rigor vs. Rhetoric: Developing Scientific Skepticism in Our Students (p. 97)
11:00 AM–12 Noon	M	Room 357, Conv. Ctr.	Wet and Wild in Louisiana Wetlands (p. 94)
11:00 AM–12 Noon	I	Carondelet/Gp. 4, NO Marr.	Informal Science Day Session: GET City! Green Energy Technologies in the City (p. 90)
11:00 AM–12 Noon	H	Bonaparte, NO Marriott	Comparisons of U.S. and International Student Energy Use and Awareness Project (p. 89)
11:30 AM–12:30 PM	M–H	Room 347, Conv. Ctr.	NGS Pathway Session: Analyzing Energy Consumption with Resources from the National Environmental Education Foundation (p.)
12 Noon–1:30 PM	6–C	Room 222, Conv. Ctr.	<i>Water Quality with Vernier</i> (p. 100)
12:30–1:30 PM	E–M	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: Voices from the Classroom (p. 103)
12:30–1:30 PM	M	Room 357, Conv. Ctr.	It's All Up to You (p. 118)
12:30–1:30 PM	G	Bacchus, NO Marriott	Ocean Diversity Institute: A Model for Environmental and Multicultural Programming (p. 114)
12:30–1:30 PM	E	Room 254, Conv. Ctr.	Global Sustainability Science Connections: Engaging Lessons for the Primary Grades (p. 116)
2:00–3:00 PM	E–M	Room 357, Conv. Ctr.	Footprints: A Guide to Development of the Outdoor Classroom (p. 140)
2:00–3:00 PM	H	Bonaparte, NO Marriott	High School Students Monitoring Weather Hazards from Space (p. 135)
2:00–3:00 PM	G	Jackson, NO Marriott	Kids Teaching Kids Climate Change with Hands-On Demos (p. 136)
2:00–3:00 PM	H	La Galerie 5, NO Marriott	There's a Dead Fish in the Middle of the Pond, and It's Stinking to High Heaven (p. 142)
2:00–2:30 PM	I	Carondelet/Gp. 4, NO Marr.	Informal Science Day Session: Bringing the Outside In: A Closer Look at Informal Learning Institutions and Their Role in the Science Classroom (p. 135)
2:00–3:00 PM	E	Room R01, Conv. Ctr.	Choose Your Superpower: Exploring Energy Sources (p. 140)
2:00–3:00 PM	H	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: Voices from the Classroom (p. 132)
2:00–3:00 PM	M	Windsor, Hilton	Siemens "We Can Change the World Challenge" (p. 134)
2:00–3:00 PM	G	Napoleon A3, Sheraton	The Fairchild Challenge: Competitive, Multi-disciplinary Environment Education (p. 137)

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3:30–4:30 PM	M–H	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: Climate Resources for Teachers and Students (p. 159)
3:30–4:30 PM	6–12	Room 219, Conv. Ctr.	Tough Topics in Environmental Science: Field Data Collection (p. 164)
3:30–4:30 PM	E	Room R01, Conv. Ctr.	Bazaar Science Explorations (p. 161)
3:30–4:30 PM	H	Room 239, Conv. Ctr.	Teaching Environmental Science with Case Studies: Agriculture and Renewable Energy (p. 153)
3:30–4:30 PM	M-H/I	La Galerie 5, NO Marriott	Art and Writing Connections in Science (p. 162)
4:00–4:30 PM	M–H	Bonaparte, NO Marriott	Virtual Scat: Using Blogs and Conferencing Tools to Engage Students in Scientific Inquiry (p. 157)
3:30–4:30 PM	M-H/I	Room 253, Conv. Ctr.	Good Bugs, Bad Bugs: Water Quality and Population Sampling (p. 159)
3:30–4:30 PM	G	Room 238, Conv. Ctr.	Sharing the Spirit of Stewardship: Writing Green for Kids (p. 153)
3:30–4:30 PM	M	Room 357, Conv. Ctr.	Where Will all the Polar Bears Go? (p. 160)
4:00–5:30 PM	6–8	Room 236, Conv. Ctr.	The JASON Project: Connecting Students with Great Explorers and Great Events (p. 170)
5:00–6:00 PM	G	Bonaparte, NO Marriott	Connecting Classrooms to the Community (p. 176)
5:00–6:00 PM	M–H	Room 256, Conv. Ctr.	Sally Ride Science/NOAA/U.S. Forest Service Symposia Follow-up Session: Earth’s Carbon Cycle and Ocean Acidification (p. 173)
5:00–6:00 PM	G	Room 238, Conv. Ctr.	Saving Our Coast, Our Communities, and Our Homes (p. 173)
5:00–6:00 PM	E–H	Room 242, Conv. Ctr.	Storycaching GLOBE: iPods, GPS, Data and the GLOBE Project (p. 173)
5:00–6:00 PM	M/I	Room 357, Conv. Ctr.	Writing for Communicating and Understanding Ecology Field Experiences in Middle School (p. 174)
5:00–6:00 PM	G	Bacchus, NO Marriott	How to Succeed at Grant Writing for Funding Opportunities from NOAA (p. 175)
5:00–6:00 PM	M–H	La Galerie 5, NO Marriott	Mapping Environmental Quality with a Geographic Information System (GIS): Exploring the Environmental Sustainability Index (ESI) for Countries Across the World (p. 180)
5:30–6:00 PM	G	Bonaparte, NO Marriott	Socialization of Wolf Pups at the International Wolf Center (p. 176)
5:00–6:00 PM	G	Napoleon D3, Sheraton	The Lionfish Invasion! What It Is and How to Teach About Invasive Species in Your Classroom (p. 177)

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8:00–9:00 AM	G	Rosalie, JW Marriott	Professional Development Providers: What You Should Know and Be Able to Do, Part (p. 26)
8:00–9:00 AM	E-M/I	Room 345, Conv. Ctr.	Students Who Choose to Study Science: Diversity and Informal Learning (p. 21)
8:00–9:00 AM	G	Room R02, Conv. Ctr.	Using Humor to Enhance Scientific Literacy (p. 23)
8:00–9:00 AM	E	Room R06, Conv. Ctr.	Get Parents Involved in the Classroom! (p. 24)
8:00–9:00 AM	I	Salon 828, Sheraton	Introducing STEM Careers Through Online Multimedia Resources (p. 30)
8:00–9:00 AM	G	Room 240/241, Conv. Ctr.	Boston Public Schools: A Science Education Leadership Story (p. 19)
8:30–9:00 AM	M–H	Bayside A, Sheraton	Using White Boards to Promote Student Discourse and Learning (p. 28)
8:00–9:00 AM	G	La Galerie 6, NO Marriott	NSTA Press Session: A Head Start On Science (p. 33)
8:00–9:00 AM	G	Room 355, Conv. Ctr.	Enhancing Science Instruction and Literacy with Quality Nonfiction Trade Books, Related Resources, and Investigations (p. 22)
8:00–9:00 AM	M–H	Edgewood A/B, Sheraton	Multimedia Tools to Engage and Inspire the Digital Student (p. 28)
8:00–9:00 AM	S	Jackson, NO Marriott	Formative Assessment Strategies for Decision Making (p. 28)
8:00–9:00 AM	G	Magnolia, Hilton	Models of Nanoscale Phenomena: Seeing What We Can't See (p. 24)
8:00–9:00 AM	G	Windsor, Hilton	SEPA: We Want You to Become a Presidential Awardee (p. 33)
8:00–9:00 AM	E	Room R04, Conv. Ctr.	Teaching Climate Change in the Elementary Classroom (p. 23)
8:00–9:00 AM	E–M	Room 351, Conv. Ctr.	Exploring Winter Ecology with Elementary Students (p. 22)
8:00–9:00 AM	G	Ascot, Hilton	Using Digital Media in the Science Classroom (p. 24)
8:00–9:00 AM	E–H	Oak Alley, Hilton	Science Models: Connecting Hands On to Minds On (p. 32)
8:00–9:00 AM	G	Ile de France II, JW Marr.	NSTA Student Chapter Faculty Advisor Roundtable (p.)
8:00–8:30 AM	M	Room 345, Conv. Ctr.	Acting Like a Scientist in an Urban Setting (p. 26)
8:00–8:30 AM	E–M	Room 344, Conv. Ctr.	Capturing Students' Interest in the Nature of Science Through Discrepant Events (p. 21)
8:00–9:00 AM	E–M	Room 343, Conv. Ctr.	Teaching Tools That Work! (p. 32)
8:00–9:00 AM	G	Versailles Blrm., Hilton	Using the Superpower of Rap Music to Teach Science (p. 25)
8:30–9:00 AM	M	Room 344, Conv. Ctr.	Mysteries and Antiquities: Process Skills in Archaeological Inquiry (p. 21)
8:00–8:30 AM	M–H	Bayside A, Sheraton	Sticky Notes and Student Identification of Variables in Science Investigations (p. 28)

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8:00–9:00 AM	G	Carondelet/Gp. 1, NO Marr.	Informal Science Day Session: Science in After-School Programs (p. 27)
8:00–9:00 AM	G	Carondelet/Gp. 3, NO Marr.	Informal Science Day Session: Content on the Go: Science Education Podcasting (p. 25)
8:40–9:00 AM	C	Frontenac, JW Marriott	SCST Session: Rockin’ ‘n’ Rollin’ in New York City—How This City Is Influenced by the Earth Sciences (p. 25)
8:00–9:00 AM	G	Room 338, Conv. Ctr.	FHL Pathway Session: After-School Science for Kids (p. 20)
8:00–9:00 AM	G	Room 346, Conv. Ctr.	McREL Pathway Session: Student-designed Experiments (p. 21)
8:00–9:00 AM	M–H	Room 337, Conv. Ctr.	LHS Pathway Session: Integrating Sustainability into the Science Classroom (p. 20)
8:00–9:00 AM	G	Room 341, Conv. Ctr.	WestEd Pathway Session: Lesson Study as a Professional Learning Community: The Teaching Learning Collaborative (TLC) (p. 21)
8:00–9:00 AM	G	Room 242, Conv. Ctr.	ISTE: Emerging Technologies in the Science Classroom (p. 20)
8:00–9:00 AM	G	Conde, JW Marriott	Building Partnerships to Improve Teacher Quality and Student Outcomes: The Cleveland Math and Science Partnership (p. 25)
8:00–9:00 AM	G	Room 238, Conv. Ctr.	Developing a Position Statement for Science and English Language Learners (ELL) (p. 18)
8:00–9:00 AM	H	Napoleon B2, Sheraton	Using Assessment to Improve Learning: Effective Marking (p. 34)
8:00–9:15 AM	3–8	Room 208, Conv. Ctr.	Put Some Spark into Science Investigations (p. 35)
8:00–9:30 AM	K–8	Room 220, Conv. Ctr.	The Heart of Science Teaching: INQUIRY, INQUIRY, INQUIRY! (p. 38)
8:00–9:30 AM	7–10	Room 213, Conv. Ctr.	Inquiry Investigations™ Forensics Science Curriculum Module and Kits (p. 37)
8:00–9:30 AM	G	Room 214, Conv. Ctr.	The Private Eye®: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 37)
8:00–9:30 AM	C	Room 207, Conv. Ctr.	The U.S. Department of Energy Makes Government Research Accessible Online (www.osti.gov) (p. 36)
8:00–9:30 AM	1–8	Room 211, Conv. Ctr.	Fun and Games That Help Improve Test Scores! (p.)
8:00–9:30 AM	7–12	Room 202, Conv. Ctr.	Science Kit Presents: Hands-On Activities with a Hydrogen Fuel Cell Car (p. 36)
8:00–9:30 AM	K–12	Room 225, Conv. Ctr.	Get Your Green On (p. 39)
8:00–9:30 AM	K–5	Room 217, Conv. Ctr.	Math Out of the Box®—Measuring Success! (p. 38)
8:00–9:30 AM	G	Room 347, Conv. Ctr.	NGS Pathway Session: Connecting Students to Real-World Science Issues with National Geographic’s Online Resources (p. 36)

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8:00–10:00 AM	G	Room 348, Conv. Ctr.	SC Pathway Session: Coaching Basics That Promote Reflective Practice in Science (p. 41)
8:00–10:00 AM	E	Room 335, Conv. Ctr.	EDCi Pathway Session: The Art of Talk and the Power of the Circle (p. 41)
8:00–10:00 AM	G	Room 333, Conv. Ctr.	BSCS Pathway Session: Can Inquiry Lead to Content Deepening? (p. 40)
8:00–10:00 AM	M–H	Room 336, Conv. Ctr.	EDCm Pathway Session: Helping Beginning Secondary Science Teachers: Research-based Suggestions for Experienced Teachers and Administrators (p. 41)
8:00–10:00 AM	G	Room R08/R09, Conv. Ctr.	CESI Session: Make and Take Extravaganza! (p. 41)
8:00–11:00 AM	E–H	Room 342, Conv. Ctr.	HRI Pathway Session: Knowing What They Know: Transferring the Item-writing Workshop to Your School/District, Part 1 (p. 42)
8:30–9:30 AM	G	Room 352, Conv. Ctr.	Featured Panel: <i>Science for All Americans</i> at Twenty—From Vision to Action (p. 44)
8:30–9:30 AM	G	Acadia, NO Marriott	Teacher Researcher Day Session: Poster Session for Teachers and Teacher Educators Inquiring into Science Learning and Teaching (p. 45)
8:30–11:30 AM	5–8	Room 209, Conv. Ctr.	Using Science Notebooks with FOSS Middle School Courses (p. 45)
9:30–10:30 AM	G	Salon 828, Sheraton	Join a Manuscript Review Panel for an NSTA Journal (p. 60)
9:30–10:30 AM	M–H	Napoleon D1&2, Sheraton	Scale the Universe with GLAST (p. 68)
9:30–10:30 AM	G	Jasperwood, Hilton	Use Scaffolded Inquiry to Build Science Literacy (p. 64)
10:00–10:30 AM	G	Elmwood, Hilton	Engineers Can Do Anything! (p. 50)
9:30–10:30 AM	G	Room 242, Conv. Ctr.	ISTE: Using Technology to Break the Traditional Mold of a Laboratory Report (p. 48)
9:30–10:30 AM	G	Ile de France II, JW Marriott	NSTA Student Chapter Action Session (p. 53)
9:30–9:50 AM	C	Frontenac, JW Marriott	SCST Session: A Theoretical Basis for the Use of Alternative Texts in Nature of Science (NOS) Instruction (p. 52)
9:30–10:00 AM	G	Elmwood, Hilton	FIRST: Changing Attitudes...Changing the Future (p. 50)
9:30–10:30 AM	M–H	Edgewood A/B, Sheraton	Self-Reflection and SATIC Coding: Improving Your Interactions with Students (p. 57)
9:30–10:30 AM	G	Room 353, Conv. Ctr.	NMLSTA Session: Say It with Clay (p. 50)
10:00–10:30 AM	G	Orleans, JW Marriott	The SCI-CARE Project: A Sustainable Collaboration to Improve Content, Assessment, Reflection, and Efficacy of Science Teachers (p. 54)
9:30–10:30 AM	M	Room 345, Conv. Ctr.	Wheels, Windmills, and Water (p. 62)
9:30–10:30 AM	G	Oak Alley, Hilton	<i>Design Squad</i> : Engineering Projects, Energizing Kids (p. 64)

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9:30–10:30 AM	G	La Galerie 6, NO Marriott	CSSS Session: Advancing Science as Inquiry: Professional Development Tools You Can Use (p. 66)
9:30–10:30 AM	G	Regent, NO Marriott	Aquaculture 101: How to Build a Basic System (and What to Do with It) (p. 56)
9:30–10:00 AM	E–H	Conde, JW Marriott	Relevant Research Can Be a Slam Dunk! (p. 52)
9:30–10:30 AM	H–C	Maurepas, JW Marriott	A Perspective from 54 Years of Science Teaching Experience (p. 54)
9:30–10:30 AM	G	Napoleon Blrm., Hilton	Presidential Awardee Share-a-Thon of Favorite Inquiry Lessons (p. 50)
9:30–10:30 AM	P–M	Room 343, Conv. Ctr.	Differentiation Made Easy! Using Learning Contracts in the Classroom (p. 49)
9:30–10:30 AM	E	Room R06, Conv. Ctr.	Integrating Science into Literacy and Math (p. 50)
9:30–10:30 AM	G	Versailles Blrm., Hilton	Digitize Your Classroom (p. 52)
9:30–10:30 AM	M–H	Napoleon B2, Sheraton	True Inquiry or Guided Inquiry...That Is the Question! (p. 68)
9:30–10:30 AM	E	Room R04, Conv. Ctr.	Growing Seeds to Implement Inquiry and Teaching Standards (p. 64)
9:30–10:30 AM	G	La Galerie 5, NO Marriott	No Child Left Behind and Science Education: What's Next? (p. 56)
9:30–10:30 AM	G	Room 252, Conv. Ctr.	AOA Session: Strategies and Resources That Enhance the Science Learning of Students from Underrepresented Groups (AMSE) (p. 48)
9:30–10:30 AM	E–H	Room 253, Conv. Ctr.	AoA Session: Web 2.0—Just What Is It? (NMLSTA) (p. 49)
9:30–10:30 AM	G	Rosalie, JW Marriott	Professional Development Providers: What You Should Know and Be Able to Do, Part 2 (p. 54)
9:30–10:30 AM	G	Carondelet, NO Marriott	Informal Science Day Session: What Are You Doing to Celebrate Science in 2009? (p. 47)
9:30–10:30 AM	E–H	Room 237, Conv. Ctr.	Toyota TAPESTRY Grants for Science Teachers = \$\$\$ for Your School (p. 47)
10:00–10:30 AM	G	Conde, JW Marriott	Combining Classroom Time and Lab Time Doubles the Science Learning (p. 52)
9:30–10:30 AM	G	Room 355, Conv. Ctr.	Engaging K–8 Science Students with Hands-On Investigations and Inquiry Supported by Science Literacy Skills and Quality Resources (p. 62)
9:30–10:30 AM	P–M	Room 344, Conv. Ctr.	Mathnificent Scientific Experience, Part 1 (p. 61)
9:30–10:30 AM	P/E/S	Room 357, Conv. Ctr.	Head Start on Science (p. 62)
9:30–10:00 AM	G	Orleans, JW Marriott	UB Excelsior Scholars Program: A Collaborative Model for 21st-Century STEM Literacy (p. 54)
10:00–10:30 AM	M–H/I	Bayside A, Sheraton	Being What You Can Become! (p. 56)
9:30–10:30 AM		Jackson, NO Marriott	Super Science for Special Education Teachers: A Professional Learning Community Journey (p. 56)
9:30–10:30 AM	M–H	Bayside A, Sheraton	Bringing Science Research to the Urban Community (p.56)
9:30–10:30 AM	E	Room R07, Conv. Ctr.	Building the Science as Inquiry Literacy Bridge in Grades 4–6 (p. 64)

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9:30–11:00 AM	G	Room 346, Conv. Ctr.	McREL Pathway Session: Addressing Student Misconceptions (Preconceptions) (p. 72)
9:30–11:00 AM	G	Acadia, NO Marriott	Teacher Researcher Day Featured Presentation: Lenses for Looking at Video of Science Teaching and Learning (p. 72)
9:30–11:30 AM	G	Room 341, Conv. Ctr.	WestEd Pathway Session: A Professional Learning Community Strategy: Rubric Development/ Feedback Loops (p. 73)
9:30 AM–12 Noon	M–H	Ascot, Hilton	NSTA Multicultural/Equity in Science Education Division: Enabling Students to Learn Science (p. 73)
10:00–11:15 AM	1–6	Room 208, Conv. Ctr.	Integrating Science and Literacy: Grades 1–6 (p. 4)
10:00–11:30 AM	K–8	Room 220, Conv. Ctr.	STEM: Activity Options for the Elementary and Middle Grades Science Classroom (p. 76)
10:00–11:30 AM	9–12	Room 221, Conv. Ctr.	New Editions of <i>Physical Science</i> and <i>Integrated Science</i> (p. 76)
10:00–11:30 AM	G	Room 225, Conv. Ctr.	How to Get the Science Room You Want and Need! (p. 76)
10:00–11:30 AM	K–4	Room 214, Conv. Ctr.	Elementary Super! Wow! Neat! Science by Ron Perkins (p. 75)
10:00–11:30 AM	7–10	Room 213, Conv. Ctr.	Introducing Inquiry Investigations™: Hands-On Inquiry Activities Focusing on Technology (p. 75)
10:00–11:30 AM	6–12	Rooms 204/205, Conv. Ctr.	Literacy Strategies in the Sciences (p. 74)
10:00 AM–12 Noon	G	Windsor, Hilton	Teaching Controversial Topics in the Classroom: Dissecting the Louisiana Science Education Act (p. 78)
10:30–11:30 AM	M	Room 252, Conv. Ctr.	AoA Session: 21st-Century Skills (NMLSTA) (p. 80)
10:30 AM–12 Noon	3–C	Room 211, Conv. Ctr.	How Safe Is Your Lab? (p. 81)
10:30 AM–12:30 PM	G	Room 348, Conv. Ctr.	SC Pathway Session: The Secret Lives of Science Coaches (p. 82)
11:00 AM–12 Noon	G	Room 253, Conv. Ctr.	AOA Session: 21st-Century Skills (AMSE) (p. 83)
11:00 AM–12 Noon	I	Carondelet/Gp. 1, NO Marr.	Informal Science Day Session: The Perfect Place for Science Education—Out of School (p. 89)
11:00 AM–12 Noon	G	Carondelet/Gp. 3, NO Marr.	Informal Science Day Session: Online Games as Learning Tools (p. 90)
11:00 AM–12 Noon	G	Carondelet/Gp. 2, NO Marr.	Informal Science Day Session: Bridging the Gap Between Everyday and Scientific Explanations of Evolution (p. 89)
11:00 AM–12 Noon	G	Room 350, Conv. Ctr.	UNV Pathway Session: Science Notebooks for English Language Learners (p. 84)
11:00 AM–12 Noon	S	Room 342, Conv. Ctr.	HRI Pathway Session: Knowing What They Know: Transferring the Item-writing Workshop to Your School/District, Part 2 (p. 83)
11:00 AM–12 Noon	G	Room 242, Conv. Ctr.	ISTE: What Should Administrators Know and Be Able to Do with Technology in the Science Classroom? (p. 82)

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FRI	11:00 AM–12 Noon	E–H	Acadia /Gp. 4, NO Marr.	Teacher Researcher Day Session: Student Learning in Your Classroom: Developing a Research Project (p. 89)
	11:30 AM–12 Noon	M–H	Bayside A, Sheraton	Analysis of Bears, Glaciers, and Mountain Goats: Using GIS to Develop Environmental and Ecological Awareness (p. 91)
	11:00 AM–12 Noon	G	Salon 828, Sheraton	Write from the Start (p. 93)
	11:00 AM–12 Noon	G	Magnolia, Hilton	See the Light with a Math and Science Family Night! (p. 86)
	11:00 AM–12 Noon	M–C	Maurepas, JW Marriott	Constructivist Science: Thinking Inside and Outside the Box of Prior Conceptions (p. 87)
	11:00 AM–12 Noon	H/S	Jackson, NO Marriott	Secret to Urban AP Success (p. 90)
	11:00 AM–12 Noon	M–C	La Galerie 6, NO Marriott	Almost Magic...Counterintuitive and Abracadabra Discrepant Events (p. 91)
	11:30 AM–12 Noon	G	Acadia/Gp. 2, NO Marriott	Teacher Researcher Day Session: Teacher Development Through Classroom-based Research (p. 88)
	11:00 AM–12 Noon	G	Room 355, Conv. Ctr.	How We Create K–6 Classrooms That Embrace Science Inquiry: Helping Students Think and Work As Scientists (p. 84)
	11:30 AM–12 Noon	G	Acadia/Gp. 3, NO Marriott	Teacher Researcher Day Session: A Partnership for Learning About Elementary Science Teaching (p. 89)
	11:00–11:30 AM	G	Acadia/Gp. 3, NO Marriott	Teacher Researcher Day Session: Using Teacher Research to Strengthen Science Teaching and Learning (p. 89)
	11:30 AM–12 Noon	G	Elmwood, Hilton	Promoting Happiness in Science Classrooms: Implications for Achievement and Subjective Well-Being (p. 86)
	11:30 AM–12 Noon	E–M	Room 344, Conv. Ctr.	Engaging Gifted and High-ability Learners in Science: Using Problem-solving Skills and Innovative Technologies (p. 84)
	11:00–11:30 AM	G	Elmwood, Hilton	Augmented Reality: Games That Teach and Inspire (p. 86)
	11:00 AM–12 Noon	G	Room 240/241, Conv. Ctr.	Empowering Elementary Teachers to Teach and Do Science (p. 82)
	11:00 AM–12 Noon	E/S	Regent, NO Marriott	Making the Transparent Visible: Using Video Analysis to Reveal the Expert Decision Making of Elementary Teachers During Science Talks (p. 91)
	11:00 AM–12 Noon	P/E	Room R07, Conv. Ctr.	CESI Session: Teaching Nature of Science to Young Children (p. 95)
	11:00 AM–12 Noon	M–H	Frontenac, JW Marriott	ASTE Session: The Role of Life Experience in an Alternative Math and Science Teacher Preparation Program (ACT!) (p. 87)
	11:00 AM–12 Noon	E	Room R04, Conv. Ctr.	Using Student Interactive Notebooks to Enhance Hands-On Instruction (p. 95)
	11:00 AM–12 Noon	E–M	Room 353, Conv. Ctr.	NMLSTA Session: Let’s Explore Middle Level Heredity, Microorganisms, and Space (p. 94)

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11:00–11:30 AM	M–H	Bayside A, Sheraton	Sea Perch: Underwater Robotics for Middle Schoolers (p. 91)
11:00 AM–12 Noon	E–H	Rosalie, JW Marriott	What If...? Creativity Applied to Science (p. 88)
11:00 AM–12 Noon	G	Jasperwood, Hilton	Science Gnus (p. 95)
11:00–11:30 AM	G	Orleans, JW Marriott	Causal Patterns in Density and Ecosystems: Teacher Professional Development Website (p. 87)
11:00 AM–12 Noon	P/E	Room R05, Conv. Ctr.	Elementary Inquiry Labs: They May Not Be Rocket Science, But They May Provide Our Next Generation of Rocket Scientists! (p. 86)
11:00 AM–12 Noon	C	Ile de France II, JW Marr.	Motivating College Students to Be Science Teachers: Starting an NSTA Student Chapter (p.87)
11:00 AM–12 Noon	E/C	Room R06, Conv. Ctr.	First-Grade Science Original Trade Books Illustrated and Written by Elementary Teacher Candidates? How and Why Did They Do That? (p. 95)
11:00 AM–12 Noon	H–C	Conde, JW Marriott	STEM Transitions: Enhancing Mathematics and Science Rigor Through Evidence-based Curriculum Projects (p.)
11:00 AM–12 Noon	H	Napoleon B2, Sheraton	Demystifying Electrophoresis (p. 86)
11:00 AM–12 Noon	P–M	Room 345, Conv. Ctr.	A Christmas Science Show: A Student NSTA Outreach (p. 84)
11:00 AM–12 Noon	M	Room 344, Conv. Ctr.	The Apple Mummy Meets FLI (RIP) (p. 84)
11:30 AM–12 Noon	G	Orleans, JW Marriott	A Collaborative Professional Development Approach Integrating Science with Art and Literacy in the Elementary Classroom: Practice Becomes Research; Research Becomes Practice (p. 87)
11:00 AM–12 Noon	M–H	Edgewood A/B, Sheraton	The Department of Energy’s Academy for Creating Teacher Scientists: It’s Worth Every Penny...and They Give Them All to You! (p. 91)
11:30 AM–12 Noon	G	Rosalie, JW Marriott	Incorporating the Nature of Science Throughout the Entire School Year (p. 88)
11:00 AM–12 Noon	G	Oak Alley, Hilton	Accessibility (p. 95)
11:00 AM–12 Noon	E-M/I	Room 351, Conv. Ctr.	Using <i>FIRST</i> Lego League to Promote Global Awareness Through Robotics (p. 84)
11:00 AM–12 Noon	G	Room 237, Conv. Ctr.	Attention Science Teachers and Administrators! Learn How to Win \$\$\$\$ by Winning One of Many NSTA Awards! (p.82)
11:00 AM–12 Noon	G	Versailles Blrm., Hilton	Lab Investigations as a Social Justice Issue: It’s as Easy as ABC (Activity Before Concept) (p. 86)
11:00 AM–12 Noon	E	Room 239, Conv. Ctr.	Reduce, Reuse, Recycle: How Sustainable Engineering Relates to Energy-related Challenges (p. 94)
11:30 AM–1:00 PM	G	Room 243, Conv. Ctr.	Shell Science Seminar: Understanding the Katrina Castastrophe with the Help of Computer Models (p. 100)

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11:30 AM–1:00 PM	G	Room 346, Conv. Ctr.	McREL Pathway Session: Designing Effective Science Instruction: Scientific Discourse in the Classroom (p. 101)
12 Noon–12:30 PM	G	Acadia, NO Marriott	Teacher Researcher Day Session: Science Inquiry Group Network (p. 101)
12 Noon–1:30 PM	9	Room 231, Conv. Ctr.	Forensic Science for High School: An Inquiry-rich Curriculum (p. 104)
12 Noon–1:30 PM	K–5	Room 236, Conv. Ctr.	Student Success with Inquiry (p. 105)
12 Noon–1:30 PM	K–6	Room 227, Conv. Ctr.	<i>What Do You Know About That!</i> Strategies, Activities, and Motivating Materials for Reinforcing Students' Science Knowledge Before the Standardized Test (p. 104)
12 Noon–1:30 PM	K–5	Room 220, Conv. Ctr.	Reading Informational Text: Strategies for Connecting Science and Literacy with Content Readers (p. 103)
12 Noon–1:30 PM	4–9	Room 235, Conv. Ctr.	Science Tests and Learning: Science Textbook Reading Is Not the Same as Literature Reading (p. 105)
12 Noon–1:30 PM	5–12	Room 210, Conv. Ctr.	Light and Optics (p. 102)
12 Noon–1:30 PM	4–8	Room 214, Conv. Ctr.	Middle School Super! Wow! Neat! Science by Ron Perkins (p. 102)
12 Noon–2:00 PM	G	Carondelet, NO Marriott	Informal Science Day Session: What We Know About Learning Science in Informal Environments: Conclusions and Recommendations from the National Academies (p. 108)
12:30–1:30 PM	G	Room 237, Conv. Ctr.	Stand and Deliver! How to Present at NSTA Conferences (p. 109)
12:30–1:30 PM	M	Room 343, Conv. Ctr.	Project-based Science for Students with Special Needs (p. 111)
12:30–1:30 PM	E–M	Acadia/Gp. 2, NO Marriott	Teacher Researcher Day Session: Effective Use of Performance Assessment in Scientific Inquiry (p. 113)
1:00–1:30 PM	H	Bayside A, Sheraton	Nontraditional Grading in a Traditional Environment (p. 114)
12:30–1:30 PM	E/S	Regent, NO Marriott	Elementary Instructional Coaching: Science and Literacy Join Forces! (p. 114)
12:30–1:30 PM	G	Acadia/Gp. 3, NO Marriott	Teacher Researcher Day Session: Using Classroom Inquiry to Explore Student Learning and Motivation (p. 113)
12:30–1:30 PM	M–C	Orleans, JW Marriott	It's Not Too Early: Finding Tomorrow's Science Teachers Today (p. 112)
12:30–1:30 PM	H	Acadia/Gp. 1, NO Marriott	Teacher Researcher Day Session: Reading Strategies for New Teachers by New Teachers (p. 113)
12:30–1:30 PM	M	Room 345, Conv. Ctr.	Using Informational Timelines (p. 117)
12:30–1:30 PM	H/S	Jackson, NO Marriott	The Boston Team Evolves into a Cohort of Urban Science Leaders (p. 114)

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12:30–1:30 PM	H	Edgewood A/B, Sheraton	Preparing Students for Success in College Science (p. 115)
12:30–1:30 PM	G	Rosalie, JW Marriott	Teacher-Scientist Partnerships—Everyone Benefits! (p. 113)
12:30–1:30 PM	G	Room 240/241, Conv. Ctr.	What Works in Teaching Science: A Meta-Analysis of Current Research (p. 110)
12:30–1:30 PM	G	Magnolia, Hilton	What Does Technology Integration Look Like in the Science Classroom? (p. 112)
12:30–1:30 PM	G	Jasperwood, Hilton	Exploring National Park Resources Right in Your Classroom (p. 118)
12:30–1:30 PM	G	Elmwood, Hilton	From YouTube to YouThink: Using Multimedia for Elaboration and Evaluation of Students' Thinking About STEM (p. 112)
12:30–1:30 PM	P	Room R01, Conv. Ctr.	Big Explorations for Preschoolers from PBS's <i>Curious George</i> and <i>PEEP and the Big Wide World</i> (p. 118)
12:30–1:30 PM	G	Oak Alley, Hilton	Maximizing Quality Instructional Time: How to Make Every Minute Count (p. 118)
12:30–1:30 PM	E	Room R04, Conv. Ctr.	Forget About the Three R's... Just Teach Science! (p. 111)
12:30–1:30 PM	G	Room R07, Conv. Ctr.	CESI Session: Creativity and Variety in the Science Classroom (p. 111)
12:30–1:30 PM	M–H	Napoleon B2, Sheraton	Enhancing STEM Education Through University and Community Partnerships (p. 119)
12:30–1:30 PM	G	Versailles Ballroom, Hilton	Forensic Technology: An I-STEM Curriculum (p. 112)
12:30–1:00 PM	M–H	Bayside A, Sheraton	Science Notebooking for High School Students (p. 114)
12:30–1:30 PM	E–M	Room R05, Conv. Ctr.	Wonderful Wikis: Powerful Web Tools for the Elementary Science Classroom (p. 111)
12:30–1:30 PM	E–H	Windsor, Hilton	Great Googling: Developing Exciting Science Units Using Google Groups (p. 112)
12:30–1:30 PM	E–M	Room 344, Conv. Ctr.	Teacher Objective: A Better Student Scientist (and an Easier Job!) (p. 117)
12:30–1:30 PM	5–8	Room 212, Conv. Ctr.	Coordinated Science for the Physical, Earth, and Space Sciences (p. 120)
12:30–1:30 PM	M–H	Room 337, Conv. Ctr.	LHS Pathway Session: Using Issues as a Context for Teaching Science Content and Inquiry (p. 110)
12:30–1:30 PM	E–M	Room 338, Conv. Ctr.	FHL Pathway Session: Consider the Evidence—Using Student Journals to Drive Instruction (p. 110)
12:30–1:30 PM	G	Acadia/Gp. 4, NO Marriott	Teacher Researcher Day Session: Documenting Student Success (p. 113)
12:30–1:30 PM	G	Room 242, Conv. Ctr.	ISTE: For Teachers by Teachers: The Cogs Website and NASA's Virtual Lab (p. 110)
12:30–1:30 PM	E–M	Room 336, Conv. Ctr.	EDCm Pathway Session: Research on Science Mentoring (p. 117)

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12:30–2:00 PM	G	Room 350, Conv. Ctr.	UNV Pathway Session: Here’s a Doable Approach to Differentiation: Strategies for ELL (p. 121)
12:30–2:30 PM	E–H	Ascot, Hilton	NSTA Urban Science Education Leadership Network Presents...Analyzing Policies That Affect Students in Urban School Settings (p. 122)
12:30–2:30 PM	G	Room 341, Conv. Ctr.	WestEd Pathway Session: A Professional Learning Community Strategy: Conceptual Flow to Map Content (p. 122)
12:30–3:30 PM	E–H	Room 342, Conv. Ctr.	HRI Pathway Session: Knowing What They Know: Analyzing Student Work to Reveal Student Thinking (p. 123)
1:00–2:00 PM	G	Room 252, Conv. Ctr.	ESP Symposium I: Exemplary Science Lessons in Grades PreK–4 (p. 123)
1:00–2:15 PM	1–8	Room 208, Conv. Ctr.	Working as One with Hands and Minds (p.124)
1:00–2:30 PM	3–6	Room 209, Conv. Ctr.	FOSS Assessment: Valuing Academic Progress in Grades 3–6 (p. 124)
1:00–2:30 PM	7–10	Room 213, Conv. Ctr.	Inquiry Investigations™ Biotechnology Curriculum Modules and Kits (p. 124)
1:00–2:30 PM	E	Southdown, Sheraton	DuPont Session: DuPont Presents—Connecting Science and Mathematics Literacy (p. 124)
1:30–2:00 PM	G	Acadia/Gp. 1, NO Marriott	Teacher Researcher Day Session: Lesson Study as a Pathway for Reflection, Professional Development, and Building Collegiality (p. 125)
1:30–2:00 PM	G	Acadia/Gp. 4, NO Marriott	Teacher Researcher Day Session: Engaging Prospective Teachers in Integrating Physics and Literacy Learning (p. 126)
1:30–2:00 PM	M–H	Acadia/Gp. 3, NO Marriott	Teacher Researcher Day Session: Multivariate Analysis of Student Attitude, Motivation, and Predictors of Success in Secondary Science (p. 126)
1:30–3:00 PM	G	Room 352, Conv. Ctr.	Shell Science Seminar: Expanding Hubble’s Vision (p. 128)
1:30–3:00 PM	6–C	Room 211, Conv. Ctr.	Using Technology in Your Science Classroom: How to Really Hook Your Students (p. 129)
2:00–3:00 PM	G	Room 244/245	AGU Lecture: The Grand Isle Project: Using Service Learning to Generate Genuine Scientific Experiences for Students While Serving Society (p.130)
2:00–3:00 PM	G	Room 252, Conv. Ctr.	ESP Symposium II: Exemplary Science Programs in Grades 9–12 (p. 131)
2:00–3:00 PM	G	Napoleon Blrm., Hilton	Outstanding Science Trade Books’ Connections to Reality by Presidential Awardees (p. 141)
2:00–3:00 PM	G	Room 242, Conv. Ctr.	ISTE: For Teachers by Teachers: NASA Brings a Standards-based Shuttle (p. 132)
2:00–3:00 PM	G	Acadia, NO Marriott	Teacher Researcher Day Session: How to Conduct Action Research in the Science Classroom (p. 142)

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2:00–2:30 PM	C	Frontenac, JW Marriott	SCST Session: Research in Teaching: An SCST Forum (p. 134)
2:30–3:00 PM	C	Frontenac, JW Marriott	SCST Session: Science Educators and the Quest for Promotion and Tenure (p. 134)
2:00–3:00 PM	G	Carondelet/Gp. 3, NO Marr.	Informal Science Day Session: Web 2.0 for Science: Examples of Participatory Tools for Science Learning (p. 135)
2:00–3:00 PM	G	Carondelet/Gp. 1, NO Marr.	Informal Science Day Session: Ultimate Science Education Partnerships (p. 135)
2:00–2:30 PM	E–H	Versailles Blrm., Hilton	Hollywood Science: Using Movies in Your Classroom (p. 134)
2:00–3:00 PM	E/C	Maurepas, JW Marriott	K–6 Science Trade Books Illustrated and Written by Elementary Teacher Candidates? How and Why Did They Do That? (p. 142)
2:00–3:00 PM	M–H	Room 239, Conv. Ctr.	Alternative Energy Sources: Inquiry-based Activities for Science Classrooms (p. 131)
2:00–3:00 PM	P–M	Room 254, Conv. Ctr.	Inquiry—Not Always Fair! (p. 139)
2:00–3:00 PM	E	Room 238, Conv. Ctr.	Step Up to a Symphony of Science (p. 138)
2:00–2:30 PM	M–H	Bayside A, Sheraton	Science, Schoolyards, and Statistics: Using the Schoolyard to Gather Authentic Data (p. 136)
2:30–3:00 PM	G	Magnolia, Hilton	Science for ALL Students! (p. 133)
2:00–3:00 PM	E–M	Room 344, Conv. Ctr.	Igniting Students' Interests in Science Careers (p. 139)
2:00–3:00 PM	E	Room R06, Conv. Ctr.	A Symbiotic Relationship: Science Inquiry and Language Arts Increase Student Understanding (p. 141)
2:00–3:00 PM	E	Room R05, Conv. Ctr.	K–5 Formative Assessment Strategy Harvest (p. 132)
2:30–3:00 PM	G	Versailles, Hilton	Beyond the Veil: Fostering Reflective Practice with New Tools for Digital Video Analysis (p. 134)
2:00–3:00 PM	G	Orleans, JW Marriott	Project PRiSE: Persistence Research in Science and Engineering (p. 134)
2:00–3:00 PM	G	Room R08/R09, Conv. Ctr.	It's All in the Family: Hosting Family Science Celebrations at Your School and in Your Community (p. 141)
2:00–3:00 PM	G	Oak Alley, Hilton	What Is Technological Literacy? (p. 141)
2:00–3:00 PM	H	Edgewood A/B, Sheraton	Make Scientific Thinking Happen in the High School Classroom (p. 136)
2:00–2:30 PM	G	Magnolia, Hilton	Building an Inclusive Science Class (p. 133)
2:00–3:00 PM	E–M	Room 345, Conv. Ctr.	The Outdoor Class Study Area: An Integrated Learning Experience (p. 139)
2:00–3:00 PM	G	Jasperwood, Hilton	Out of the Classroom: Adapting Inquiry-based Instructional Materials to Informal Educational Settings (p. 141)
2:30–3:00 PM	H	Bayside A, Sheraton	An Interdisciplinary Project of <i>The World Without Us</i> (p. 136)

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2:00–3:00 PM	P-M/I	Room R07, Conv. Ctr.	CESI Session: Dumbledore’s Transfiguration Class: Science and Magic from Hogwarts Academy (p. 133)
2:00–3:00 PM	S	Regent, NO Marriott	The NSTA Learning Center: Free Classroom Resources and Professional Development for Educators and More! (p. 136)
2:00–3:30 PM	9–12	Room 220, Conv. Ctr.	WOW! Realistic High School Laboratory Simulations You Have to See to Believe! (p. 146)
2:00–3:30 PM	9–12	Room 224, Conv. Ctr.	AP* Science with Vernier (p. 146)
2:00–3:30 PM	K–8	Room 217, Conv. Ctr.	Effective Science Materials Support Systems (p. 146)
2:00–3:30 PM	K–12	Room 232, Conv. Ctr.	Ocean Resources—From Energy to the Environment K–12 (p. 147)
2:00–3:30 PM	7–C	Room 202, Conv. Ctr.	WARD’s Presents: A Potpourri of Forensic Science Ideas (p. 144)
2:00–3:30 PM	9–12	Room 214, Conv. Ctr.	High School Super! Wow! Neat! Physics and Chemistry by Ron Perkins (p. 145)
2:00–3:30 PM	9–12	Room 235, Conv. Ctr.	The Case of the Kidnapped Tamarin Monkey—Did You Do It? (p. 148)
2:00–4:00 PM	E	Room 335, Conv. Ctr.	EDCi Pathway Session: Writing in Science Using Firsthand Data (p. 148)
2:00–4:00 PM	G	Room 348, Conv. Ctr.	SC Pathway Session: Science Coaches Networking Forum (p. 149)
2:00–5:00 PM	G	Room 333, Conv. Ctr.	BSCS Pathway Session: Classroom Inquiry: A Tool for Reflection (p. 149)
2:30–3:00 PM	G	Conde, JW Marriott	A Teacher-Scientist Partnership Model for Professional Development (p. 150)
3:00–3:30 PM	G	Acadia, NO Marriott	Teacher Researcher Day Session: Teacher Inquiry Groups: Learning About Learning (p. 150)
3:00–4:00 PM	G	Room 252, Conv. Ctr.	ESP Symposium III: Exemplary Science Programs: Best Practices in Professional Development (p. 151)
3:00–4:30 PM	7–10	Room 213, Conv. Ctr.	A Closer Look at Biology, Chemistry, and Earth Science Virtual Labs (p. 152)
3:30–4:00 PM	G	Ascot, Hilton	Swimming in Digital Waters: Schooling Digital Natives Through Disruptive Technology (p. 152)
3:30–4:30 PM	G	Room 243, Conv. Ctr.	Robert H. Carleton Lecture: It’s a New Day for Science Education Leadership: Stories Published and Unpublished Inform Our Future (p. 153)
3:30–4:30 PM	S	Regent, NO Marriott	NSTA Press Session: Professional Development: Using Trends, Practices, and Research to Strengthen Science Teaching and Learning (p. 157)
3:30–4:30 PM	E–M	Room 344, Conv. Ctr.	Toy Design: Engineering in Disguise (p. 160)
3:30–4:30 PM	E/S	Acadia/Gp. 4, NO Marriott	Teacher Researcher Day Session: Science in the First Year: The Use of Narratives to Develop a Professional Stance of Teaching Science (p. 156)

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3:30–4:30 PM	M–H	Acadia/Gp. 1, NO Marriott	Teacher Researcher Day Session: Teacher as Researcher: Formal Presentations of Teachers' Research (p. 156)
3:30–4:30 PM	G	Magnolia, Hilton	NSTA Press Session: Help! Is the Safety Doctor in the House? (p. 155)
3:30–4:30 PM	M-H/S	Jackson, NO Marriott	How to Get the Most Out of Mentoring: For New Teachers (p. 157)
3:30–4:30 PM	E–M	Room 242, Conv. Ctr.	Lights! Action! Science! (p. 159)
3:30–4:30 PM	E–M	Room 355, Conv. Ctr.	Read a Good Science Book Lately? Science and Literature—What a Great Mix! (p. 160)
4:00–4:30 PM	C	Conde, JW Marriott	Setting Up Blended Online Courses a Nibble at a Time (p. 156)
3:30–4:30 PM	H	Napoleon B2, Sheraton	Using Robotics to Model and Monitor Energy Processes (p. 163)
3:30–4:30 PM	P/E	Room R06, Conv. Ctr.	Technology Turf Tidbits: Elementary Plant Investigations Through Technology (p. 161)
3:30–4:30 PM	G	Orleans, JW Marriott	The National Academies: Teacher Advisory Council (p. 156)
3:30–4:30 PM	G	Room 240/241, Conv. Ctr.	Guiding Preservice Teachers' Development of Meaningful Science Investigations for Preschool (p. 154)
3:30–4:30 PM	G	Jasperwood, Hilton	Welcome to the Science Café! Casual + Spontaneous = Effective (p. 162)
3:30–4:00 PM	C	Conde, JW Marriott	Exploring the Interaction Between Technology and Humanity (p. 155)
3:30–4:30 PM	M–H	Napoleon B1, Sheraton	Antarctica—From the Air, on the Land, and in the Seas (p. 163)
3:30–4:30 PM	E–M	Room 343, Conv. Ctr.	Don't Forget the Science: High-Interest, High-Quality Children's Books Provide a Path to Integrating Science and Literacy into Standards-based Curriculum (p. 154)
3:30–4:30 PM	G	Oak Alley, Hilton	<i>The New York Times</i> , CNN, and the Nature of Science (p. 162)
3:30–4:30 PM	E–M	Room R02, Conv. Ctr.	Inquiry-based Integrated Approach in Teaching Science (p. 161)
3:30–4:30 PM	E	Room R05, Conv. Ctr.	What's Math Got to Do with It? (p. 161)
3:30–4:30 PM	P/E	Room R08/R09, Conv. Ctr.	<i>Science and Children</i> Share-a-Thon (p. 155)
3:30–4:30 PM	G	Ile de France III, JW Marr.	ASTE Session: Literacy Maps, Search Strategies, and Teacher-reviewed Content (p. 162)
3:30–4:30 PM	M–H	Southdown, Sheraton	DUPONT Session: Wow! That's Engineering?
3:30–4:30 PM	G	Rosalie, JW Marriott	Reaching for the Sky: STEM Outreach and Indigenous Knowledge (p. 164)
3:30–4:30 PM	E–H	Elmwood, Hilton	Science Buddies: Free Online Tools for High-Quality Science Fair Projects (p. 156)
3:30–4:30 PM	E	Room R04, Conv. Ctr.	Debunking Desert Misconceptions (p. 154)

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3:30–4:30 PM	G	Belle Chasse, Hilt. NO Rvsd.	Nature of Science and the Black Box Phenomenon (p. 155)
3:30–4:30 PM	E-M/I	Room 354, Conv. Ctr.	Spice Up Your Curriculum with a Little “Fresh and Salt” (p. 160)
3:30–4:30 PM	M	Room 345, Conv. Ctr.	Connecting Your Students to Authentic Scientific Research (p. 154)
3:30–4:30 PM	5–8	Room 209, Conv. Ctr.	Introduction to Planet FOSS for Middle School (p. 164)
3:30–4:30 PM	M–H	Edgewood A/B, Sheraton	Learning Theory Research to Practice in the Science Classroom (p. 157)
3:30–4:30 PM	G	Room 347, Conv. Ctr.	NGS Pathway Session: What Every Science Teacher Should Know About Geography But May Be Afraid to Ask (p. 154)
3:30–4:45 PM	6–12	Room 218, Conv. Ctr.	Technology and National Board Certification for Accomplished Teachers (p. 165)
3:30–5:00 PM	G	Room 346, Conv. Ctr.	McREL Pathway Session: Designing Effective Science Lessons: Helping Students Think Scientifically (p. 165)
4:00–5:30 PM	G	Rooms 204/205, Conv. Ctr.	How to Supplement Your Lessons with <i>NOVA</i> , <i>Zoom</i> , and other Teachers’ Domain Digital Media Resources For Your Classroom (p. 167)
4:00–5:30 PM	3–5	Room 235, Conv. Ctr.	Educational Gaming in Science: Shifting the Paradigm (p. 169)
4:00–5:30 PM	K–3	Room 202, Conv. Ctr.	I Didn’t, Who Did? (p. 167)
4:00–5:30 PM	9–12	Room 226, Conv. Ctr.	Just Released! New IIHS Car Crash Video—Perfect for Integrating the Sciences (p. 168)
4:00–5:30 PM	G	Room 214, Conv. Ctr.	The Private Eye®: Hands-On Inquiry for an Interdisciplinary Mind—Science, Writing, and Art (p. 167)
4:00–5:30 PM	3–9	Room 228, Conv. Ctr.	From the Field: Igniting a Passion for Science (p. 169)
4:00–5:30 PM	6–8	Room 227, Conv. Ctr.	Engaging Inquiry Activities for Middle School (p. 168)
4:00–5:30 PM	K–12	Room 231, Conv. Ctr.	Teach Overseas—International Schools Services (ISS) (p. 169)
4:00–6:00 PM	G	Room 252, Conv. Ctr.	ESP Symposium IV: Exemplary Science Programs on Inquiry (p. 170)
4:00–6:00 PM	G	Carondelet, NO Marriott	Informal Science Day Session: Informal Science Education Share-a-Thon (p. 171)
4:30–5:00 PM	G	Acadia, NO Marriott	Teacher Researcher Day Session: Fostering Teacher Researcher Collaborations (p. 172)
5:00–5:30 PM	P/E	Room R07, Conv. Ctr.	Education in the Humane Treatment of Animals: Building Conscientious Decision-making Skills (p. 172)

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5:00–6:00 PM	G	Rosalie, JW Marriott	The El Paso Collaborative and Ysleta ISD: How the Math/Science Partnership Transformed Teachers into Instructional Leaders (p.175)
5:00–6:00 PM	M-H/I	Southdown, Sheraton	Hurricanes Katrina and Rita Geographical Reality Check: Thinking About Scale (p. 181)
5:30–6:00 PM	H–C	Conde, JW Marriott	EPICS (Engineering Projects in Community Service) (p. 175)
5:00–5:30 PM	M	Room 344, Conv. Ctr.	How Do I Integrate Technology into My Middle School Science Classroom? (p. 174)
5:00–6:00 PM	M	Room 239, Conv. Ctr.	NSTA Press Session: Scaffolding Inquiry and Language for English Learners (p. 173)
5:00–6:00 PM	E–M	Room 355, Conv. Ctr.	Successfully Integrating Science, Math, and Art Instruction (p. 178)
5:00–6:00 PM	E–M	Room 345, Conv. Ctr.	Fun Activities with Gel Polymers to Enhance Any Science Class (p. 178)
5:00–6:00 PM	P/E	Room R05, Conv. Ctr.	Puppets, Writing, and Elementary Science: A Terrific Trio (p. 179)
5:00–6:00 PM	M-H/I	Rhythms I, Sheraton	Celebrating African American Scientists and Inventors Through Live Science Demonstrations (p. 177)
5:00–6:00 PM	E–H	Oak Alley, Hilton	Teaching Science to Students with Visual Impairments (p. 179)
5:00–5:30 PM	H-C/I	Conde, JW Marriott	Frontiers of Science in Your Classroom (p. 174)
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5:00–6:00 PM	E	Room R06, Conv. Ctr.	Observation: The First Required Skill in Inquiry Science (p. 179)
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8:00–9:00 AM	E	Room R03, Conv. Ctr.	Animating with Mechanisms (p. 32)
8:00–9:00 AM	M	Room 357, Conv. Ctr.	Opening the Gateway: Teaching Digital Natives Using an Integrated Approach (p. 22)
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8:00–9:00 AM	6–9	Room 212, Conv. Ctr.	Active Physical Science (p. 35)
8:00–8:20 AM	C	Frontenac, JW Marriott	SCST Session: Inquiry Physics Learning + Service = Service Learning (p. 25)
8:00–9:30 AM	6–12	Rooms 204/205, Conv. Ctr.	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 36)
9:30–10:30 AM	6–12	Room 218, Conv. Ctr.	Tough Topics in Physics: Conservation of Energy (p. 70)
9:30–10:30 AM	H	Salons 825 & 829, Sheraton	Using Inquiry and Modeling to Study Electrical Resistance (p. 60)
9:30–10:30 AM	P/E	Room R03, Conv. Ctr.	Reading and Rocket Science (p. 50)
9:30–10:30 AM	H	Salons 816 & 820, Sheraton	Avoiding the Black Box: Using Low- and High-Tech Approaches in Inquiry (p. 69)
9:30–10:30 AM	M	Room 354, Conv. Ctr.	NASA: Ready-made Earth and Space Science Lessons from the THEMIS and FAST Missions (p. 62)
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12 Noon–1:30 PM	K–2	Room 217, Conv. Ctr.	The <i>Zula Patrol</i> ® Exploration Station—Mission: Simple Machines! (p. 102)
12 Noon–1:30 PM	4–8	Room 225, Conv. Ctr.	Safety Smart Science (p. 103)

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12:30–1:30 PM	6–12	Room 218, Conv. Ctr.	Tough Topics in Physics: Ohm's Law (p. 121)
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12:30–1:30 PM	P/E	Room R03, Conv. Ctr.	The Little Science Teacher That Could: Teaching Physical Science Through Children's Literature (p. 111)
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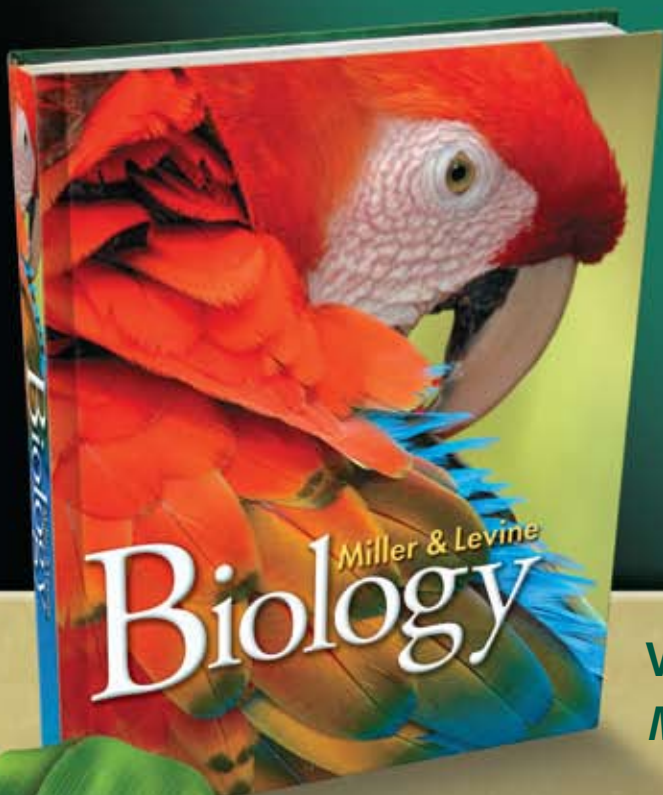
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