

Celebrating the Joy of Science

San Francisco

3

Sat., March 12
Sun., March 13

NSTA National
Science
Teachers
Association

2011 National Conference on Science Education

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Mimio Workshop Sessions—Room 274/276

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Saturday, March 12, 2011

Show Me The Money: Learn the Tips and Tricks to Grant Funding	8:00 AM – 9:00 AM	Magen McGahee Grant and Federal Programs Specialist
Using Interactive Classroom Technologies to Advance STEM Learning for Elementary Students	9:30 AM – 10:30 AM	Isa Kaftal Zimmerman, Ed.D Member, Massachusetts Governor's STEM Advisory Council
Using Interactive Classroom Technologies to Advance STEM Learning for Secondary Students	11:00 AM – 12:00 PM	Isa Kaftal Zimmerman, Ed.D Member, Massachusetts Governor's STEM Advisory Council
Quality Interactive Science Lessons Part 1: What to Look For	12:30 PM – 1:30 PM	Lois Page Curriculum Consultant for Market Development Alyssa Porter Interactive Content Leader
Quality Interactive Science Lessons Part 2: How to Create It <i>Hands-On Technology Playground Session</i>	2:00 PM – 3:00 PM	Lois Page Curriculum Consultant for Market Development Alyssa Porter Interactive Content Leader
Engaging Students in Science Through Interactive Teaching Tools	3:30 PM – 4:30 PM	Shelia Woerner Technology Consultant for Professional Development Training

Visit mimio.dymo.com/a16 for complete workshop descriptions and contest rules.



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Hartford, CT
October 27–29, 2011

Theme: Science Inspiring Growth

Strands:

- From the Roots to the Fruits of STEM
- Sustainability: Green Is Growing!
- Integrating Literacy: Cross-pollinating the Curriculum

New Orleans, LA
November 10–12, 2011

Theme: Science—Eye on Our Future

Strands:

- Crafting a College-ready and Career STEM Workforce for the Future
- Leveraging Multidimensional Resources to Enhance 21st-Century Learning
- Sustaining Science Success for All Students

Seattle, WA
December 8–10, 2011

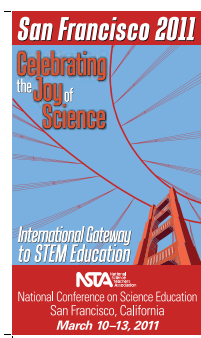
**Theme: Science—
For All, For Now, Forever**

Strands:

- Effective Science Instruction for Diverse Learners
- Progressions in the Learning of Science
- STEM Connections: Fostering Life, Career, and College Readiness

For more information or to register, visit www.nsta.org.

NSTA National
Science
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NSTA 59th National Conference on Science Education

San Francisco, California • March 10–13, 2011

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National Science Teachers Association

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www.nsta.org

Cover Photo

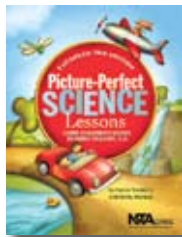
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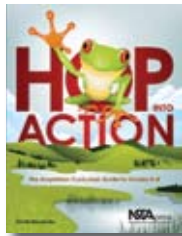
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Using Children's Books to Guide Inquiry, 3-6

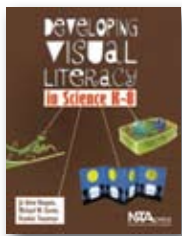
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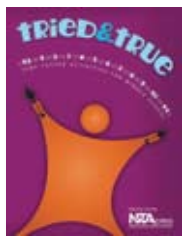
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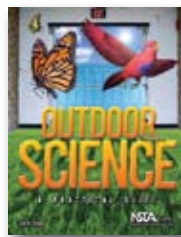
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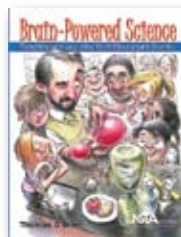
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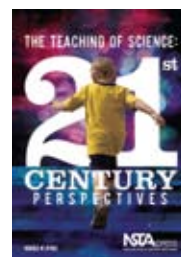
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NSTApress
National Science Teachers Association

—Photo courtesy of California Academy of Sciences



California Academy of Sciences, see *Special Offers Vol. 1, page 23.*

Mission Statement

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

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

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Sunday, March 13

7:00–9:00 AM NSTA Life Members’ Buffet Breakfast: Celebrate Your Lifetime Dedication (M-13) 111

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

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



Embracing Technology in the 21st-Century Classroom

Effective classrooms require the tools and resources necessary to be technologically rich environments. Professional development is required to maintain educators' awareness and understanding of available and appropriate technology and its effective use for student learning. The understanding and use of technology are critical components of STEM education. This strand will promote the awareness, understanding, and appropriate use of technology in preK–12 and community college classrooms, vocational schools, and informal science programs to support the development of workplace skills.



Accessing Language Through Science and Mathematics Content

This strand will feature expert practitioners, researchers, informal science educators, and educational leaders who will share successful practices, conceptual and practical frameworks, and proven models for improving literacy achievement through science and mathematics. Sessions will focus on the contextualized use of academic language and include strategies for improving reading comprehension, writing, and scientific discourse. Strategies should be inclusive of all students, including advanced learners, English language learners, special needs students, and students that are economically disadvantaged. Accessing language through science and mathematics can also occur outside classrooms through informal settings such as science museums and after-school, Saturday, and summer enrichment and recreation programs.



Exploring Earth, Wind, and Fire

Educators must have substantial content knowledge in order to teach Earth system sciences effectively. In order to examine their own misconceptions and ways of thinking, educators need concrete examples that support their understanding of Earth science content. This strand will focus on providing science educators with the knowledge and understanding to effectively teach Earth system science within the context of the following: geology, astronomy, meteorology, global climate change, ecology, space, geophysics, and sustainability.



Building Scientific Minds: Inspiring Teaching and Effective Learning

Science classroom practice and informal science experiences should be grounded in research in science education and cognitive psychology. Key developments, such as national and state science standards, Science Anchors, and workplace skills for the 21st century, deserve wide-scale application in science programs. Teachers and science education leaders need model approaches to implementing research findings in science programs and teaching/learning strategies.

Embracing Technology in the 21st-Century Classroom

Saturday, March 12

8:00–9:00 AM

Bring Your Teaching into the 21st Century with Web 2.0 Tools and Other Technologies

8:00–11:00 AM

Short Course: Bringing Nanotechnology into the Classroom (By Ticket: SC-15)

9:30–10:30 AM

Virtual Labs in the Earth Sciences: Melting Ice, Warming Climate, and Ballooning Through the Stratosphere

12:30–1:30 PM

Cyber Enabled Earth Exploration (CE³) Science Curriculum Project

1:00–4:00 PM

Short Course: Create Your Own Interactive Whiteboard (By Ticket: SC-21)

2:00–3:00 PM

Investigating Supernova Remnants

3:30–4:30 PM

Now Even Middle School Students Can Learn Spectroscopy!

Sunday, March 13

9:30–10:30 AM

Explore the Chemistry Education Digital Library

Accessing Language Through Science and Mathematics Content

Saturday, March 12

8:00–9:00 AM

On the Prairie: Ecological Approaches to Language and Mathematics

8:00–11:00 AM

Short Course: Accessing Science Through Language, Reading, and Writing (By Ticket: SC-16)

9:30–10:30 AM

Integrating Science and Literature: Promoting a Bright Future for Every Child

11:00 AM–12 Noon

Integrating Science Literacy and English Literacy in the K–12 Science Classroom: Benefits for Deaf, Hard of Hearing, and Hearing Students

12:30–1:30 PM

“What Do You Think?” The Use of Blogging as a Scientific Literacy Tool

How Do We Know? Improving Scientific Understanding Through Reading

2:00–3:00 PM

Building Student Science Inquiry: Authoring Your Own Science Literature Book

3:30–4:30 PM

Nature Books: The Natural Way to Link Science, Math, and Literacy

5:00–6:00 PM

Science Literacy: Using Examples and Nonexamples

Exploring Earth, Wind, and Fire

Saturday, March 12

8:00–9:00 AM

Fun with Flames: A Safe Way to Teach Fire Sciences

8:00 AM–3:00 PM

Short Course: 2011: NASA’s Year of the Solar System (By Ticket: SC-18)

9:15 AM–2:45 PM

Field Trip: Hands-On Outdoor Experience Makes Science Come Alive (By Ticket: S-2)

9:30–10:30 AM

The Composition of the Atmosphere

11:00 AM–12 Noon

Fossils: Where Biology and Geology Intersect

12:30–1:30 PM

Taking Earth Science One Step Further: Harnessing Sun and Wind Energy

2:00–3:00 PM

We’re All in This Together: Watersheds and You!

3:30–4:30 PM

Basic Weather

5:00–6:00 PM

The Ups and Downs of Convection

Building Scientific Minds: Inspiring Teaching and Effective Learning

Saturday, March 12

8:00 AM–12 Noon

Short Course: Young Investigators in Environmental Health Science: Challenging and Exciting Your Students with Novel, Inquiry-based Environmental Activities (By Ticket: SC-17)

8:30 AM–12:30 PM

Field Trip: Scientist for a Day on the *Robert G. Brownlee* (By Ticket: S-1)

9:30–10:30 AM

Incorporating Problem Based Learning and Creativity in Integrated Science Classrooms: An International Perspective

9:45 AM–2:15 PM

Field Trip: Explore the Exploratorium (By Ticket: S-3)

11:00 AM–12 Noon

Promoting Scientific Creativity in the Chemistry Classroom

12:30–1:30 PM

Scientific Literacy: More Than Just the Facts

12:30–4:30 PM

Field Trip: Scientist for a Day on the *Robert G. Brownlee* (By Ticket: S-5)

2:00–3:00 PM

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

3:30–4:30 PM

Using Open-Source Resources to Engage Students in the Biology Classroom

5:00–6:00 PM

Assessing Inquiry Skills Using Science Notebooks

Sunday, March 13

11:00 AM–12 Noon

Rigor vs. Rhetoric: Teaching Scientific Skepticism

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



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*Division of Academic Outreach &
Continuing Education*

Mississippi State University is an equal opportunity employer.

NESTA Earth and Space Science Resource Day: Earthquake Hazards and Seismology

Saturday, March 12, 7:00 AM–6:30 PM

Meeting Room Hall D, Moscone Center

This jam-packed day of professional development starts with a ticketed breakfast and speaker and finishes with the NESTA Annual Membership meeting. We look forward to seeing you on Saturday, as well as at other scheduled NESTA events on Friday, including our three share-a-thons and Friends of Earth Science Reception.

Saturday, March 12

7:00–8:30 AM NESTA Earth and Space Science
Resource Day Breakfast
Nob Hill A, Marriott
Featured Speaker
Jesse F. Lawrence, Assistant Professor of
Seismology, Stanford University, Stanford,
Calif.
*(This event was available from NESTA by
preregistration only.)*

9:30–10:30 AM NESTA Earthquake Hazards
and Seismology Share-a-Thon

11:30 AM–12:30 PM Advances in Earth and Space Science
Lecture 1: Earthquake Forecasting
in California
Cynthia L. Pridmore, California
Geological Survey, Sacramento

12:30–1:30 PM Advances in Earth and Space Science
Lecture 2: Imaging the Earth Beneath
Our Feet—Pictures of Earthquake-
producing Machinery in the Western U.S.
and Alaska
Gary Fuis, U.S. Geological Survey,
Menlo Park, Calif.

1:30–2:30 PM Advances in Earth and Space Science
Lecture 3: The Tortoise and the Hare—
A Tale of Faults That Creep
Matthew d’Alessio, California State
University, Northridge

3:30–5:00 PM National Earth Science Teachers
Association Rock and Mineral Raffle

5:00–6:30 PM NESTA Annual Membership Meeting

NSTA/SCST College Symposium

*Nanotechnology: An Educational
Symposium Jointly Sponsored by NSTA and SCST*

Saturday, March 12, 9:30 AM–12 Noon

Continental 2, Hilton

Nanotechnology is the understanding and control of matter at dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications. This emerging science encompasses nanoscale science, engineering, and technology. Nanotechnology involves imaging, measuring, modeling, and manipulating matter at this length scale. This symposium will highlight the Tools of Nanotechnology, Nanobiotechnology for Health and Life, Informal Education in Nanotechnology, and

Nanotechnology Curriculum Across Disciplines. *See page 49 for details.*

The NSTA/SCST Nanotechnology Symposium Breakfast and Poster Session (by invitation only) is scheduled prior to the symposium at 7:30–9:30 AM in Continental 4.

Following the symposium, don’t miss the NSTA/SCST College Luncheon (Ticket M-9) from 12 Noon to 1:30 PM.



Ticket C-1 •
\$95, plus conference registration

Tickets, if still available, can be purchased at the Ticket Sales Counter in the NSTA Registration Area. Tickets must be purchased by 5:00 PM on Friday, March 11.

Upon purchase of a ticket, participants may select three breakout sessions that best match their needs and interests.

Highly Effective Science Education: Integrating Science and Emerging Educational Technology in the Science Classroom

A Research Dissemination Conference for K–12 Teachers, Administrators, Professional Development Providers, University Faculty, and Curriculum Specialists (Ticket C-1)

Saturday, March 12, 7:45 AM–3:00 PM *(Breakfast begins at 7:00 AM)*

Yerba Buena Salon 7, Marriott

Research on science teaching and learning plays an important role in improving science literacy, a goal called for in the National Science Education Standards (NRC 1996) and supported by the National Science Teachers Association (NSTA 2003). NSTA promotes a research agenda that is focused on the goal of enhancing student learning through effective teaching practices that connect research and practice. NSTA encourages ALL participants in science education, including K–16 teachers of science and administrators, to recognize the importance of research and assume active roles in research practices.

NSTA Position Statement: The Role of Research on Science Teaching and Learning (adopted September 2010)

The overall objective of this daylong event is to:

- Disseminate current research on K–12 science education to practitioners and policy makers in order to promote its wide application to improve science teaching and student learning;
- Emphasize results that address key issues and concerns: student achievement, teacher retention, scalability, and sustainability;
- Allow teachers and administrators at school and district levels, as well as professional development providers, to learn about the implications of researchers' work for classroom practice and professional development.

Plenary Speakers:

Barbara Lockee, President, Association for Educational Communications and Technology, Professor for Instructional Design and Technology, and Associate Director of Research and Outreach, School of Education, Virginia Tech, Blacksburg

John Burton, Professor for Instructional Design and Technology, School of Education, Virginia Tech, Blacksburg

Agenda

7:00–7:45 AM	Continental Breakfast
7:45–8:00 AM	Welcome and Introductions Zipporah Miller, <i>NSTA Associate Executive Director for Professional Programs and Conferences</i> Francis Q. Eberle, <i>NSTA Executive Director</i>
8:00–8:45 AM	Plenary Session I: <i>From Silent Films to Virtual Worlds: A Historical Look at the Research on Educational Technology</i> Barbara Lockee and John Burton
8:50–10:25 AM	Breakout Block A
10:30 AM–12 Noon	Breakout Block B
12 Noon–12:45 PM	Lunch
12:50–2:20 PM	Breakout Block C
2:25–3:00 PM	Plenary Session II: <i>Reflection and Discussion</i> Barbara Lockee and John Burton

Highly Effective Science Education: Integrating Science and Emerging Educational Technology in the Science Classroom

Breakout Session C-2

(Yerba Buena Salon 2)

Integrating Connective Technology and Earth Boxes into Middle School Science Curricula

Pamela Fraser-Abder and **Robert Wallace**, New York University, New York, N.Y.

Paul Jablon, Lesley University, Cambridge, Mass.

Erik Ramírez Ruiz, National Council for Community and Education Partnerships México, Monterrey Nuevo León

Amy McMillen, Food and Agriculture Organization of the United Nations, Washington, D.C.

Breakout Session C-3

(Yerba Buena Salon 3)

The NASA Electronic Professional Development Network (ePDN): Online Professional Development Courses for Teachers

Meltem Alemdar, **Michael Ryan**, and **Jeff Rosen**, Center for Education Integrating Science, Mathematics, and Computing (CEISMC), Georgia Institute of Technology, Atlanta

Tony Docal, Orbit Education, Inc., Roswell, Ga.

Breakout Session C-4

(Yerba Buena Salon 4)

Science in the “Clouds”: Exploring the Integration of Cloud-computing Tools Within Inquiry-based Science Instruction and Professional Development Settings

Joel D. Donna, University of Minnesota, Minneapolis

Brant G. Miller, University of Idaho, Moscow

Breakout Session C-5

(Yerba Buena Salons 2 and 5)

Moonbase Alpha: A NASA Serious Game

Daniel Laughlin, NASA Learning Technologies, Washington, D.C.

Breakout Session C-6

(Yerba Buena Salon 6)

Teaching “Evolution Readiness” to Fourth-Graders: Does Technology Help?

Linda Lacy, North Kansas (Mo.) City Schools
Chad Dorsey, **Paul Horwitz**, and **Carolyn Staudt**, The Concord Consortium, Concord, Mass.

Laura O’Dwyer, Boston College, Chestnut Hill, Mass.

Breakout Session C-7

(Yerba Buena Salon 10)

Adding Value to Instruction with Strategic Use of Online Collaboratives

Laurie Ruberg, **Debra C. Burkey Piecka**, and **Manetta Calinger**, Wheeling Jesuit University, Wheeling, W.Va.

Breakout Session C-8

(Yerba Buena Salon 11)

Linking Student Achievement, Teacher Professional Development, and the Use of Inquiry-based Computer Models in Science

Daniel Damelin, The Concord Consortium, Concord, Mass.

Breakout Session C-9

(Yerba Buena Salon 12)

The Virtual Populations Genetics (VPG) Simulation System: An Example of Learning “with” Cyber-enabled Technologies in Science Classrooms

Aaron M. Duffy, **Todd Campbell**, and **Paul G. Wolf**, Utah State University, Logan

Breakout Session C-10

(Yerba Buena Salons 1 and 3)

Professional Development Programs Employing Geospatial Technologies and Problem-based Instruction to Promote Scientific Inquiry

Lori Rubino-Hare, **Jennifer Claesgens**, and **Kristi Fredrickson**, Northern Arizona University Center for Science Teaching and Learning, Flagstaff

Breakout Session C-11

(Yerba Buena Salon 5)

Teaching Spatial Literacy Through Geospatial Technologies in the Science Curriculum

Rita A. Hagevik, **Patty Stinger-Barnes**, and **Jessica Horton**, The University of Tennessee, Knoxville

Breakout Session C-12

(Yerba Buena Salons 4 and 11)

Effective Use of Technology in Modeling-based Inquiry Science Education

Jana Bouwma-Gearhart and **Andrew Bouwma**, University of Kentucky, Lexington
Sarah Adumat, University of Wisconsin–Madison

Breakout Session C-13

(Yerba Buena Salons 6 and 12)

What Do Engineers Really Do and How Can I Make It Work in My Classroom?

Ann P. McMahon, K–16 STEM Education Consultant and Professional Developer, and Doctoral Candidate in Science Education, University of Missouri–St. Louis

Breakout Session C-14

(Yerba Buena Salons 3 and 10)

Hands-On Workshop: Using Mobile Learning Devices for Science Education in K–12

Cathie Norris, University of North Texas, Denton

Elliot Soloway, University of Michigan, Ann Arbor

Breakout Session C-15

(Yerba Buena Salon 13)

Online Professional Development: Applying What the Research Says for Effective Learning

Al Byers, Assistant Executive Director, e-Learning and Government Partnerships, NSTA, Arlington, Va.

Breakout Session C-16

(Yerba Buena Salon 1)

Focus On Diagnostic Formative Assessment and Associated Tools

Jim Minstrell, FACET Innovations, Seattle, Wash.

Angela DeBarger and **Bill Penuel**, SRI International, Menlo Park, Calif.

NSTA Press Sessions

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

Saturday, March 12

8:00–9:00 AM

Stop Faking It! Finally Understand FORCE and MOTION So You Can Teach It (page 26)

Predict, Observe, Explain: Activities Enhancing Scientific Understanding (page 26)

9:30–10:30 AM

Girls in Science—A Framework for Action (page 40)

Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It (page 44)

11:00 AM–12 Noon

Stop Faking It! Finally Understand LIGHT and SOUND So You Can Teach It (page 60)

Using the National Science Facilities Standards to Plan and Design Your School Science Classroom/Laboratory (page 60)

12:30–1:30 PM

Putting the Science into Your PLC: Tools for Professional Learning (page 70)

Designing Effective Science Instruction (page 73)

2:00–3:00 PM

Get the FACTS: Formative Assessment Classroom Techniques (page 80)

Developing Visual Literacy in Science, K–8 (page 84)

2:00–6:00 PM

Lecture-Free Teaching: A Learning Partnership Between Science Educators and Their Students (By ticket: SC-22) (page 89)

3:30–4:30 PM

Uncovering Student Ideas in Physical Science: Force and Motion (page 91)

Uncovering Student Ideas with *Everyday Science Mysteries* (page 95)



NSTA Avenue Sessions

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

Saturday, March 12

11:00 AM–12 Noon

Spirit of Innovation Teacher Orientation

The Centers for Ocean Sciences Education Excellence (COSEE) Program

Saturday, March 12, 8:00 AM–5:00 PM

Willow, Marriott

Since 2002, the Centers for Ocean Sciences Education Excellence (COSEE) have worked to increase understanding of the ocean and its relevance to society. Primarily funded through the National Science Foundation, the COSEE network promotes partnerships between research scientists and educators, disseminates high-quality ocean sciences education resources, and promotes ocean science as a charismatic vehicle for learning at any age. COSEE sessions will highlight activities and products designed for classroom science teachers. Walk away with links to real-time data, relevant scientific resources, lesson plans, information on regional programs, and connections to a nationwide network of scientists and educators who are dedicated to improving ocean literacy. A list of COSEE events follows. See the Saturday daily program (Vol. 3) for details.

8:00–9:00 AM	The Role of Discourse as Students Make Meaning of Science Concepts
9:00–10:00 AM	Linking the Ocean to the Classroom
10:00–11:00 AM	Satellites, Sounds, and Storms: Using Satellite Data and Podcasts to Study Coastal Storms
11:00–11:30 AM	What's That? An Inquiry-based Approach to Squid Dissections
11:30 AM–1:30 PM	COSEE Luncheon (By Invitation Only) Featured Speaker: David Hollander
1:30–2:30 PM	Linking Our Ocean and Climate Through Innovative Learning Connections: Part 1
2:30–3:00 PM	Linking Our Ocean and Climate Through Innovative Learning Connections, Part 2
3:00–3:30 PM	Ocean Observing Systems—Benefits for Teachers and Their Students
3:30–4:30 PM	Linking Physical Science and the Ocean
4:30–5:00 PM	Practical Applications of the Ocean Literacy Principles Scope and Sequence



STUDENT + LAB NOTEBOOK = SUCCESS

Recent studies have found a direct link between success in the classroom and the use of a lab notebook:

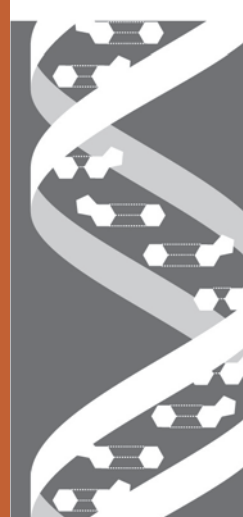
- Clear organization allows students to sharpen their inquiry abilities.
- Notebooks act as a formative assessment tool and enhance the teacher-student relationship.
- Dry-labbing is eliminated; cheating is shut down.
- Easy to track evolving comprehension of scientific concepts and connect large concepts.

Visit us at booth no. 2134 to learn more and to enter our daily drawing to win a free classroom set of lab notebooks!



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Imagine Create Succeed

With Carolina Workshops at the 2011 NSTA National Conference

Imagine science instruction that engages and motivates all students to learn. Create that environment with Carolina's workshops. Our sessions are taught by experienced presenters—classroom teachers, science coordinators serving as teaching partners, and our own staff scientists. Their training in the latest teaching techniques, national standards, and cutting-edge science topics means you'll receive concise, valuable information. See below for sessions, times, and locations (all take place in the Moscone Center).

Let Carolina help you and your students succeed.

Session Schedule

Thursday, March 10, 2011

Time	Location	Grade*	Title
9:30 AM–11:00 AM	Room 120	H	Introduction to Electrophoresis
9:30 AM–11:00 AM	Room 121	H	AUTOPSY: Forensic Dissection Featuring <i>Carolina's Perfect Solution</i> ® Pigs
9:30 AM–11:00 AM	Room 122	E	Get Their Heads into the Clouds—Exploring Space Science with GEMS® Space Science Sequences
11:00 AM–2:00 PM	Room 122	M	Lunch and Learn—Discover a New Inquiry Program for Secondary Schools
11:30 AM–1:00 PM	Room 120	H	Mendelian Genetics with Wisconsin <i>Fast Plants</i> ®
11:30 AM–1:00 PM	Room 121	H	Comparative Mammalian Organ Dissection with <i>Carolina's Perfect Solution</i> ® Specimens
1:30 PM–3:00 PM	Room 120	E, M, H	Hands-On Science with Classroom Critters
1:30 PM–3:00 PM	Room 121	H	Sharing 35 Years of Teaching High School Chemistry—Demos, Tips, and Best Practices
2:30 PM–4:00 PM	Room 122	E	Dive into Ocean Literacy with the New GEMS® <i>Ocean Sciences Sequence for Grades 3–5</i>
3:30 PM–5:00 PM	Room 120	H	Amplify Your Genetics Teaching Skills with Carolina's New <i>Inquiries in Science</i> ® Biology Series
3:30 PM–5:00 PM	Room 121	M, H	Take the Leap: <i>Carolina's Perfect Solution</i> ® Frog Dissection
4:30 PM–5:30 PM	Room 122	E	Flexible Instruction for the 21st-Century Student: The Inquiry Approach to Differentiation

Friday, March 11, 2011

Time	Location	Grade*	Title
7:00 AM–8:30 AM	Room 122	E, M	Next Steps for Science—Science Supervisor Breakfast and Forum
8:00 AM–9:30 AM	Room 120	M, H	Introduction to Protozoa
8:00 AM–9:30 AM	Room 121	H, C	Exploring Feline Anatomy with <i>Carolina's Perfect Solution</i> ® Cats
9:00 AM–10:30 AM	Room 122	E	Swing, Roll, and Spin into STEM in Your Primary Classroom with Building Blocks of Science® (BBS)
10:00 AM–11:30 AM	Room 120	H, C	Exploring Gene Function in <i>C. elegans</i> : Mutations and RNA Interface
10:00 AM–11:30 AM	Room 121	H	Innovative and Engaging Chemistry Labs with Real-World Connections: Discover the <i>Inquiries in Science</i> ® Series
11:00 AM–2:00 PM	Room 122	M	Lunch and Learn—Discover a New Inquiry Program for Secondary Schools
12:00 PM–1:30 PM	Room 120	H, C	Genetics with <i>Drosophila</i>
12:00 PM–1:30 PM	Room 121	E, M	Carolina's Young Scientist's Dissection Series
2:00 PM–3:30 PM	Room 120	H, C	Fast Gels for Fast Times
2:00 PM–3:30 PM	Room 121	H	Need "Energy" in Your Environmental Classes? Learn About Carolina's New <i>Inquiries in Science</i> ® Environmental Science Series
2:30 PM–4:00 PM	Room 122	M	Science Notebooking: Integrating Writing and Science Through Catastrophic Events
4:00 PM–5:30 PM	Room 120	E, M, H	Butterflies in Your Classroom
4:00 PM–5:30 PM	Room 121	H, C	Rats! Inquiry-Based Dissection with <i>Carolina's Perfect Solution</i> ® Specimens
4:15 PM–5:30 PM	Room 122	E	Learning to Read, Reading to Learn: Literacy, Notebooks, and the Power of Inquiry

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



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Carolina's
booth!



See how much fun learning can be!

Saturday, March 12, 2011

Time	Location	Grade*	Title
8:00 AM–9:30 AM	Room 120	H	Strawberry DNA and Molecular Models
8:00 AM–9:30 AM	Room 121	H, C	Think Mink! Exploring Mammalian Anatomy with <i>Carolina's Perfect Solution</i> ® Mink
8:00 AM–9:30 AM	Room 122	E	Don't Forget the M in STEM: A Focus on Literacy in the Math Classroom
10:00 AM–11:30 AM	Room 120	E, M, H	Introduction to Wisconsin <i>Fast Plants</i> ®
10:00 AM–11:30 AM	Room 121	H	Engage Student Inquiry with Carolina's Environmental Science Labs
10:00 AM–11:30 AM	Room 122	E	Don't Forget the M in STEM: A Focus on RTI in the Math Classroom
12:00 PM–1:30 PM	Room 120	H	Infection Detection: An ELISA Simulation for Your Classroom
12:00 PM–1:30 PM	Room 121	M, H	Comparative Vertebrate Anatomy with <i>Carolina's Perfect Solution</i> ® Specimens
12:00 PM–1:30 PM	Room 122	E	Don't Forget the M in STEM: A Focus on Inquiry in the Math Classroom
2:00 PM–3:30 PM	Room 120	H	Forensics for the Biology Laboratory
2:00 PM–3:30 PM	Room 121	H	SQUID INK-UIRY: Inquiry-Based Invertebrate Anatomy Through Squid Dissection
2:00 PM–3:30 PM	Room 122	E	Learning to Read, Reading to Learn: Literacy, Notebooks, and the Power of Inquiry

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The Golden Gate Bridge and Alcatraz Island bask in the moon's milky glow over San Francisco.

Saturday, March 12

	Special Events	General Sessions/Special Events	Shell Seminars	Exhibitor Workshops
8:00 AM	Research Dissemination Conference 7:00 AM–3:30 PM Yerba Buena 7, Marriott Tickets Required (C-1)	Featured Presentation 8:30–10:00 AM 104, Moscone Center Speaker: Bernard A. Harris, Jr.		
9:00 AM				
10:00 AM	Featured Presentation 9:30–10:30 AM 102, Moscone Center Speaker: Ken Roy	NSTA/SCST Symposium on Nanotechnology 9:30 AM–12 Noon Continental 2, Hilton	Shell Science Seminars 10:30 AM–12 Noon 103, Moscone Center Speaker: Ira Flatow 104, Moscone Center Speaker: Helen R. Quinn	
11:00 AM	Special Session 10:00–11:30 AM 310, Moscone Center Speaker: Maria Fadiman			
12 Noon	Paul F-Brandwein Lecture 11:00 AM–12 Noon 102, Moscone Center Speaker: Art Sussman			
1:00 PM				
2:00 PM		NSTA/ASE Honors Exchange Lecture 2:00–3:00 PM 102, Moscone Center Speaker: Jonathan Osborne	Shell Science Seminars 1:30–3:00 PM 103, Moscone Center Speaker: Elizabeth K. Stage 104, Moscone Center Speaker: Eugene Garcia	
3:00 PM				
4:00 PM	NSTA ESP Symposium III 3:30–5:30 PM Continental 2, Hilton	Robert Karplus Lecture 3:30–4:30 PM 102, Moscone Center Speaker: Gerry Wheeler		
5:00 PM				
6:00 PM		Special Evening Session 6:00 PM–12 Midnight Yosemite C, Hilton <i>A Video Showcase of Legendary Icons, Inspiring Teachers, Memorable Performances, and Stimulating, Engaging Courses, Part 3</i>		
7:00 PM				
8:00 PM				

7:00–8:15 AM Breakfast

NSTA Past Presidents' Breakfast

(For NSTA Past Presidents Only)

Yosemite A, Hilton

7:00–8:30 AM NESTA Earth and Space Science Resource Day Breakfast

Bringing a Earthquake Seismology into Your Classroom with the Quake-Catcher Network

(By Ticket Through NESTA)

Nob Hill A, Marriott



Jesse F. Lawrence, Assistant Professor of Seismology, Stanford University, Stanford, Calif.

Join your Earth and space science educator colleagues for this full breakfast with an Earth science education presentation on the Quake-Catcher Network (QCN)

(<http://qcn.stanford.edu>), the largest and fastest-growing seismic network in the world. QCN connects inexpensive seismic sensors to internet-connected computers hosted by individuals and schools. These inexpensive sensors are ideal for teaching concepts related to earthquake seismology. In addition, QCN provides software to help understand how earthquake records relate to the earthquake motion. Come learn how you and your students can become Quake Catchers.

Jesse Lawrence received his Bachelors from University of California, Davis in Economics and a PhD in Earth and Planetary Science from Washington University in St. Louis. In 2007, Jesse became a an assistant professor of Seismology in the Department of Geophysics at Stanford University. Jesse works in the field of structural seismology, particularly as it applies to deep Earth structures and the evolution of continents. Jesse co-leads the Quake-Catcher Network, the world's largest strong-motion seismic network built by connecting inexpensive seismic sensors to volunteer internet-connected computers.

This event was available from NESTA by preregistration only.

Science Area

A science area category is associated with each session. These categories are abbreviated in heavy type at the right immediately following the session title. On page 129, you will find the conference sessions grouped according to their assigned science area category.

The science areas and their abbreviations are:

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

Strands

The San Francisco Conference Committee has planned the conference around the following four strands, enabling you to focus on a specific area of interest or need. Strand events are identified by icons throughout the daily program. For strand descriptions, see page 6.



Embracing Technology in the 21st-Century Classroom



Accessing Language Through Science and Mathematics Content



Exploring Earth, Wind, and Fire



Building Scientific Minds: Inspiring Teaching and Effective Learning

Other Icons

The following icons will be used throughout this program.



Global Conversations in Science Education Conference



NSTA Avenue Sessions



NSTA Press Sessions



Professional Development Institutes

7:00 AM–3:30 PM Research Dissemination Conference

Highly Effective Science Education: Integrating Science and Emerging Educational Technology in the Science Classroom (C-1)

(Tickets Required: \$95) Yerba Buena Salon 7, Marriott
Come experience strategies for integrating the emerging use of technology in science teaching for learning. Increase your confidence in using these tools and take part in dialogue among researchers and practitioners to bring about a better understanding of the content and pedagogy. Click here for complete information. Continental breakfast and box lunch included in ticket price. For description, see pages 10–11.

Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 5:00 PM on Friday.

7:30–9:30 AM Breakfasts

NSTA/SCST Nanotechnology Symposium Breakfast and Poster Session

(By Invitation Only) Continental 4, Hilton
Open to SCST members and college faculty.

AMSE/NSTA Minority Caucus George Washington Carver Breakfast

(By Invitation Only) Club Room, Marriott

8:00–9:00 AM Breakfast

NSTA Recommends Reviewer/Publisher Coffee

(By Invitation Only) Green, Hilton



8:00–9:00 AM Presentations

SESSION 1

Mars Education Student Data Teams (MESDT)

(Earth)

(High School–College/Informal) Golden Gate 1, Hilton
Howard Lineberger (howard.lineberger@da.org), Durham Academy Upper School, Durham, N.C.

Students work alongside scientists, contributing to the science of analyzing Martian data through innovative uses of technology. MESDT has influenced participants to pursue STEM fields.

SESSION 2

Small Children and Inquiry-based Science: A Reggio Emilia Approach

(Gen)

(Preschool–Elementary) Golden Gate 2, Hilton
Bodil Nilsson (bodil.nilsson@mnd.su.se), Stockholm University, Stockholm, Sweden

Let's look at science projects from Reggio Emilia–inspired preschools/schools in Sweden (students ages 2–9). Learn how to start projects from children's own questions, investigations, and theories.

SESSION 3

Science Doesn't End with the Bell

(Env)

(Middle Level) Golden Gate 5, Hilton
Lynne Cherry, Author, Thurmont, Md.

Juliana Texley (jtexley@att.net), Palm Beach State College, Boca Raton, Fla.

Around the world students are becoming activists as they discover *How We Know What We Know About Climate Change*. We'll show you how to build an after-school program around Citizen Science.

SESSION 4

BLOCKS Presents: Let's Talk Dirt!

(Earth)

(Preschool–Elementary) Golden Gate 7, Hilton
Sandy I. Martinez (sandy_ida@yahoo.com) and **Montserrat Garibay** (mgaribay@austinisd.org), Austin (Tex.) Independent School District

Ever wonder what's really going on underground? Join us in a hands-on dig into this underground universe.

SESSION 5

Send Inquiry Skills Soaring with Vinegar and Baking Soda Rockets (Gen)

(Middle Level) Union Square 3/4, Hilton

Michael T. Harms (*michaeltteaches@gmail.com*), Gideon Hausner Jewish Day School, Palo Alto, Calif.

With rockets flying high and *Mythbusters*-style video analysis, learn how baking soda, vinegar, and water bottles can send students' inquiry and data analysis skills soaring!

SESSION 6

Inquiry-based Demonstrations to Grab Students' Interest and Promote Scientific Thinking (Gen)

(Elementary–Middle Level) Union Square 13, Hilton

Sharon A.L. Hushek (*hushekclan@yahoo.com*), Ben Franklin Elementary School, Franklin, Wis.

Kasie Sattler (*kasie.sattler@franklin.k12.wi.us*), Forest Park Middle School, Franklin, Wis.

Spark interest in science and improve scientific thinking and questioning skills using student-led science demonstrations. Handouts.

SESSION 7

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

(College) Union Square 14, Hilton

Howard Wahlberg, Assistant Executive Director, Member, Chapter, and Customer Relations, NSTA, Arlington, Va.

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

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

Starting an NSTA Student Chapter: Faculty & Student Perspectives

**Saturday
March 12**

8:00–9:00 AM

*Hilton San Francisco
Union Square, Union Square 14*

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 advisers on the advantages of starting an NSTA student chapter at your college or university.



SESSION 8

BaySci: A District Science Reform Model (Gen)

(General) *Union Square 17/18, Hilton*
Vanessa B. Lujan (*vlujan@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

Leonor Rebosura, Newark (Calif.) Unified School District

Maureen Vieth, Novato (Calif.) Unified School District

Rachel Jordan, Palo Alto (Calif.) Unified School District

The Exploratorium and Lawrence Hall of Science provide institutional and professional expertise to improve district and teacher capacity, coordination, planning, and science curriculum implementation.

SESSION 9 (two presentations)

(Elementary–Middle Level/College) *Union Square 19/20, Hilton*
Presenter: Heidi Blair, Glenn Westlake Middle School, Lombard, Ill.

Authentic Science Teaching: The Electronic Curriculum (Gen)

Rebecca S. McMahan, Austin Peay State University, Clarksville, Tenn.

Discover a technologically rich environment created by the dynamic activities of 100 WebQuests where content is correlated with NSES standards.

Technology in the Classroom: What Works and What Just Makes You Do More Work (Gen)

Megan R. Elmore (*melmore@sd44.org*) and **Heidi Blair** (*hblair@sd44.org*), Glenn Westlake Middle School, Lombard, Ill.

We have introduced many new toys, gizmos, and software in our classrooms. Come learn what actually worked.

SESSION 10

Science Notebooks: A Journey of Thinking and Understanding (Gen)

(General) *Union Square 21, Hilton*

Lori A. Fulton (*fultola@interact.ccsd.net*), Jay Jeffers Elementary School, Las Vegas, Nev.

Science notebooks can help English language learners develop both science content and language skills.

SESSION 11

Improving Chemical Demonstrations So That All Students Can Learn (Chem)

(General) *Union Square 22, Hilton*

Scott F. Balicki (*sbalicki@gmail.com*) and **Kathleen R. Markiewicz** (*kmarkiewicz@gmail.com*), Boston Latin School, Boston, Mass.

Using the predict, explain, observe, and explain model, chemical demonstrations can be an excellent learning experience for all students.

SESSION 12

Professional Development and Improved Instruction Through Lesson Study (Gen)

(General) *Union Square 25, Hilton*

David L. Radford (*dradford@uab.edu*), The University of Alabama at Birmingham

Urban and rural schools have adapted lesson study to encourage collaboration and improve instruction. Learn how to access free science classroom videos.

SESSION 13 (two presentations)

(Elementary–Middle Level) *Yosemite C, Hilton*

Teaching Causal Complexity in Science: A Professional Development Website for Teachers (Gen)

Therese M. Arsenault (*therese.arsenault@gmail.com*), Harvard Graduate School of Education, Cambridge, Mass.

Discover a website for middle school teachers (and an accompanying guide for professional development coordinators) about teaching complex causal patterns in science and the world beyond.

Conceptual Change (Gen)

Kendra M. Druckenbrod (*kdrucken@kent.edu*), **Lauren A. Roberts**, and **Tori Clark** (*tclark5@kent.edu*), Kent State University at Stark, North Canton, Ohio

Conceptual change lessons involve a pre-test, bridging lesson, content lesson, post-test, and any additional instruction that may be needed. We'll describe the stages and how to create and apply them.

SESSION 14

SYM-2 Follow-Up Session: EPA Climate Change Action Updates (Env)

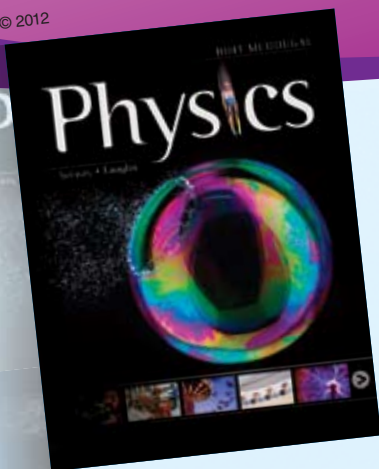
(General) *Golden Gate Salon C2, Marriott*

Erin Birgfeld, U.S. Environmental Protection Agency, Washington, D.C.

Get an update on what the EPA is doing to address the concerns of climate change and highlight new outreach materials on the issue.

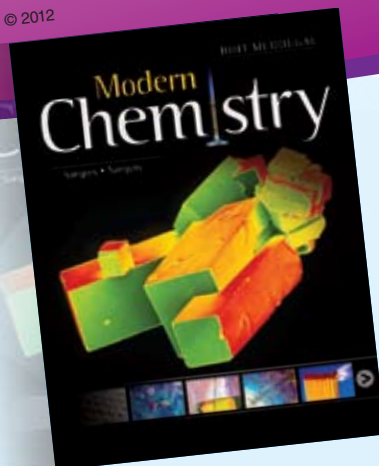
New and Better than Ever

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9-12

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K-8



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New Energy for Science!

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Learn more about these exciting new programs at our workshops:

- Misconception Mania – Exciting and Engaging Ways to Address Common Misunderstandings in K-8 Science with Michael DiSpezzio
 - Biology in the Real World with Dr. Stephen Nowicki
 - Sparking Interest and Learning with Chemistry: A Part 1 Experience with Mickey and Jerry Sarquis
 - Reflections on Teaching Introductory Physics with Raymond Serway
 - 21st Century Literacy for Budding Scientists with Donna Ogle
- And many more...

Check the program or come by our booth (#2200) for workshop times, in-booth signings, and presentations.



SESSION 15

The Thing About Fire Is... (Phys)

(General) *Nob Hill C, Marriott*

Louis B. Rosenblatt (*heylo.r@gmail.com*), Consultant, Baltimore, Md.

For 2,000 years fire was seen as an element, but no longer. What kind of thing is fire? Why? And so what?

SESSION 16

NSF Follow-Up Session: The McMurdo Dry Valleys of Antarctica: Harshest Place on Earth or a Polar Oasis? (Bio)

(Informal Education) *Pacific B, Marriott*

Cristina Takas-Vesbach, University of New Mexico, Albuquerque

Discover unexpected findings about a microbial food web that exists in one of the harshest regions of Antarctica, the McMurdo Dry Valleys.

SESSION 17

NASA: Cookie Cutter Astrophysics (Earth)

(Middle Level–High School) *Pacific C, Marriott*

Michiel N. Ford (*mford@holtonks.net*), Kickapoo Nation School, Powhattan, Kans.

Explore large-mass stars, their life cycles, and robotic telescopes that can be used by students.

SESSION 18

ASTC Session: Museum Educators and Science Interconnections (Env)

(General) *Pacific E, Marriott*

Dianne McKee, Arizona Science Center, Phoenix

Debbie DeRoma (*dderoma@rhffleet.org*), Reuben H. Fleet Science Center, San Diego, Calif.

Felicia Savage, Maryland Science Center, Baltimore
Presider: Kate Crawford (*kcrawford@astc.org*), Association of Science-Technology Centers, Washington, D.C.

Join informal science educators from the Chabot Space & Science Center, the Reuben H. Fleet Science Center, the Arizona Science Center, and the Maryland Science Center as they share their work at the intersections of formal and informal science education and with climate change and citizen science.

SESSION 19

Fields of Dreams: A Teacher's Guide for Connecting Students to Their Earth Through Their Community (Env)

(General) *Pacific F, Marriott*

Colleen M. Karl (*colleen_karl@ncsu.edu*), North Carolina State University, Edenton

Bruce W. Boller, Bertie County Schools, Windsor, N.C.

Lynette T. Baker (*lbaker@pcs.k12.nc.us*), Perquimans County Schools, Hertford, N.C.

Stephen R. Karl (*skar1@ecps.k12.nc.us*), Edenton Chowan Schools, Edenton, N.C.

Increase inquiry skills through community research projects. Learn how to support learning collaboration and citizenship with easy inquiry lessons.

SESSION 20

Using Data from Experimentation in the Service of Formative Assessment (Env)

(Middle Level–High School) *Pacific J, Marriott*

David A. Young (*davida.young@fayar.net*), Fayetteville (Ark.) Public Schools

Louise Chapman (*lchapman@volusia.k12.fl.us*), Volusia County Schools District Science Office, Deland, Fla.

Learn how we use data from students before, during, and after experimentation for formative assessment in the classroom.

SESSION 21 (two presentations)

(General) *Sierra A, Marriott*

Biotechnology in the Classroom: Results from the Field (Bio)

Julie R. Bokor (*julie@cpet.ufl.edu*), University of Florida, Gainesville

The Biotechnology in the Classroom Curriculum is a laboratory manual and complementary activity guide developed to incorporate biotechnology concepts and techniques into the high school curriculum.

Integrating Probes in the Interactive Notebook (Bio)

Jen MacColl, Chaparral High School, Scottsdale, Ariz.

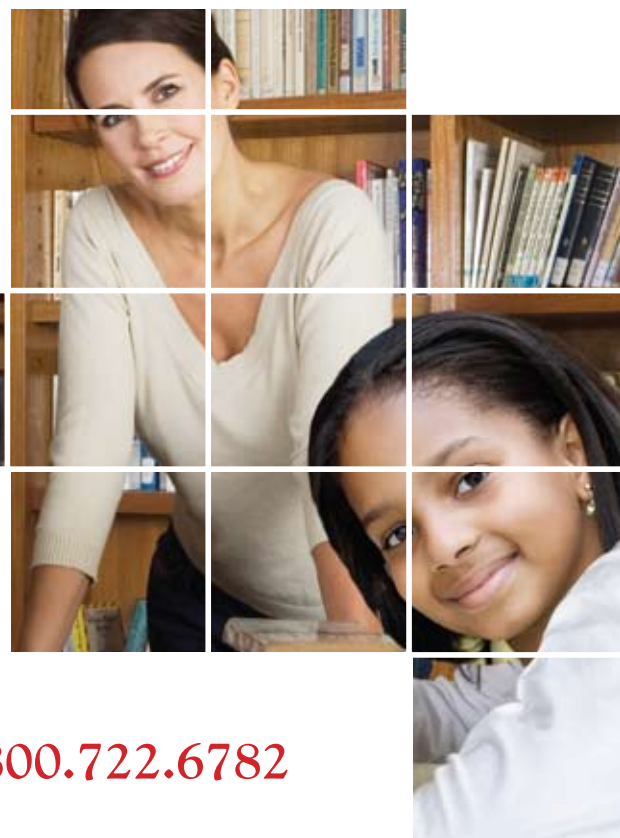
Integrating probes in the Interactive Notebook allows students to experience cognitive dissonance and to then focus on accurate information.

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For more information or to become a member, visit www.nsta.org/membership or call **1.800.722.6782**

SESSION 22

How the PLC Model Increased Participation in Both Chemistry and Physics (Chem)

(High School/Supervision) Sierra C, Marriott

Matthew L. Brodeur (*brodeur.ml@easthartford.org*), **Melissa Gavarrino** (*gavarrino@easthartford.org*), and **Nicole L. Shea** (*shea.nl@easthartford.org*), East Hartford High School, East Hartford, Conn.

We used the PLC model to increase chemistry (and now physics!) participation in our urban school, decreasing teacher isolation, increasing student motivation, and helping us more effectively assess and deliver instruction.

SESSION 23

Using Literature to Teach Experimental Design in High School (Gen)

(Middle Level–High School) Sierra E, Marriott

William P. Bintz (*wpbintz@gmail.com*), Kent State University, Kent, Ohio

Sara D. Moore (*smoore@etacuisenaire.com*), ETA/Cuisenaire, Vernon Hills, Ill.

Amy L. Moore (*almoore@henrico.k12.va.us*), Deep Run High School, Glen Allen, Va.

Picture books in high school? Interdisciplinary collaboration provides engaging instruction for high school students at all levels. We'll share a bibliography of award-winning literature.

SESSION 24

Jump Right In...The Water's Warm (and Warming)! Educational Partnerships and Projects from the NOAA National Oceanographic Data Center (Env)

(Informal Education) Sierra H, Marriott

Kenneth S. Casey (*kenneth.casey@noaa.gov*), NOAA National Oceanographic Data Center, Silver Spring, Md.

Discover the ocean data available to you and your students through the NOAA National Oceanographic Data Center's educational partnerships.

SESSION 25

Sticky Science Vocabulary Strategies (Gen)

(Elementary–High School) 113, Moscone Center

Monika Thomas (*mthomas@episd.org*), Rivera Elementary School, El Paso, Tex.

I'll share strategies, methods, and games that can help your students' vocabulary grow.

SESSION 26 (two presentations)

(General) 200, Moscone Center

Explore Earth Through Sand! (Gen)

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

James H. Wandersee, Louisiana State University, Baton Rouge

Classroom sand investigations reveal animal, mineral, tectonic, and weathering histories of our planet. Bring your local sand sample to our session "sand swap"!

En-gauging Weather (Gen)

Eileen G. Poling (*eileenon@hotmail.com*), Tucker County Schools, Hambleton, W.Va.

Students from three states gathered and shared weather data then entered the data into a GIS mapping program. Activities were integrated into lessons for elementary through high school.

SESSION 27

Teaching Science to Students with Significant Cognitive Disabilities: Content and Methods for Instruction (Gen)

(General) 208/210, Moscone Center

Steven R. Lyon (*srlyon@education.pitt.edu*) and **Peter Heh** (*pwh2@pitt.edu*), University of Pittsburgh, Pa.

Presider: Steven R. Lyon

We'll share information, examples, and strategies that general education teachers can use for teaching science to students with significant cognitive disabilities.

SESSION 28

 **Bring Your Teaching into the 21st Century with Web 2.0 Tools and Other Technologies (Gen)**

(General) 232/234, Moscone Center

Larry Zimmerman, Kinnaman Elementary School, Aloha, Ore.

Web 2.0 tools offer enhanced opportunities for teacher collaboration and student engagement. Leave this session with great ideas that can prepare you for the 21st-century classroom!

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SESSION 29 (two presentations)

(General) 250, Moscone Center

Student Teachers' Use of Web 2.0 Tools: Learning to Learn and Learning to Teach (Gen)

NancyLee Bergey (*nancylee@gse.upenn.edu*) and **Rashmi Kumar** (*rashmik@dolphin.upenn.edu*), University of Pennsylvania, Philadelphia

Our student teachers use Web 2.0 for collaborating and communicating with peers and instructors. See how students transfer their learning experiences into first-year teaching practices.

Using Inquiry with Web-based Tools to Teach Science Meaningfully (Gen)

Kristoffer Carroll (*kcarroll@interact.ccsd.net*), Clark County School District, Las Vegas, Nev.

Kent J. Crippen (*kcrippen@unlv.nevada.edu*), University of Nevada, Las Vegas

Ellen Ebert (*ellen.ebert@k12.wa.us*), Office of Superintendent of Public Instruction, Olympia, Wash.

Cindy Kern (*clkern@interact.ccsd.net*), Green Valley High School, Henderson, Nev.

Here is a model for teaching science using tools from a

web-based CMS (content management system) to meet the requirement for laboratory with the features of inquiry.

SESSION 30

Teaching Renewable Energy Concepts in Any Science Classroom (Gen)

(General) 262, Moscone Center

Matthew M. Inman (*matthew.inman@ee.doe.gov*), U.S. Dept. of Energy, Washington, D.C.

Join the teaching of renewable energy and energy efficiency concepts with the teaching of physics, chemistry, biology, and Earth science with these activities, resources, and strategies.

8:00–9:00 AM Workshops



NSTA Press Session: Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It (Phys)

(Elementary–Middle Level) Continental 6, Hilton

Bill Robertson (*wrobert9@ix.netcom.com*), NSTA Press Author, Woodland Park, Colo.

Tired of teaching a subject you don't fully understand yourself? Join the author of the *Stop Faking It!* books for sample activities designed to help you gain a deep understanding of force and motion concepts. No tuxedos, please.

Inquiry Earth Science? What Is It and How Do I Begin? (Earth)

(Elementary–Middle Level) Continental 7, Hilton

Rachel Lebo (*rlebo@scsk12.org*), Elmore Park Middle School, Bartlett, Tenn.

Analyze Earth's layers and the location of the major plates; explain how earthquakes, mountain building, volcanoes, and seafloor spreading are associated with plate movement; and analyze real-time data.

Enhancing Laboratory Skills in Middle School Students (Bio)

(Middle Level) Continental 8, Hilton

Catherine Williamson (*cwilliamson@sciport.org*), Sci-Port: LOUISIANA'S Science Center, Shreveport

Hear about an exciting program that enhances the laboratory skills of middle school students using forensic science. Take home a CD with lessons.



NSTA Press Session: Predict, Observe, Explain: Activities Enhancing Scientific Understanding (Gen)

(Middle Level–High School) Continental 9, Hilton

John Haysom (*haysom@ns.sympatico.ca*), Mount Saint Vincent University, Halifax, N.S., Canada

President: Robert E. Yager, 1982–1983 NSTA President, and University of Iowa, Iowa City

Using example activities from the recently published book, we will demonstrate how to effectively engage students in POE sequences designed to enhance their scientific understanding.

**You Can't Catch ME! I'm the Gingerbread Man!
Developing Science-based Units Using Children's
Literature (Gen)**

(Preschool–Elementary) Golden Gate 3, Hilton

Amy J. Smith (*smitha@frankfort.k12.in.us*), Blue Ridge Primary School, Frankfort, Ind.

Steven C. Smith (*mrsmith@purdue.edu*), Purdue University, West Lafayette, Ind.

Kristen Poindexter (*kpoindexter@msdwt.k12.in.us*), Spring Mill Elementary School, Indianapolis, Ind.

Use beloved children's literature to promote student curiosity while helping connect science investigations and literacy content. Take home sample lessons, ideas, and web resources.

It's All About Carbon: An Interactive Role Play (Gen)

(Elementary–Middle Level) Golden Gate 4, Hilton

Sarah C. Soule and **Helena L. Carmena** (*hcarmena@calacademy.org*), California Academy of Sciences, San Francisco
Experience engaging hands-on activities that explore the

carbon cycle as a whole and the roles that photosynthesis and cellular respiration play within that cycle.

Using Science Notebooks to Unlock Student Thinking (Gen)

(Preschool–Elementary) Golden Gate 6, Hilton

Teresa C. Phillips, Houston (Tex.) Independent School District

Barbara Z. Tharp (*btharp@bcm.edu*) and **Michael Vu** (*mv12@bcm.edu*), Baylor College of Medicine, Houston, Tex.

Regardless of your experience using science notebooks, this interactive workshop will provide tools and strategies that allow you to diagnose, support, and assess student thinking.

Strategies for Teaching Scientific Thinking (Gen)

(Elementary–High School) Golden Gate 8, Hilton

Donald A. DeRosa and **Carla Romney** (*romney@bu.edu*), Boston University, Boston, Mass.

Explore classroom applications of instructional strategies that teach cognitive tools of scientific inquiry across disciplines.

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Roll into Mathematics and Science Connections with Water Bottle Cars (Phys)

(Elementary–Middle Level) Union Square 15/16, Hilton
Reeda L. Hart (*hartr@nku.edu*) and **Betty Stephens** (*stephensb@nku.edu*), Northern Kentucky University, Highland Heights

Presider: Dale Elifrits (*elifritsc@nku.edu*), Northern Kentucky University, Highland Heights

Explore force and motion while reinforcing mathematics. Make a car that runs in this action-packed workshop. Free CD of integrated math and science lessons.

Captivate Your Students with Magic! (Gen)

(General) Golden Gate Salon A, Marriott
Alexander S. Graham (*tneltdowns@yahoo.com*), Glenda Dawson High School, Pearland, Tex.

Use magic to inspire your students, teach science topics, and create enthusiasm in your classroom.

Reflect on This! Light Activities That Will Ignite Students' Inner Galileos (Phys)

(General) Nob Hill B, Marriott

Breigh Rainey (*breigh.rainey@zacharyschools.org*), **Bianca Deliberto** (*bianca.deliberto@zacharyschools.org*), **Darla Jines**, and **Aimee Davis**, Zachary Elementary School, Zachary, La.

Tammy Wood (*tammy.wood@zacharyschools.org*), Zachary (La.) Community Schools

Unleash students' inner scientists as they transform into mini Alhazens (the father of optics), Einsteins, and Galileos. Spark interest through engaging hands-on activities from reflection and refraction to an edible exploration of the Sun.

This Is the Dawning of the Age of Aquarium

(Chem)

(General) Nob Hill D, Marriott

Emily Mathews (*eslippert@cps.edu*) and **Patty Whitehouse** (*ptwhitehouse@cps.edu*), Joseph Stockton Elementary School, Chicago, Ill.

Melissa Higgason (*higgason@purduecal.edu*) and **Cynthia Estler**, Purdue University Calumet, Hammond, Ind.

Jen Lewin (*jjlewin@cps.edu*), Graeme Stewart Elementary School, Chicago, Ill.

Three middle schools studied aquarium chemistry, compared it to their field-based research, and created their own scientific community using web conferencing and wikis. Learn how!

DuPont Presents—Driving Science (Gen)

(Middle Level–High School) Pacific A, Marriott

Dorothy Moss and **Glenda Pepin** (*gpepin@clemsun.edu*), Clemson University, Clemson, S.C.

Presider: Peggy Vavalla, DuPont, Wilmington, Del.

DuPont Motorsports and Daytona International Speedway introduce a partnership that provides professional development to help middle and high school teachers connect STEM content, teaching strategies, and careers. This hands-on session will investigate standards related to Newton's laws of motion in the context of real-world applications and connections to motorsports.

Infect Your Biology Classroom with Math (Bio)

(Middle Level–High School) Pacific H, Marriott

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

Integrating biology and mathematics shouldn't be just a good idea—it should be the law! Learn how easy, important, and fun it is to collect and analyze data as a part of good, solid, responsible science education.

Look but Don't Touch! (Bio)

(Middle Level–High School/Informal) Pacific I, Marriott

Dottie W. Hartman (*dottie.hartman@lpsb.org*), Walker High School, Walker, La.

Create fashion-forward coral snake mimicry necklaces and explore other activities on the evolution of concealment.

Explore Earth Systems with Scaffolded Inquiry

(Earth)

(General) Sierra B, Marriott

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

This session will model how to use scaffolded inquiry (directed to guided to full) to explore Earth systems.

Lake St. Clair—Use or Abuse? (Env)

(Elementary–High School) Sierra J, Marriott

Chris Geerer (*christine.geerer@gpschools.org*) and **Laura Mikesell** (*laura.mikesell@gpschools.org*), Parcels Middle School, Grosse Pointe Woods, Mich.

Presider: Laura Mikesell

This highly interactive role-play engages the entire class in environmental and economic decision making as they make choices to pollute or protect the lake.

Advancing Science Literacy Through Astronomy Using Galileo’s Observations and Hands-On Activities (Earth)

(General) Walnut, Marriott

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

These inquiry-based activities re-create and examine the observations Galileo used to support the heliocentric model of the solar system. Free resources.

COSEE Session: The Role of Discourse as Students Make Meaning of Science Concepts (Gen)

(Informal Education) Willow, Marriott

Sarah Pedemonte (*spedemonte@berkeley.edu*) and **Emily L. Weiss** (*weisse@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

Explore the role of discourse in building understanding how educators can promote or hinder learning conversations in teaching.

What’s Up? Classroom Activities from the Association for Astronomy Education, Part I—Sun, Earth, and Planets (Earth)

(General) Yerba Buena Salon 8, Marriott

Aleya Van Doren (*aleya.vandoren@nasa.gov*), NASA Goddard Space Flight Center, Greenbelt, Md.

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

Presider: Aleya Van Doren

These classroom-ready hands-on astronomy activities that really work will be led by master astronomy teachers from the Association of Astronomy Educators (AAE).

The Latest on NASA’s New Rockets! (Earth)

(Middle Level–High School) Yerba Buena Salon 14, Marriott

Angelo A. Casaburri (*angelo.casaburri-1@nasa.gov*), NASA Johnson Space Center, Houston, Tex.

Learn about the history, scientific principles, technology, and mathematics of rockets and explore instructional techniques for making safe indoor and outdoor rockets from inexpensive, locally obtainable materials.

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Using Technology in Experiential Learning (Gen)

(Elementary–High School) 111, Moscone Center

Michael P. Marlow (mike.marlow@ucdenver.edu), University of Colorado, Denver

Hear how teacher-made movies and digital stories of teachers' extraordinary experiences can engage students in inquiry science.

Using Socratic Seminars in Science (Gen)

(Middle Level–College) 112, Moscone Center

Jeanne T. Chowning (jchowning@nwabr.org), Northwest Association for Biomedical Research, Seattle, Wash.

Socratic Seminars can be used in the science classroom to foster discussion of a challenging text. Come engage in an actual seminar.

Measuring Up: Using Measurement to Build Conceptual Knowledge (Gen)

(General) 212, Moscone Center

Susan Gomez-Zwiep (sgomezwp@csulb.edu), California State University, Long Beach

David Harris, Escondido School District, San Diego, Calif.

Explore integrated math/science activities that build students' confidence in using mathematics to describe scientific phenomena. Measurement/ratios provide clues to the shape, density, and speed of objects.



Fun with Flames: A Safe Way to Teach Fire Sciences (Chem)

(Middle Level–High School/Informal) 220/222, Moscone Center

Laura Rico-Beck (laura.rico-beck@msichicago.org) and **Jennifer M. Edginton** (jennifer.edginton@msichicago.org), Museum of Science and Industry, Chicago, Ill.

Join us to investigate an arson in an applied fire sciences activity. Fire science resources, lessons, and materials will be shared.



On the Prairie: Ecological Approaches to Language and Mathematics (Env)

(Elementary–Middle Level) 224/226, Moscone Center

Sandra J. Vander Velden (vanderveldensa@aasd.k12.wi.us), **Joann Engel** (engeljoann@aasd.k12.wi.us), **Emily Schwanke**, and **Dollinda Fritz**, Fox River Academy, Appleton, Wis.

Take on the role of a field biologist who reads, writes, and does math for the purpose of deeper understanding of the prairie ecosystem.

8:00–9:00 AM Exhibitor Workshops

Show Me the Money: Learn the Tips and Tricks to Grant Funding (Gen)

(Grades K–12) 274/276, Moscone Center

Sponsor: DYMO/Mimio

Magen McGahee, DYMO/Mimio, Cambridge, Mass.

If you are seeking funding sources and ideas, this workshop is for you. Find out how to find and locate grants to fit your needs and learn how to think outside the box when it comes to funding. Take home a comprehensive list of available grants and a road map toward securing them.

Investigations in Environmental Science: A Case-based Approach (Env)

(Grades 9–12) 307, Moscone Center

Sponsor: It's About Time

Gary Curts, Dublin (Ohio) Public Schools

Learn how to incorporate case-based units into your curriculum, support students in making environmental decisions, and identify the key components to a case-based unit. Leave with a practical hands-on activity that you can do in your classroom. Hear from teachers who have used the program and find out how it's working with their students.

8:00–9:30 AM Exhibitor Workshops

Massive Reactions (Gen)

(Grades 7–College) 110, Moscone Center

Sponsor: Adam Equipment Inc.

Penney Sconzo, The Westminster Schools, Atlanta, Ga.

Come see how chemical reactions affect mass by conducting a variety of hands-on chemical reactions. Activities are included for all grade levels along with training on the proper use of balances and chemicals. Get practical ideas, safe techniques, and connections to science standards with experiments that both teachers and students can enjoy.

Strawberry DNA and Molecular Models (Bio)

(Grades 8–12) 120, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

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



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- **SciGuides.** Use these online resources, aligned with the national Standards, to locate lessons organized by grade level and specific content themes.

Expand Your Mind

- **NSTA Press®** publishes 25 new titles each year. Browse at the Science Bookstore, and connect with authors to have your new book signed. Submit your new book idea to <http://mc.manuscriptcentral.com/nstapress>.
- **SciLinks®.** Link to science resources on the internet, using sites recommended by science educators. You'll find accurate information, effective pedagogy, and reliable content.

Add Your Voice

- **Science Matters** is a major public awareness and engagement campaign designed to rekindle a national sense of urgency and action among schools and families about the importance of science education and science literacy.
- The **John Glenn Center for Science Education Campaign.** NSTA's five-year, \$43 million national campaign to make excellence in science teaching and learning a reality for all will fund a series of forward-thinking programs and a state of the art facility designed to promote leadership, learning, and advocacy in science education.

Distinguish Yourself

- **NSTA Awards.** 17 programs offer awards to science teachers K–College.
- **Toshiba/NSTA ExploraVision® Awards** is a team-based K–12 competition that awards up to \$240,000 in savings bonds annually.
- **Toyota TAPESTRY** has awarded over \$11 million in grants for K–12 science teachers over the past 20 years.
- **THE DUPONT CHALLENGE® Science Essay Competition** is for grades 7–12, with cash prizes and an expense-paid trip to Disney World® and the Kennedy Space Center.
- **Siemens We Can Change the World Challenge** is a national student sustainability competition that encourages students to develop actionable local solutions for a “greener” world.
- **Disney's Planet Challenge** is a project-based environmental competition for grades 3–8 that empowers students to make a difference in their homes, schools, and communities.
- The **Pete Conrad Spirit of Innovation Awards** challenges teams of high school students to create innovative products in three categories: aerospace exploration, clean energy, and cyber security.
- The **NSTA New Science Teacher Academy** supports science teachers during the often challenging, initial years by enhancing confidence, classroom excellence, and teacher content knowledge.
- **NSTA's Shell Science Lab Challenge** provides science laboratory equipment and professional development support to middle and high schools with limited resources. Learn how you can win a \$20,000 lab makeover support package.
- The **Mars Education Challenge** awards cash prizes and trips to teachers who develop ways to fit Mars science and exploration into classes. Winners also can participate in field studies with planetary scientists.

Think Mink! Exploring Mammalian Anatomy with Carolina's Perfect Solution® Mink (Bio)*(Grades 9–College) 121, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Explore the benefits of using Carolina's Perfect Solution mink for your next mammalian dissection. Participants will be introduced to the general structure, anatomy, and physiology of the mink, a mature carnivorous mammal, through hands-on guided dissection. Minks are skinned and preserved in safe, nontoxic Carolina's Perfect Solution.

Don't Forget the "M" in STEM: A Focus on Literacy in the Math Classroom (Gen)*(Grades K–5) 122, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Inquiry math can grow your students' literacy skills and mathematical understanding. Discover how pairing hands-on materials with notebooking can improve student understanding of abstract ideas while building vocabulary. Explore investigations from Math Out of the Box®, developed by Clemson University's College of Engineering and Science. Classroom materials provided.

Exploring the Online Kendall Hunt Learning Network (Bio)*(Grades 9–12) 123, Moscone Center*

Sponsor: Kendall Hunt Publishing Co.

Jerilyn Hilse, Kendall Hunt Publishing Co., Dubuque, Iowa

The objective of the Kendall Hunt Learning Network is to engage students, teachers, administrators, and parents within a comprehensive and interactive online community that provides enhanced educational content and tools designed to make the learning experience more exciting, useful, and accessible to each type of user.

The JASON Project, Immersion Learning, and Nautilus Live: Exploration-based Learning (Gen)*(Grades 4–9) 124, Moscone Center*

Sponsor: The JASON Project/Immersion Learning/Nautilus Live

Andre Radloff (info@jason.org), The JASON Project, Ashburn, Va.

The JASON Project features researchers and engineers from National Geographic, NOAA, the Department of Energy,

and NASA in its core science curricula. Experience how JASON's free multimedia curricula—now enhanced with resources from partners Immersion Learning and Nautilus Live—provide exploration-based science experiences for students in classrooms and after-school programs.

What Is the Difference Between Heat and Temperature? (Chem)*(Grades 10–12) 125, Moscone Center*

Sponsor: LAB-AIDS, Inc.

Tom Hsu, Author, Andover, Mass.

How many of your students can answer this question? We will show you a powerful, intuitive, and nearly foolproof way to teach this key idea in chemistry. The concept of heat and the flow of energy is a modern way to look at a core concept that appears in many of your standards. We will also use a classroom-rugged new probe system that stores data on a portable SD card!

Real-Time Displacement, Velocity, and Acceleration Measurements with CPO's Velocity Sensor (Phys)*(Grades 5–12) 131, Moscone Center*

Sponsor: CPO Science/School Specialty Science

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

CPO's Velocity Sensor uses sound waves to measure and display position, velocity, and acceleration data of moving objects. Investigate how the Energy Car moves on our new SmartTrack to explore Newton's laws, kinematics, friction, and the law of conservation of energy in this inquiry-based learning activity.

Investigating Mitochondrial Genetics (Bio)*(Grades 9–12) 132, Moscone Center*

Sponsor: PASCO Scientific

Presenter to be announced

Explore the connections between mitochondrial DNA, the electron transport chain, and human health and disease when you participate in this hands-on activity from PASCO's *Advanced Biology Teacher Guide*. This activity fuses modern molecular biology technology from EDVOTEK® and PASCO with traditional pedigree analysis to provide a high-level experimental biology experience in the classroom.

Middle School Physical Science: Learn Key Concepts Through Hands-On Probeware-based Activities

(Phys)

(Grades 6–8)

133, Moscone Center

Sponsor: PASCO Scientific

Presenter to be announced

Get hands-on experience with a state-of-the-art way to meet the physical science standards when you conduct an activity from the Sally Ride Science™ SPARKlabs series. The integrated, probeware-based, guided inquiry lessons from Sally Ride Science and PASCO cover content such as motion, chemical reactions, and conservation of energy.

The Science of Stem Cells and Diabetes: Pulse-Chase Activities

(Bio)

(Grades 9–College)

134, Moscone Center

Sponsor: Howard Hughes Medical Institute

Mary Colvard (*mcolvard@tds.net*), STANYS, Deposit, N.Y.

Inexpensive materials such as the Connect 4™ game are used in this inquiry-based hands-on workshop. Activities focus on a basic understanding of pulse-chase analysis, diabetes, and stem cells. Video clips and animations are used to support key concepts. Attendees will receive the Howard Hughes Medical Institute's *Potent Biology* DVD and classroom-ready lessons and activities.

SMART Technologies and the Science Classroom

(Gen)

(Grades K–12)

202/204, Moscone Center

Sponsor: SMART Technologies

SMART Exemplary Educator and SMART Education Consultant

Learn how SMART products can enhance science instruction. In this session, you'll see how a SMART Exemplary Educator and a SMART Education Consultant use SMART products to create science lessons that get students involved and engaged in learning. Discover how SMART products can make a difference in your classroom.

Raising Test Scores with Discovery Education Science

(Gen)

(Grades K–12)

206, Moscone Center

Sponsor: Discovery Education

Presenter to be announced

Current educators will share their experiences incorporating Discovery Education content into the classroom. Their investigations led to interesting and unexpected outcomes.

Art vs. Science: The Role of Science in the Wine-making Process

(Gen)

(Grades 7–12)

236/238, Moscone Center

Sponsor: Fisher Science Education

David Doty, Swift Optical Instruments, Inc., San Antonio, Tex.

Jim Bertsch, Aldon Corp., Avon, N.Y.

From the vineyard to the table, modern winemakers employ a multitude of scientific techniques to help control every stage of the wine-making process. Learn how contemporary winemakers use biology, chemistry, and physical science to help face the challenges of producing the highest quality wines, while still maintaining the integrity of their art. Activity guides will be provided. Attendees will be entered into a drawing to win science equipment, which will be awarded during a drawing at the completion of the workshop. This is a hands-on workshop, and seating is limited to 30 attendees.

A Showcase of BIOZONE's Latest Workbooks and Presentation Media for Grades 9–12

(Bio)

(Grades 9–12)

256, Moscone Center

Sponsor: BIOZONE International

Richard Allan (*richard@biozone.co.nz*), BIOZONE International, Hamilton, New Zealand

BIOZONE's acclaimed biology student workbooks (grades 9–12) and presentation media (editable PowerPoint slides) will be showcased. BIOZONE products are renowned for their impressive graphics for visual learners, their concept-based format that allows differential learning, and for encouraging critical thinking. Also, learn about our 10 modular workbook titles, including *Anatomy & Physiology* and *Environmental Science*. Take home a free book.

Mix It Up: Column Chromatography to Study Proteins

(Bio)

(Grades 9–12)

270/272, Moscone Center

Sponsor: Sargent-Welch

Ellyn Daugherty, San Mateo Biotechnology Career Pathway, San Mateo, Calif.

In this hands-on workshop, author Ellyn Daugherty presents a lab activity from her new edition of *Biotechnology: Science for the New Millennium* ©2011 and shares how to run ion-exchange columns to separate proteins lysozyme and amylase based on their charge. Participants will load and run a column with a mixture of proteins, collect fractions, and analyze them. Strategies for incorporating this activity into existing courses and how chromatography is used in industry will be shared.

Stream Ecology: Slimy Leaves for Clean Streams**(Env)***(Grades 4–12)*

300, Moscone Center

Sponsor: LaMotte Co.

Charlie Graham, Forest Grove Community School, Forest Grove, Ore.

Join us for this hands-on introduction to stream ecology. Observe aquatic macroinvertebrate specimens, participate in hands-on activities, learn classification skills, and calculate a biotic index. Learn how this project turned into a long-term study for one Oregon teacher and his students—and the new directions it took them. Door prize!

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

301, Moscone Center

Sponsor: Vernier Software & Technology

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

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

Water Quality with Vernier**(Env)***(Grades 7–College)*

302, Moscone Center

Sponsor: Vernier Software & Technology

Robyn Johnson (info@vernier.com) and **Mike Collins** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Learn how to use LabQuest and sensors to study water quality in the field. Try LabQuest's new Data Matrix mode, designed to make field data management easy. Learn how to map your sampling sites and data on Google Maps and ArcGIS using the Vernier GPS Sensor and Logger *Pro* software.

Building Science Vocabulary with Dinah Zike's Visual Kinesthetic Vocabulary® and Foldables®**(Gen)***(Grades K–12)*

303, Moscone Center

Sponsor: Dinah-Might Adventures, LP

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

In this fast-paced hands-on session, see how 3-D interactive graphic organizers (Foldables) and Visual Kinesthetic Vocabulary manipulatives become powerful tools for enhancing academic vocabulary.

Geotagging and Mapping Your Field Data (Earth)*(Grade 10)*

304, Moscone Center

Sponsor: Esri

Joseph Kerski (jkerski@esri.com) and **Tom Baker** (tbaker@esri.com), Esri, Redlands, Calif.

Geotagging is the process of assigning geographic information to digital media for mapping and visualization purposes. Learn how to geotag your digital photos, movies, and other media with a variety of free tools, such as Geographic Information Systems (GIS) ArcGIS Explorer Online, ArcGIS Explorer Desktop, and others. Enhance your field trips in multimedia with geotagging and uncover spatial patterns in your field data.

New Tools, New Insights, and New Ways of Understanding Science with Miller and Levine Biology**(Bio)***(Grades 9–12)*

305, Moscone Center

Sponsor: Pearson

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

Joseph Levine, Concord, Mass.

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

Bio-Rad Microbes and Health: “What Causes Yogurt?” Kit**(Bio)***(Grades 7–College)*

306, Moscone Center

Sponsor: Bio-Rad Laboratories

Sherri Andrews (biotechnology_explorer@bio-rad.com), Bio-Rad Laboratories, Hercules, Calif.

Introduce your students to microbiology using yogurt! Isolate bacteria from yogurt on a petri dish and then use these strains to inoculate fresh milk to produce more yogurt. Learn about disease transmission and progression and apply Koch's postulates. Teach microbiology, microscopy, health science, and biology with one lab.

Teaching Middle School Science with a Digital Curriculum**(Gen)***(Grades 6–8)*

308, Moscone Center

Sponsor: Houghton Mifflin Harcourt

Presenter to be announced

Learn how to teach a comprehensive curriculum with no textbooks using the digital curriculum from the new Holt McDougal *ScienceFusion* 6–8 program.

ELL Strategies for Making Science Content Comprehensible (Gen)

(Grades 1–8) 309, Moscone Center

Sponsor: Teacher Created Materials

Mary A. McDonald, Teacher Created Materials, Huntington Beach, Calif.

This fast-paced workshop will provide strategies for helping ELL students learn vocabulary and build prior knowledge around scientific concepts. Best practice approaches will be demonstrated by using visually dynamic literature, hands-on activities, and differentiating instruction. Take home classroom resources.

Best Practices Implementing Online Science Labs Both In and Out of the Classroom (Gen)

(Grades 6–College) 310, Moscone Center

Sponsor: Smart Science® Education

Edward Keller, Smart Science Education, Manhattan Beach, Calif.

Smart Science labs are online science labs that contain interactive filmed experiments. Students make predictions, measure their own data, and then see how their data supports or refutes that hypothesis. Mastery is ensured through pre- and post-lab assessments and an online lab report. Come learn how to use online labs effectively. Visit www.smartscienceonline.com for more information.

8:00–10:00 AM Exhibitor Workshop

Using Science Notebooks with FOSS K–6 (Gen)

(Grades K–6) 130, Moscone Center

Sponsor: Delta Education/School Specialty Science–FOSS
Brian Campbell, Lawrence Hall of Science, University of California, Berkeley

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

Learn the essential components for creating and effectively using science notebooks with your students. Through a hands-on FOSS investigation, you'll discover how science notebooks can be used to impact student achievement and how to use science notebooks as an effective tool for building conceptual understanding. Take home sample FOSS materials.

8:00 AM–12 Noon Short Course



Young Investigators in Environmental Health Science: Challenging and Exciting Your Students with Novel, Inquiry-based Environmental Activities (SC-17)

(Elementary) Conference Theatre, Grand Hyatt

Tickets Required: \$33

Sara Swearingen (sswearingen@smithvilleisd.org) and **Jason Peterson** (jpeterson@smithvilleisd.org), Smithville Elementary School, Smithville, Tex.

Heather Reddick (hreddick@mdanderson.org), The University of Texas MD Anderson Cancer Center, Smithville
For description, see Volume 1, page 69.

8:00–11:00 AM Short Courses



Accessing Science Through Language, Reading, and Writing (SC-16)

(Grades 6–12) Sausalito, Grand Hyatt

Tickets Required: \$47

Arthur Beauchamp (acbeauchamp@ucdavis.edu), University of California, Davis

For description, see Volume 1, page 68.



Bringing Nanotechnology into the Classroom (SC-15)

(Middle Level–High School) Union Square, Grand Hyatt

Tickets Required: \$50

Morton M. Sternheim (mort@umassk12.net) and **Rob Snyder** (snyder@umassk12.net), STEM Education Institute, University of Massachusetts, Amherst

For description, see Volume 1, page 69.



8:00 AM–3:00 PM Short Courses



2011: NASA's Year of the Solar System (SC-18)

(Elementary–High School) *Merced A/B, Grand Hyatt*
Tickets Required: \$23

Stephanie S. Shipp (*shipp@lpi.usra.edu*) and **Christine Shupla** (*shupla@lpi.usra.edu*), Lunar and Planetary Institute, Houston, Texas

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

For description, see Volume 1, page 69.

Science Notebooks: Developing a Deeper Understanding (SC-19)

(Elementary–High School) *San Francisco A/B, Grand Hyatt*
Tickets Required: \$27

Trisha Herminghaus, **Judy Onslow** (*onslow_judy@asdk12.org*), and **Texas Gail Raymond**, Anchorage Alaska School District

Joanna Hubbard, Begich Middle School, Anchorage, Alaska

For description, see Volume 1, page 69.

8:15–9:15 AM Meeting

Past Presidents Advisory Board Meeting

Yosemite A, Hilton

8:30–9:00 AM Presentation

SESSION 1

How to Find a Specimen Quickly Under a Microscope (Bio)

(Middle Level–High School) *Golden Gate Salon C3, Marriott High School, Westport, Conn.*
Michael J.V. Lazaroff (*mjvlazaroff@gmail.com*), Staples

High School, Westport, Conn.
 Tired of helping frustrated students find microscope specimens? Here is a time-tested method that will have them finding and drawing, accurately, within seconds!

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 12
 9:30–10:30 AM
Hilton San Francisco Union Square, Union Square 14

For information on the Retired Members Advisory Board, contact Phyllis Frysinger, chair, at *pfrysinger@woh.rr.com*.



8:30–10:00 AM Featured Presentation

The Educational Forum: Listening to America

(Gen)

(General)

104, Moscone Center



Bernard A. Harris, Jr. (*info@the-harrisfoundation.org*), President, The Harris Foundation, Houston, Tex.

Presider: Zipporah Miller (*zmiller@nsta.org*), Associate Executive Director, Professional Programs and Conferences, NSTA, Arlington, Va.

- 8:30–8:50 AM Welcome and Introduction
Bernard A. Harris, Jr.
- 8:50–9:20 AM Panel Introductions
- Folasade Oladele
Deputy Superintendent
Buffalo (N.Y.) Public Schools
Structural Inequality in United States' Educational System
- Wallace Coleman
Parent
Nashville (Tenn.) Public Schools
Effective Strategies for Utilizing Parent Ambassadors
- Milagros Fornell
Associate Superintendent
Miami-Dade Public Schools, Miami, Fla.
Authentic Learning Experiences Through Partnership
- Tina Cheuk
Assistant Director
Strategic Education Research
Partnership
San Francisco, Calif.
Bridging the Gap Between K–12 and Higher Education
- 9:20–9:50 AM Discussion facilitated by Bernard A. Harris, Jr.
Audience members are encouraged to approach microphones in either aisle to present questions or comments.

The Harris Foundation (THF), led by Dr. Bernard Harris, has been touring the nation since 2008 with an Educational Forum series called Listening to America. Through dialogue with teachers, superintendents, parents, community leaders, elected officials, and industry leaders from more than 20 cities, THF has learned about the issues, barriers, and successes of education in this country. STEM (science, technology, engineering, and mathematics) education is critical for the success of today's students. Be part of the conversation and join the partnership in this national call for change!

A NASA astronaut, physician, and businessman, Dr. Bernard A. Harris, Jr., founded The Harris Foundation in 1998 to develop math and science education and crime prevention programs for America's youth. He holds several faculty appointments, including associate professor in Internal Medicine at the University of Texas and assistant professor at Baylor College of Medicine. Harris is also CEO of Vesalius Ventures, a venture capital firm.

After receiving his doctorate of medicine from Texas Tech University, he became an aerospace flight surgeon. In 1990, he was selected as a NASA astronaut and flew his first mission in 1993. A payload commander of STS-63, the first flight of the Russian-American space program, Dr. Harris achieved a childhood dream by completing a walk in space, the first African-American to do so. At NASA, he conducted research in musculoskeletal physiology and disuse osteoporosis and clinical investigations on space adaptation, which led to development of in-flight medical devices extending astronaut stays in space. Dr. Harris retired from NASA in 1996 after logging more than 438 hours and 7.2 million miles in space.

9:00–10:00 AM Presentation**SESSION 1****COSEE Session: Linking the Ocean to the Classroom (Earth)***(Informal Education)**Willow, Marriott***Liesl Hotaling**, Centers for Ocean Sciences Education Excellence, Highlands, N.J.

Explore internet-based ocean-themed learning resources and materials designed for classroom instruction.

9:00 AM–5:00 PM Exhibits*Halls A–C Moscone 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***Laurel, Marriott*

Please stop by the NSTA International Lounge to relax or meet colleagues.

9:30–10:00 AM Presentation**SESSION 1****Generating Interest with Wind Energy (Phys)***(Middle Level–High School)**Nob Hill C, Marriott***Patricia Lucido** (*plucido4405@att.net*), Rockhurst University, Kansas City, Mo.**Cheryl Malm** (*cgmalm@nwmissouri.edu*), Northwest Missouri State University, Maryville

Wind energy has been harnessed for more than 5,000 years. Explore the shift from pumping water to the use of wind to generate electricity.

9:30–10:30 AM Featured Presentation**How to Cure Safety Stress and Legal Sweats! (Gen)***(General)**102, Moscone Center***Ken Roy** (*royk@glastonburyus.org*), Director of Environmental Health & Safety, Glastonbury (Conn.) Public SchoolsPresident: Valerie Joyner (*vjoyner@pet.k12.ca.us*), Elementary Science Lead Teacher, Petaluma (Calif.) City Schools

Whether preparing for the next class lab activity or presenting at a professional conference, high anxiety relative to safety and liability often comes into play. This presentation will provide basic standard operating procedures and related issues every science teacher should know based on legal standards and best professional practices to help relieve safety stress and legal sweats!

Ken Roy is director of Environmental Health & Safety for Glastonbury Public Schools in Connecticut. He has spent more than 42 years teaching physics, biology, and chemistry. He is president of National Safety Consultants, a company that provides services to educational and business communities in the areas of employer/employee safety. Dr. Roy is an authorized OSHA instructor for General Industry.

At the National Science Education Leadership Association, Roy has served as president, executive director, and National Science Leadership Institute director. He is currently its safety compliance officer. He also served on the International Council of Associations for Science Education. He has been a consultant for the American Association for the Advancement of Science's Project 2061; NSTA's program on Scope, Sequence, and Coordination for Secondary School Science; the National Science Education Standards; and the Connecticut State Science Frameworks.

Roy is a syndicated safety compliance columnist and author of safety and education books. He currently serves as NSTA's chief science safety liaison to the Science Safety Advisory Board.

9:30–10:30 AM Presentations



SESSION 1

NSTA Press Session: *Girls in Science*—A Framework for Action (Gen)

(General) Continental 9, Hilton

Katherine M. Nielsen (*katherine.nielsen@ucsf.edu*), University of California, San Francisco

Liesl Chatman and **Erin Strauss** (*estrauss@smm.org*), Science Museum of Minnesota, St. Paul

Effective science education needs to address gender equity. Discussion will center on the *Girls in Science* book and its framework for teaching science to all students.

SESSION 2

Modeling Microclimate in an Introductory Earth System Science Course (Earth)

(High School–College) Golden Gate 1, Hilton

Randal L.N. Mandock (*rmandock@netzero.net*), Clark Atlanta University, Atlanta, Ga.

Introduce introductory Earth science students to climate modeling with an interactive energy-balance module. Students integrate meteorological observations with microclimate modeling.

SESSION 3 (two presentations)

(Elementary) Golden Gate 2, Hilton

Presenter: **Pamela S. Lottero-Perdue** (*plottero@towson.edu*), Towson University, Towson, Md.

STEM on Camera: Using Handheld Digital Video Cameras to Enhance Teaching and Learning (Gen)

Pamela S. Lottero-Perdue (*plottero@towson.edu*), Towson University, Towson, Md.

Amy Ryan (*amy.ryan@hcps.org*), Harford County Public Schools, Forest Hill, Md.

Lisa Minutoli (*lisa.minutoli@hcps.org*), Ring Factory Elementary School, Bel Air, Md.

Examples from the field demonstrate how elementary STEM education can be enhanced through the use of handheld high-definition digital video cameras.

Attracting Testable Questions: Student Scientists Lead the Way! (Gen)

Kimber Hershberger (*khm12@scasd.org*), Radio Park Elementary School, State College, Pa.

Try some introductory lessons that engage students in developing testable questions for guiding units such as magnets, rocks and minerals, light, and simple machines.

SESSION 4

Plants—From Seed to Seed (Env)

(Elementary–Middle Level) Golden Gate 5, Hilton

Jerry Bowen (*jbowen@nsd131.org*) and **Gary Tonn** (*gtonn@nsd131.org*), South Middle School, Nampa, Idaho

Using small raised garden plots, middle school students learn how plants grow and produce seeds that are used to make flour and popcorn.

SESSION 5

Blocks Presents: Little Hands Making Big Moves in Science (Phys)

(Preschool) Golden Gate 7, Hilton

Montserrat Garibay, NBCT (*mgaribay@austinisd.org*) and **Sandy I. Martinez** (*sandy_ida@yahoo.com*), Austin (Tex.) Independent School District

Learn how to develop the concept of force and motion using hands-on activities and how to increase academic science vocabulary.

SESSION 6

Immersive Experiences in Science and Engineering: Emphasizing Inquiry Skills for K–8 Teachers (Gen)

(General) Golden Gate 8, Hilton

Donald DeRosa Boston University, Boston, Mass.

We will report on the methods and impact of professional development for K–8 teachers that progressively immerses them in an engineering or scientific inquiry.

SESSION 7

Do Ya Dig It? Building a Passion for Teaching Earth Systems Science (Gen)

(Preschool–Middle Level) Union Square 3/4, Hilton

Susan Elizabeth Thomas (*twothom@bellsouth.net*), Alabaster, Ala.

Explore how the familiar hobby of fossil hunting can lead to a true excitement for Earth systems science teaching and learning.

SESSION 8

Science in Motion Drives Discovery (Gen)

(High School–College) Union Square 13, Hilton

Wendy K. Griest, Elizabethtown College, Elizabethtown, Pa.

The Science in Motion program delivers science equipment, teaching assistance and support, and professional development to high school science teachers throughout Pennsylvania.

SESSION 9

Before and After Retirement: Practicalities and Possibilities (Gen)

(General)

Union Square 14, Hilton

Howard Wahlberg, Assistant Executive Director, Member, Chapter, and Customer Relations, NSTA, Arlington, Va.

Phyllis Frysinger (*pfrysinger@woh.rr.com*), Wright State University, Dayton, Ohio

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.

SESSION 10 (two presentations)

(General)

Union Square 17/18, Hilton

Bridging the Gap: Building Successful Partnerships Between Formal and Informal Learning Institutions (Gen)

Katie Gnau (*kgnau@lpzoo.org*), **Darrell Jones**, and **Sandra Aponte**, Lincoln Park Zoo, Chicago, Ill.

Anne Marie Fayen, The Field Museum, Chicago, Ill.

Hear about Chicago's Early Elementary Science Partnership (E²SP), a school-based program with museums and zoos dedicated to improving science instruction.

What's Going On at the Zoo? (Gen)

Mary Starr (*mastarr@umich.edu*), University of Michigan, Ann Arbor

Helen Beady (*hbeady@memphiszoo.org*), Memphis Zoo, Memphis, Tenn.

Connect curricular and extra-curricular experiences in science learning makes science curricula stronger for teachers and students.

SESSION 11

Science Notebooks: Transforming Science and Writing (Gen)

(Elementary–Middle Level/Supv)

Union Square 19/20, Hilton

Becky Litherland (*slitherland@pkwy.k12.mo.us*) and **Sarah Swanger**, Parkway School District, St. Louis, Mo.

Jody Eisele (*jeisele@pkwy.k12.mo.us*), Parkway West Middle School, Chesterfield, Mo.

Explore the power of science notebooks in promoting inquiry-based and student-centered learning. Science becomes the inspiration for expository writing instruction.

SESSION 12

NMLSTA Session: Finding Success with Grant Proposal Writing: Basic First Steps (Gen)

(General)

Union Square 21, Hilton

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

Seeking money for special projects in your classroom? Learn about resources, initial steps, and “hints for success.”

SESSION 13

Making a Connection: Scientific Research and K–12 Students (Gen)

(High School–College)

Union Square 22, Hilton

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

A university/high school partnership provided research opportunities to high school students. We'll share logistics and lessons learned from scientists, educators, and area schools.

SESSION 14

School Teams, School Change: Developing Leadership for Science Instruction (Gen)

(General)

Union Square 25, Hilton

Margo Bartiromo, Merck Institute for Science Education, Rahway, N.J.

Susan Elko, Education Consultant, Exton, Pa.

Presider: Carlo Parravano, Merck Institute for Science Education, Rahway, N.J.

School-based teams of teachers and a principal use research to develop their capacity to provide effective science instruction for all students in their school.

SESSION 15

Teaching the Essential Principles of Climate Literacy in Middle and High School (Earth)

(Middle Level–College)

Yosemite C, Hilton

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

Jessica Neely (*scienceed@kqed.org*), KQED Public Media, San Francisco, Calif.

Explore the fundamental concepts of climate science and ways to engage students using digital media resources aligned to the essential principles of climate literacy.

SESSION 16

SYM-2 Follow-Up Session: Climate Toolkits: New Tools for Educators (Env)

(General) *Golden Gate Salon C2, Marriott*

Peggy L. Steffen (peg.steffen@noaa.gov) and **Bruce Moravchik** (bruce.moravchik@noaa.gov), NOAA National Ocean Service, Silver Spring, Md.

Frank Niepold (frank.niepold@noaa.gov), NOAA, Silver Spring, Md.

Learn about new tools from federal agencies: Climate Communication Toolkit for Educators, Climate Change Wildlife and Wildlands Toolkit, and the online Climate Portal.

SESSION 17

Medical Mysteries: A FREE Online Adventure Game Using Technology, Microbiology, and the Scientific Method (Bio)

(General) *Golden Gate Salon C3, Marriott*

Kristi G. Bowling (kmg4@rice.edu) and **Leslie M. Miller** (lmml@rice.edu), Rice University, Houston, Tex.

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

Incorporate innovative technology into your science curriculum with this free interactive website that promotes inquiry while teaching about pathogens, immunity, and scientific method. Handouts.

SESSION 18

Physics from Launch to Landing (Phys)

(High School) *Pacific C, Marriott*

Natalee D. Lloyd (natalee.lloyd@tietronix.com) and **Monica Trevathan** (monica.trevathan@tietronix.com), NASA Johnson Space Center, Houston, Tex.

Inspire students in advanced physics to pursue STEM field careers as they see real applications from launch to landing of NASA's space shuttle.

SESSION 19

ASTC Session: CAISE: What We Know About Learning Science in Informal Environments (Gen)

(General) *Pacific E, Marriott*

James Bell (jbelle@astc.org), Center for Advancement of Informal Science Education, Washington, D.C.

Presider: Benjamin Dickow, Lexington, Los Angeles, Calif.

The Center for the Advancement of Informal Science Education (CAISE) connects and supports informal science educators working in science centers and museums, after-school programs, mass media, journalism, and cyber-enabled learning environments. I'll share what is known about how

people learn in informal environments, and we'll discuss connections to school science.

SESSION 20 (two presentations)

(General) *Pacific F, Marriott*

Which Technology and Why? Selecting Geospatial and Web 2.0 Tools for Environmental Science Learning (Env)

Nancy M. Trautmann (nmt2@cornell.edu) and **Courtney R. Wilson** (crw74@cornell.edu), Cornell Lab of Ornithology, Ithaca, N.Y.

Want to use emerging technologies but don't know which to try? Examine geospatial and Web 2.0 tools and leave with new ideas and relevant lessons.

Inquiry, Technology, and the Exploration of Environmental Issues (Env)

Gerald L. Ketterling (gerald.ketterling@ndsu.edu), North Dakota State University, Fargo

Use technology to engage learners and explore the nature of science with real-world environmental issues.

SESSION 21 (two presentations)

(General) *Pacific I, Marriott*

An Ocean Inventory: Bringing the Results of the First Global Census of Marine Life to the Classroom (Bio)

Celia Cackowski (ccackowski@gso.uri.edu), University of Rhode Island, Narragansett

Join a member of the program's education and outreach team to discuss the results of this unprecedented global effort and explore teaching tools created by census scientists.

Increasing Cognition by Using Live Animals (Bio)

Clay L. Rasmussen, Sul Ross State University, Alpine, Tex.

This study compared student cognition by comparing test scores of students taught using live animals with students who were taught without the use of live animals.

SESSION 22

Save the Frogs Day: April 29, 2011 (Env)

(General) *Pacific J, Marriott*

Kerry M. Kriger (kerry@savethefrogs.com), SAVE THE FROGS!, Santa Cruz, Calif.

Amphibians are rapidly disappearing worldwide. Learn why and then take action! Get your students involved in Save the Frogs Day activities on April 29.

SESSION 23 (two presentations)*(High School)**Sierra A, Marriott***Making Innovative Curricula That Teachers Want to Use: Animations, Inquiry, and Interactivity** (Bio)

Kyung-A Kwon (*kakwon@uga.edu*) and **J. Steve Oliver** (*soliver@uga.edu*), The University of Georgia, Athens
Experience innovative, interactive curricular animations for the teaching and learning of biological processes. We'll also examine some issues related to their implementation.

Preventing Misconceptions That Arise from Student Use of Realistic 3-D Animations (Bio)

Lauren J. Ivans (*ljivans@uga.edu*) and **J. Steve Oliver** (*soliver@uga.edu*), The University of Georgia, Athens
We'll share strategies for maintaining scientific accuracy while staying within the bounds of the high school science curriculum when designing 3-D animations of biological processes.

SESSION 24 (two presentations)*(General)**Sierra H, Marriott***No Teacher Left Inside: From the Field into the Classroom with the NOAA Teacher at Sea and PolarTREC Teacher Research Experience Programs** (Gen)

Elizabeth Duncan Eubanks (*hoocaca@yahoo.com*), St. Mark Catholic School, Boynton Beach, Fla.

Discover the world of Teacher Research Experience (TRE) programs. Get involved with scientific communities, improve your professional development, and enhance your students' learning.

Got Funding? Grant Opportunities to Get Your Students Outdoors (Env)

Seaberry J. Nachbar, NOAA Office of National Marine Sanctuaries, Monterey, Calif.

Learn about grant opportunities with the B-WET Program to provide students with meaningful watershed educational experiences.

SESSION 25 (two presentations)*(Middle Level–High School)**Sierra I, Marriott***Lab Notebook Confidential** (Gen)

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

Liberate yourself and your students from stacks of paper and open up the world of prompt, meaningful feedback. Proven strategies and grading rubrics included.

Podcasting Your Classroom (Gen)

Don A. Myers (*dmyers@gsesdallas.org*), Good Shepherd Episcopal School, Dallas, Tex.

Learn how to podcast lectures, discussions, and labs.

SESSION 26**Remote Online Laboratories: The Science Labs of the Future** (Gen)*(General)**113, Moscone Center*

Kemi Jona (*kjona@northwestern.edu*), Northwestern University, Evanston, Ill.

Tanya Katovich (*tkatovich@d211.org*), Schaumburg High School, Schaumburg, Ill.

Remote online labs enrich STEM education by increasing the scope of experiments students can access and by giving students experience with real equipment and data.

SESSION 27**Integrating Inquiry and Science Notebooks** (Gen)*(General)**200, Moscone Center*

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

Discover a powerful planning framework that structures 5E inquiry instruction, embeds formative assessments, and uses the seven components of science notebooks.

SESSION 28**Situated Learning for Teachers: A Model for Building Science Capacity in a New Brunswick School District** (Gen)*(General)**208/210, Moscone Center*

Crista Sprague (*crista.sprague@gnb.ca*), School District 14, Woodstock, N.B., Canada

Debby E. Peck (*peck@nbnet.nb.ca*), School District 18, Island View, N.B., Canada

This professional development model for science teachers is based on self-study and collaborative study of inquiry science through teacher-developed action research projects.

SESSION 29**The Composition of the Atmosphere** (Chem)*(Middle Level–High School)**220/222, Moscone Center*

James S. Kopchains (*jkopcha@schools.nyc.gov*), Flushing High School, Flushing, N.Y.

Amy R. Kopchains (*j.kopchains@jycos.com*), P.S. 171 Patrick Henry, New York, N.Y.

The chemistry of the air creates some wonderful opportunities for crafting laboratory exercises and classroom activities.

SESSION 30



Integrating Science and Literature: Promoting a Bright Future for Every Child (Gen)

(General) 224/226, Moscone Center
Sally C. Mayberry, Florida Gulf Coast University, Fort Myers

Ali Conant, Pelican Elementary School, Fort Myers, Fla. Introducing science units with quality children’s literature creates a positive atmosphere that enables students to be successful and actively involved in scientific learning.

SESSION 31

What’s Your Media Literacy IQ?: How to Use Web-based Videos and Other Internet Resources to Bring Science to Life in Your Classroom (Gen)

(General) 250, Moscone Center
Linda L. Jones (*ljones@coe.ufl.edu*), University of Florida, Gainesville

Explore several easy-to-use “tricks of the trade” to help you locate, evaluate, modify, and successfully incorporate web-

based science resources into your instruction. Take home media-based lesson design templates, website evaluation tools, Webquest exploration guides for students, and a starter list of reputable websites for major science topics.

SESSION 32

Science and Literacy and Language Learning: Developing Academic and Higher-Order Thinking Skills Among Deaf English Language Learners (Gen)

(General) 262, Moscone Center
Fiona Bennie (*fbennie@boston.k12.ma.us*) and **Alice Speights** (*aspeights@boston.k12.ma.us*), Horace Mann School for the Deaf and Hard of Hearing, Boston, Mass.

Supported by cognitive research, an interdisciplinary team of teachers for the deaf has created an intensive language and content-rich program for deaf students with limited formal education.

9:30–10:30 AM Workshops



NSTA Press Session: Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It (Chem)

(Elementary–High School) Continental 6, Hilton
Bill Robertson (*wrobert9@ix.netcom.com*), NSTA Press Author, Woodland Park, Colo.

Why do we believe atoms look the way they do? What’s with those fuzzy-looking orbitals for electrons? The author of the *Stop Faking It!* books entertains you with activities and concepts from the two chemistry books in the series. Lame jokes a definite possibility.

Seeing Impression and Expression in Fossils, Literacy, and Ourselves (Earth)

(Elementary–Middle Level) Continental 7, Hilton
Barbara S. McClung (*bmcclungny@aol.com*) and **Lauren Phillips**, P.S. 184 Shuang Wen Academy, New York, N.Y.

A hands-on lesson on fossils, primary document reading, and creative writing demonstrates how scientific content and literacy achievement are related and can be gracefully joined through the Aesthetic Realism teaching method.

Tea Bags for Two—Cells and You (Bio)

(Elementary–Middle Level) Continental 8, Hilton
Carson E. Krook (*cekrook@bisd.us*), Garcia Middle School, Brownsville, Tex.

Explore relationships of structure and function in cells and cellular processes using tea bags.

What Does STEM Look Like at the Elementary Level? (Gen)

(Preschool–Elementary) Golden Gate 3, Hilton
Michael J. Kaspar (*mikekaspar@aol.com*), DC STEM Alliance, Washington, D.C.

Celeste H. Pea, National Science Foundation, Arlington, Va.

Alma S. Miller, Langdon Education Campus, Washington, D.C.

Join us in exploring what STEM looks like at K–5 based on current research and participate in building a model to inform local efforts.

KWL+ 4-R's and Inquiry = Science Success (Gen)*(Preschool–Elementary)* Golden Gate 6, Hilton**Dean M. Martin** (*anderson.martin@netzero.com*), Gardner Pilot Academy, Boston, Mass.**Karen L. Anderson** (*karenanderson@stonehill.edu*), Stonehill College, Easton, Mass.

Discover how the 4-R's and inquiry can be used to motivate and organize exploration of the urban environment while helping make learning visible to students.

Blinky Bots and New Age Graffiti (Phys)*(Elementary–Middle Level)* Union Square 15/16, Hilton**Bob Thomas** (*bobthomas49@sbcglobal.net*), Retired Educator, San Pedro, Calif.**Craig Yokoi** (*craig.yokoi@lausd.net*), Purche Magnet School, Gardena, Calif.

Presider: Tim Jones, Los Angeles Unified School District Local District 8, Gardena, Calif.

Make the latest gizmos such as blinky bots and spinning mice using light-emitting diodes. Excite your students with 3-D “graffiti” art objects.

Quarks and the Standard Model: A Rummy-like Card Game (Phys)*(High School–College)* Union Square 23/24, Hilton**Mark D. Greenman** (*mgreenman2@verizon.net*), National Science Foundation, Arlington, Va.

Presider: Harriet T. Page, Marblehead (Mass.) Public Schools

Using a card game, students are guided by rules of color and charge to combine quarks into common Baryons and Mesons. Take home templates for all game pieces and game cards.

Physics Funds Stretched? Presenting Low-Budget, High-learning Activities (Phys)*(Middle Level–College)* Golden Gate Salon A, Marriott**Kathy Mirakovits** (*kmirakovits@portageps.org*) and **Lindsey McConney** (*lmconney@portageps.org*), Portage Northern High School, Portage, Mich.

Construct inexpensive demonstrations for difficult physics concepts. We'll explore at least 10 different physics concepts.

Interactive Science Notebooks: A Resource for Developing Understanding (Gen)*(Middle Level–High School)* Nob Hill B, Marriott**Kristin Newton**, Cambridge Rindge and Latin School, Cambridge, Mass.

Learn by doing how a physics teacher helps ninth-graders

build inquiry and questioning skills as they process their learning in a structured notebook system.

Genetic Engineering in Agriculture (Bio)*(High School)* Pacific A, Marriott**Stephanie Etcheverria** (*setcheverria@cfbf.com*), California Foundation for Agriculture in the Classroom, Sacramento
Presider: Jenna Swenson, California Foundation for Agriculture in the Classroom, Sacramento

Introduce students to genetic research and technology associated with agriculture. We'll look at genetic principles and tools to encourage students to think critically about genetics and agriculture.

NSF Follow-Up Session: Science Is Cool! Using Polar Science Resources in the Classroom (Env)*(Middle Level–High School/Informal)* Pacific B, Marriott**Susan B. Kelly**, Montana State University, Bozeman**Louise T. Huffman** (*lhuffman@andriil.org*), University of Nebraska, Lincoln

Polar regions contain some of the most extreme conditions on Earth and clues to global climate. Join us and take home polar science resources and activities ready to use in your classroom tomorrow!

Human Skin Pigmentation and UV Intensity (Bio)*(High School)* Pacific H, Marriott**Kathleen A. O'Sullivan**, San Francisco State University, San Francisco, Calif.**Pamela K. Harman**, SETI Institute, Mountain View, Calif.

This human evolution activity explores the distribution of patterns of human pigmentation and its causal relationship with the environment and natural selection.

Ice Core Records—From Volcanoes to Stars**(Earth)***(Informal Education)* Sierra B, Marriott**Donna L. Young** (*donna.young@tufts.edu*), The Wright Center, Medford, Mass.**Doug Lombardi** (*lombardi.doug@gmail.com*), University of Nevada, Las Vegas**Pamela Perry** (*pperry@lewistonpublicschools.org*), Lewiston High School, Lewiston, Maine

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

Teaching for Freshwater Sustainability (Env)
(General) Sierra J, Marriott

Claudia Khourey-Bowers (*cmkhoure@kent.edu*), Kent State University–Stark, North Canton, Ohio
Learn about Freshwater Education for Sustainability and then critique a lesson using the core pedagogical elements.

NASA: Survival in a Galactic Wilderness (Earth)
(Middle Level–High School) Walnut, Marriott

Pamela Whiffen (*pwpwr@aol.com*), NASA Educator Ambassador, Scottsdale, Ariz.

Journey far beyond the protective layers of Earth’s atmosphere, leave our magnetosphere far away, and experience the heliosphere. Take home a CD with activities and posters.

What’s Up? Classroom Activities from the Association for Astronomy Education, Part II—Beyond the Solar System (Earth)

(General) Yerba Buena Salon 8, Marriott

Aleya Van Doren (*aleya.vandoren@nasa.gov*) NASA Goddard Space Flight Center, Greenbelt, Md.

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

President: Aleya Van Doren

Classroom-ready hands-on astronomy activities that really work will be led by master astronomy teachers from the Association of Astronomy Educators (AAE).

Taking the Cool Demonstration to the Next Step to Develop Process Skills (Gen)

(General) Yerba Buena Salon 14, Marriott

Mary Jean Lynch (*mlynch@noctrl.edu*) and **John J. Zenchak** (*jjzenchak@noctrl.edu*), North Central College, Naperville, Ill.

Our demonstration-experiments combine uniquely designed discrepant events and structured exploration.

Supporting Standards-based Inquiry Learning (Gen)

(High School/Supervision) Yerba Buena Salon 15, Marriott

Amanda K. Wilson, Duval County Public Schools, Jacksonville, Fla.

Districts must support teachers’ move toward inquiry learning. Explore methods used to unpack benchmarks and identify assessments. We’ll share templates and resource samples.

Why Aren’t They Getting It? (Gen)
(General) 111, Moscone Center

Sharlene Kleine and **Janis Slater** (*jslater@ou.edu*), University of Oklahoma, Norman

Let’s brainstorm some approaches for addressing learning in novel ways that target conceptual understanding and use student-centered learning approaches.

It’s Not the Data, It’s the Evidence (Gen)
(Elementary–High School) 112, Moscone Center

Brian Hand, University of Iowa, Iowa City

Jay W. Staker (*jstaker@iastate.edu*), Iowa State University, Ames

Lori Norton-Meier (*lori.nortonmeier@louisville.edu*), University of Louisville, Ky.

Translating data into evidence through negotiation and argumentation promotes science learning and critical thinking. Experience the Science Writing Heuristic using language and science content.

Outside the Classroom Walls: Creating a Backpack Lesson to Expand Student Learning (Gen)

(General) 212, Moscone Center

Candace J. Lutzow-Felling (*cjl6b@virginia.edu*), The State Arboretum of Virginia, Boyce

Learn to create lessons contained in a backpack to offer your students the time and space to explore scientific concepts without classroom constraints.



Incorporating Problem Based Learning and Creativity in Integrated Science Classrooms: An International Perspective (Gen)

(Middle Level–High School) 228/230, Moscone Center

Gary M. Holliday (*ghollida@iit.edu*) and **Allison Antink** (*aantink@iit.edu*), Illinois Institute of Technology, Chicago

These lessons from an international exchange program between Taiwanese and U.S. teachers emphasize inquiry, nature of science, literacy, and scientific creativity.



Virtual Labs in the Earth Sciences: Melting Ice, Warming Climate, and Ballooning Through the Stratosphere (Earth)

(Middle Level–College) 232/234, Moscone Center

Randy M. Russell, University Corporation for Atmospheric Research, Boulder, Colo.

These activities employ computer-based simulations and interactive multimedia covering a range of Earth science topics. CDs and handouts.

NESTA Session: National Earth Science Teachers Association Earthquake Hazards and Seismology Share-a-Thon (Earth)

(Elementary–High School) Mtg. Room Hall D, Moscone Center
Michelle C. Harris (*michelle_harris@apsva.us*), Wakefield High School, Arlington, Va.

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

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

Thalia Anagnos (*thalia.anagnos@sjsu.edu*), San Jose State University, San Jose, Calif.

Tammy Bravo (*taber@iris.edu*), **Patrick McQuillian** (*taber@iris.edu*), and **John Taber** (*taber@iris.edu*), IRIS, Washington, D.C.

Jennifer Collins (*jcollins@oceanleadership.org*), Consortium for Ocean Leadership, Washington, D.C.

Ron Fabich (*rwfabich@gmail.com*), National Earth Science Teachers Association, Medina, Ohio

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

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

Michael J. Passow, Dwight Morrow High School, Englewood, N.J.

Steve C. Smith (*mrsmith@purdue.edu*), Purdue University, West Lafayette, Ind.

President: Michelle C. Harris

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



Meet Maria
NGSP Booth 1528
 following her session

NATIONAL GEOGRAPHIC

PRESENTS

Combining Science and Culture:
 Conservation and Education in the Amazon and Tibet

Dr. Maria Fadiman

Assistant Professor, Florida Atlantic University;
 Emerging Explorer, NG Science Program Consultant

Saturday, March 12 • 10:00am–11:30am

Moscone Convention Center, Room 310

Start the experience . . .

- Explore the connection between humans and the natural world.
- Learn about Maria’s experience teaching in Tibet.

Maria Fadiman conducts ethnobotanical research, primarily in the rainforests of Latin America and in Africa and Asia. She is a graduate of Vassar College, received her M.A. at Tulane University, and her Ph.D. at the University of Texas at Austin.

9:30–10:30 AM Exhibitor Workshops

Using Interactive Classroom Technologies to Advance STEM Learning for Elementary Students (Gen)

(Grades K–6) 274/276, Moscone Center

Sponsor: DYMO/Mimio

Isa Kaftal Zimmerman, IKZ Advisors, Boston, Mass.

Join Isa Zimmerman, member of the Massachusetts Governor's STEM Advisory Council, to find out how easy it is to incorporate STEM learning into physical science lessons for elementary students using interactive classroom technologies. This session will include a review of the factors at play, several promising practices, and two mini-lessons to demonstrate how current instructional technology can help students learn STEM.

NEW Astronomy Textbook Written Specifically for High School Students (Earth)

(Grades 9–12) 307, Moscone Center

Sponsor: It's About Time

Gary Curts, Dublin (Ohio) Public Schools

Developed by the education experts at TERC, *Investigating Astronomy* is the first comprehensive, yearlong astronomy curriculum designed specifically for high school students. Most astronomy books used in high school classes are text heavy and have been originally developed and written for college courses. *Investigating Astronomy* engages students with a dynamic, active learning approach and allows them to explore all the major topics in astronomy while conducting hands-on/minds-on investigations.



9:30–11:30 AM Workshop

CESI Session: Council for Elementary Science International Share-a-Thon (Gen)

(Elementary–Middle Level) Continental 5, Hilton

Per Kristian Beckman, National Centre for Education in Physics, Lund, Sweden

Roger Carter, Rösjökolan, Sollentuna, Sweden

Betty Crocker (crocker@unt.edu), Retired Educator, Denton, Tex.

Mattie Davis (mattiedavis03@yahoo.com), University of Mississippi, Marks

Carl Dewitt (seemedewitt@gmail.com), University of Mississippi, University, Miss.

Emma Dobsson (emma.dobson@stockholm.se) and **Amy Lindau** (amyli@bredband.net), Norra Ängby Skola, Bromma, Sweden

Nina Granlund (nina.ullsten@gmail.com) and **Sören Ström** (soren.strom@skola.sala.se), Kila Skola, Sala, Sweden

Elisabeth Hagman (elisabeth.hagman@edu.haninge.se), Lundaskolan, Haninge, Sweden

Ingrid Jakobsson, Sweden

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

Anna Lindblom (anna.lindblom@edu.haninge.com), Kvarnbäcksskolan, Jordbro, Sweden

Katie McDilda (katie.mcdilda@marshall.edu), Marshall University, Huntington, W.Va.

Judith McKee, Wilmette (Ill.) Public Schools

Bodil Nilsson (bodil.nilsson@mnd.su.se), Stockholm University, Stockholm, Sweden

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

Hans Persson (hanper@hanper.se), University of Stockholm, Sweden

Barbara Smith (btsmith4@bamaed.ua.edu) and **Lisa Smith** (lsmith1@bamaed.ua.edu), University of Alabama, Tuscaloosa

Sara-Maria Stenskepp (sara-maria.stenskepp@vibyskolan.se), Vibyskolan, Vallentuna, Sweden

Barbara Tharp (btharp@bcm.edu) and **Michael Vu** (mv12@bcm.edu), Baylor College of Medicine, Houston, Tex.

Stephanie Townsend (stephbfor@hotmail.com), Wooddale High School, Memphis, Tenn.

Anne Vestlund, Carlssons Skola, Stockholm, Sweden

Kay Atchison Warfield (kaw@alsde.edu), CESI President, and Alabama Dept. of Education, Montgomery

Susan Ziegler, Grayslake, Ill.

Join CESI as we share a wealth of ready-to-use, classroom-tested hands-on activities created just for the elementary teacher. Handouts and website links provided.

9:30 AM–12 Noon NSTA/SCST 2011 Joint Session: Symposium on Nanotechnology

(College)

Continental 2, Hilton

Steve Campbell, Distinguished Professor of the Institute of Technology, University of Minnesota, Minneapolis

Elaine Johnson, PI, Bio-Link, San Francisco, Calif.

Frank Kusiak, Science Educator, Lawrence Hall of Science, University of California, Berkeley

Linda Shore, Director of Teacher Institute, Exploratorium, San Francisco, Calif.

Deb Newberry, Instructor, Nanoscience Technology, Dakota County Technical College, Rosemont, Minn.

Thomas L. Deits, Science Department Chair, Lansing Community College, Lansing, Mich.

Nanotechnology is the understanding and control of matter at dimensions between approximately 1 and 100 nanometers, where unique phenomena enable novel applications. This emerging science encompasses nanoscale science, engineering, and technology. Nanotechnology involves imaging, measuring, modeling, and manipulating matter at this length scale. This symposium will highlight:

- The Tools of Nanotechnology
- Nanobiotechnology for Health and Life
- Informal Education in Nanotechnology
- Nanotechnology Curriculum Across Disciplines

10:00–11:00 AM Workshop

COSEE Session: Satellites, Sounds, and Storms: Using Satellite Data and Podcasts to Study Coastal Storms (Gen)

(Informal Education)

Willow, Marriott

Christopher J. Petrone (petrone@vims.edu), Virginia Institute of Marine Science, Gloucester Point

Learn about coastal storms using real scientific data. Work through this field test and classroom-ready activity created by the Bridge website and COSEE-NOW.

10:00–11:00 AM Exhibitor Workshop

Bio-Rad Genes in a Bottle™ Kit (Bio)

(Grades 7–College)

306, Moscone Center

Sponsor: Bio-Rad Laboratories

Leigh Brown (biotechnology_explorer@bio-rad.com), Bio-Rad Laboratories, Hercules, Calif.

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

10:00–11:30 AM Special Session

Combining Science and Culture: Conservation and Education in the Amazon and Tibet (Gen)

(General)

310, Moscone Center

Maria Fadiman, Assistant Professor, Florida Atlantic University, Boca Raton

This talk looks at combining science and culture using case studies in the Amazon and the Tibetan Plateau. Through looking at how people use plants (ethnobotany), we see how humans and the natural world are inextricably connected. Beginning with oil exploration and the companies' surprising relationship with the local people, we begin to understand the contradictions that can differ from our previously held expectations. In Tibet, through teaching local children how to do their own ethnobotanical studies, we see how working with students in their own culture and ecosystem increases empowerment through knowledge. From their own work, they reconnect to the land and themselves.

Maria Fadiman conducts ethnobotanical research (how people use plants) in the developing world. She conducts most of her studies in the rain forests of Latin America, while also doing some research in Africa and Asia. She did her undergraduate work at Vassar College, MA at Tulane University, and PhD at The University of Texas at Austin. A professor of geosciences at Florida Atlantic University, Fadiman was named one of National Geographic's Emerging Explorers.

NSTA is grateful to National Geographic School Publishing for sponsoring this speaker.



10:00–11:30 AM Exhibitor Workshops

A World In Motion®: Fuel Cell Challenge (Chem)

(Grades 6–8)

110, Moscone Center

Sponsor: SAE International

Julie MacIntyre and **Chris Ciuca**, SAE International, Warrendale, Pa.

Preview A World In Motion (AWIM) Fuel Cell Challenge as you build and test prototype PEM fuel cell–powered vehicles. During this AWIM challenge, students explore physical science, environmental science, and mathematics concepts as student teams collect, analyze, and display data. Other AWIM challenges for the middle school level will be on display.

Introduction to Wisconsin Fast Plants® (Bio)

(Grades K–12)

120, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Students can actively take part in science with new hands-on activities using Wisconsin Fast Plants. These minuscule and quick-growing plants are ideal classroom tools for exploring environmental effects, variation, life cycle, and nutrient cycling. Free materials.

Engage Student Inquiry with Carolina’s Environmental Science Labs (Env)

(Grades 9–12)

121, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Join us to experience Carolina’s environmental science series and discover the benefits of inquiry classroom labs. Learn how labs aid with science comprehension while actively engaging students. All materials are provided as well as some Carolina giveaways.

Don’t Forget the “M” in STEM: A Focus on RTI in the Math Classroom (Gen)

(Grades K–5)

122, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Experience hands-on interactive lessons for Tier 2 and 3 students in the areas of fractions, decimals, percents, and problem solving with lessons from Math Out of the Box®, developed by Clemson University’s College of Engineering and Science. These research-based lessons correlate to the Common Core State Standards. Classroom materials provided.

Computational Thinking (Gen)

(Grades 6–College)

123, Moscone Center

Sponsor: Google

Nina Kim, Google, Mountain View, Calif.

Interact directly with curriculum from both a student and teacher perspective using computational thinking. Take part in exercises that draw on concepts fundamental to computer science. Learn how to enhance the teaching of science and build solutions to problems.

Integrating Video Games and Core Curriculum (Gen)

(Grades 4–9)

124, Moscone Center

Sponsor: The JASON Project/Immersion Learning/Nautilus Live

Andre Radloff (info@jason.org) and **Lisa Thayne** (info@jason.org), The JASON Project, Ashburn, Va.

The JASON Project has broken new ground with its suite of standards-based online games designed to be integrated directly into middle school science curricula. Experience JASON’s fun, educational games on topics such as ecology, meteorology, and geology. Also, explore partner Immersion Learning’s games on a variety of ocean science topics.

Stem Cell Differentiation (Bio)

(Grades 9–12)

125, Moscone Center

Sponsor: LAB-AIDS, Inc.

Barbara Nagle, Lawrence Hall of Science, University of California, Berkeley

SGI Biology is the new high school biology course from SEPUP. Developed with NSF support, the course has five units—sustainability, ecology, cell biology, genetics, and evolution. In this workshop from the cell biology unit, participants model the process of differentiation through which stem cells produce specialized cells and explore the potential for using stem cells to cure diseases.

Chemistry and the Atom: Fun with Atom-building Games! (Chem)

(Grades 5–12)

131, Moscone Center

Sponsor: CPO Science/School Specialty Science

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

Our understanding of matter is so abstract that students have a hard time making sense of these fascinating concepts. Experience innovative games and activities that give students with different learning styles opportunities to explore and grasp atomic structure and the periodic table.

Rise Above the Storm: Introducing STEM in High School (Gen)

(Grades 9–12)

132, Moscone Center

Sponsor: PASCO Scientific

Presenter to be announced

Participate in an engineering design challenge that integrates PASCO probeware technology workshop. Walk away with many ideas for rich project-based activities that can help your students learn and apply science, technology, engineering, and math skills—all clearly mapped to relevant national standards in the STEM disciplines (NSES, NCTM, NETS, and ITEA).

Rise Above the Storm: Introducing STEM in Middle School (Gen)

(Grades 6–8)

133, Moscone Center

Sponsor: PASCO Scientific

Presenter to be announced

Participate in an engineering design challenge that integrates PASCO probeware technology. Walk away with many ideas for rich project-based activities that can help your students learn and apply science, technology, engineering, and math skills—all clearly mapped to relevant national standards in the STEM disciplines (NSES, NCTM, NETS, and ITEA).

The Science of Stem Cells and Diabetes: Microarray Analysis (Bio)

(Grades 9–College)

134, Moscone Center

Sponsor: Howard Hughes Medical Institute

Mary Colvard (mcolvard@tds.net), STANYS, Deposit, N.Y.

This inquiry-based hands-on workshop will illustrate how microarrays are used to determine which genes are expressing during the differentiation of stem cells into insulin-secreting beta cells. Video clips and animations are used to support key concepts. Attendees will receive the Howard Hughes Medical Institute's *Potent Biology* DVD and classroom-ready lessons and activities.

A Systematic Approach to Academic Language (Gen)

(Grades 4–12)

202/204, Moscone Center

Sponsor: EduChange and Teachers for Learners

Catherine Saldutti (catherine@educhange.com), EduChange, Inc., New York, N.Y.

Academic language acquisition meets differentiated instruction for ALL students in classrooms where instruction focuses on conceptual knowledge building. Come see how this cross-curricular, patented, hands-on system truly supports content learning.

Explore the Blue Near You: Bring Critical Aquatic Issues to Life with New Resources! (Gen)

(Grades K–5)

206, Moscone Center

Sponsor: Discovery Education

DEN Team Leader

With the tragedy in the Gulf of Mexico, teaching students about the value of clean and healthy waterways—as well as the importance of outdoor recreational activities—is more crucial now than ever before. The Take Me Fishing™ campaign and Discovery Education's Explore the Blue workshop will investigate these aquatic issues with hands-on and digital activities that you can take back to your classroom. Don't miss out on the free raffle to win a classroom's worth of fishing rods and reel combos from Take Me Fishing and Discovery Education!

The Layered Earth: 3-D Interactive Geology Curriculum (Earth)

(Grades 5–12)

256, Moscone Center

Sponsor: Simulation Curriculum Corp.

Herb Koller (hkoller@simcur.com), Simulation Curriculum Corp., Aurora, Ont., Canada

What powers the internal processes that produce volcanoes, earthquakes, and mountains? What is the rock cycle and how does it work? What really is an earthquake, and when and where will the next earthquake be? Join us to experience *The Layered Earth*, a new 3-D interactive geology curriculum from the makers of the award-winning *Starry Night!*

Paint It RED! Using Technology to Teach Life Science (Bio)

(Grades 6–11)

270/272, Moscone Center

Sponsor: Science Kit

Ashley Goff, Science Kit, Tonawanda, N.Y.

Are you looking for new and innovative ways to use technology to help teach life science? Spend more time on real science concepts by integrating technology that looks and feels familiar to your students.

Stream Ecology: Slimy Leaves for Clean Streams (Env)

(Grades 4–12)

300, Moscone Center

Sponsor: LaMotte Co.

Charlie Graham, Forest Grove Community School, Forest Grove, Ore.

Join us for a hands-on introduction to stream ecology. Observe aquatic macroinvertebrate specimens, participate in hands-on activities, learn classification skills, and calculate a biotic index. Learn how this project turned into a long-term study for one Oregon teacher and his students, and the new directions it took them. Door prize!

Chemistry with Vernier (Chem)

(Grades 9–College) 301, Moscone Center

Sponsor: Vernier Software & Technology

Elaine Nam (info@vernier.com) and **Jack Randall** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore. Experiments such as acid-base titration and Boyle’s law from our popular *Chemistry with Vernier* and *Advanced Chemistry with Vernier* lab books will be performed in this hands-on workshop. Conduct these experiments using LabQuest and our LabQuest Mini. See our Mini GC Gas Chromatograph and SpectroVis Plus spectrophotometer in action!

Environmental Science with Vernier (Env)

(Grades 7–College) 302, Moscone Center

Sponsor: Vernier Software & Technology

Robyn Johnson (info@vernier.com) and **Mike Collins** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Learn how to use Vernier LabQuest and sensors to study environmental science in the field or in your classroom. Water quality and other environmental topics will be explored. See the new Vernier GPS sensor and learn how to map your sampling sites and data with Google Maps and ArcGIS software.

Using Dinah Zike’s Notebook Foldables® for Lasting Understanding (Gen)

(Grades K–12) 303, Moscone Center

Sponsor: Dinah-Might Adventures, LP

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

Discover how to transform student notebooks into brain-smart tools with 3-D interactive graphic organizers called Foldables. Leave with practical ideas ready to use on Monday!

Promote Inquiry Using Chemistry Demonstrations (Chem)

(Grades 9–12) 304, Moscone Center

Sponsor: Flinn Scientific, Inc.

Irene Cesa, Flinn Scientific, Inc., Batavia, Ill.

Looking for new ways to incorporate more inquiry-based experiments in your chemistry classroom? Asking questions is the heart of inquiry, and there is no better way to get students to ask questions than with exciting, engaging demonstrations! Join us as we present classic demonstrations and describe a series of inquiry-based activities. We will

model the inquiry process, sharing a strategy that is used in the Flinn ChemTopic™ Labs series to integrate inquiry into every core curriculum topic. Take home a copy of *Oxidation and Reduction*, Volume 16 in the series.

Teaching Science Through Real-World Events

(Gen)

(Grades 6–8)

305, Moscone Center

Sponsor: Pearson

Russell G. Wright, The George Washington University, Washington, D.C.

Discover how the Event-Based Science (EBS) program successfully engages students and leads to a deep understanding of science concepts and skills. Lessons learned by the EBS Project have led to a model that you can use to create your own real-world science activities. Attendees will receive a free signed copy of an Event-Based Science Module.

Bringing Biology to Life

(Bio)

(Grades 9–12)

308, Moscone Center

Sponsor: Houghton Mifflin Harcourt

Stephen Nowicki, Duke University, Durham, N.C.

Beth Swayze, Houghton Mifflin Harcourt, Austin, Tex.

Biology offers a unique opportunity to engage students because almost everything in today’s world is affected by biological discoveries. Identify ways to connect this subject to students’ daily lives to motivate their interest and spark their imagination.

Human Genetics of Alcohol Consumption and Metabolism (Bio)

(Grades 9–College)

309, Moscone Center

Sponsor: EDVOTEK

Jack Chirikjian (info@edvotek.com) and **Tom Cynkar** (info@edvotek.com), EDVOTEK, Bethesda, Md.

Polymorphisms can alter protein primary structures and often protein function. Participate in two simulation experiments using PCR coupled to RFLP analysis to detect polymorphisms. This experiment demonstrates variations existing in alcohol metabolism among individuals and their metabolic consequences. (Research is supported by SBIR grants to EDVOTEK from NIAAA).

10:30 AM–12 Noon Shell Science Seminar**Science Is Sexy!****(Gen)***(General)*

103, Moscone Center



Ira Flatow (iflatow@sciencefriday.com), President and Executive Producer, Science Friday, Stamford, Conn.

Presider: Judi Wilson (jwilson@sjcoe.net), San Joaquin County Office of Education, Stockton, Calif.

After many years of efforts by scientists and educators to make science interesting to children and young adults, the popular culture has “discovered” science. New and very popular television programs like *The Big Bang Theory* and new popular books about science and math have made science “sexy” once again. There is even a new Barbie™ doll—an engineer geek! This presentation will look at some of these cultural advances as educational opportunities, as well as others afforded by social communities on the internet.

Veteran NPR science correspondent and award-winning TV journalist Ira Flatow is the host of NPR’s Science Friday®, bringing radio and internet listeners worldwide a lively, informative discussion on science, technology, health, space, and the environment. He is also founder and president of the Science Friday Initiative, a 501(c)(3) nonprofit company dedicated to creating radio, TV, and internet projects that make science “user friendly.”

On television, Flatow has discussed cutting-edge science stories on a range of programs, including the new digital Cablevision program Maximum Science. He also hosts the four-part PBS series Big Ideas, produced by WNET in New York. His numerous TV credits include six years as host and writer for the Emmy award-winning Newton’s Apple on PBS, science reporter for CBS This Morning, Westinghouse, and cable’s CNBC. He has talked science on many TV talk shows, including Today, Charlie Rose, and Oprah. Flatow has hosted numerous science-related webcasts for Discovery Online and the American Museum of Natural History in New York. His Science Friday Kids’ Connection web pages were honored as one of the top 500 websites in the country by Home PC Magazine. His podcasts are frequently in the top 10 of all downloads on the iTunes website.

His recent honors include the National Science Board Public Service Award (2005), AAAS Journalism Award (2000), and the Carl Sagan Award (1999).

NSTA is grateful to Shell for sponsoring this session.

10:30 AM–12 Noon Shell Science Seminar**Roaming Planets, Falling Apples, Bending Light, Whirling Galaxies****(Gen)***(General)*

104, Moscone Center



Helen R. Quinn (quinn@slac.stanford.edu), Professor Emerita of Physics, Stanford Linear Accelerator Center, and Chair, Board on Science Education, The National Academies, Menlo Park, Calif.

Presider: James E. Marshall (jamesm@csufresno.edu), California State University, Fresno

Roam back and look into a history of ideas about gravity and how they developed as a model for the kinds of questions that are productive to ask in science.

Helen R. Quinn is emerita professor of Physics at Stanford Linear Accelerator Center where she chaired the department of Particle Physics and Astrophysics. She graduated from Stanford in 1963 and received her PhD at Stanford in 1967. Dr. Quinn is an internationally recognized theoretical physicist who holds the Dirac Medal (from Italy) and the Klein Medal (from Sweden) for her contributions to the field.

In addition to her scholarship in physics, Dr. Quinn is chair of the National Academy’s Board on Science Education (BOSE) and served as a member of a BOSE study that resulted in the report Taking Science to School. She is currently leading a committee working to develop a new framework for science education standards that is expected to have a national impact on the next generation of science standards and curricula. Her involvement in science education also extends to being a contributor to the California State Science Standards development process and co-chair of Stanford’s K–12 Initiative.

NSTA is grateful to Shell for sponsoring this session.

10:30 AM–12 Noon Exhibitor Workshop

Art vs. Science: The Role of Science in the Wine-making Process (Gen)

(Grades 7–12) 236/238, Moscone Center

Sponsor: Fisher Science Education

David Doty, Swift Optical Instruments, Inc., San Antonio, Tex.

Jim Bertsch, Aldon Corp., Avon, N.Y.

From the vineyard to the table, modern winemakers employ a multitude of scientific techniques to help control every stage of the wine-making process. Learn how contemporary wine-makers use biology, chemistry, and physical science to help face the challenges of producing the highest quality wines, while still maintaining the integrity of their art. Activity guides will be provided. Attendees will be entered into a drawing to win science equipment, which will be awarded during a drawing at the completion of the workshop. This is a hands-on workshop, and seating is limited to 30 attendees.

11:00–11:30 AM Presentation

SESSION 1

Chemistry at NASA (Chem)

(High School) Pacific C, Marriott

Natalee D. Lloyd (natalee.lloyd@tietronix.com) and **Monica Trevathan** (monica.trevathan@tietronix.com), NASA Johnson Space Center, Houston, Tex.

Inspire advanced chemistry students to pursue STEM field careers as they see real applications from the space program at NASA.

11:00–11:30 AM Workshop

COSEE Session: What's That? An Inquiry-based Approach to Squid Dissections (Bio)

(Informal Education) Willow, Marriott

Emily Griffen and **Sarah Pedemonte** (spedemonte@berkeley.edu), Lawrence Hall of Science, University of California, Berkeley

Dissect a squid while exploring inquiry-based techniques for teaching adaptations and engaging students. Learn to guide a student-centered dissection while addressing life science standards.

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

Dr. Art's Planet Earth Show (Gen)
(General) 102, Moscone Center



Art Sussman (asussma@wested.org), Senior Project Director, WestEd, San Francisco, Calif.

President: John (Jack) Padalino, President Emeritus, Paul F-Brandwein Institute, Unionville, N.Y.

Introduction of Speaker: Keith Wheeler, President, Paul F-Brandwein Institute, Greenville, N.Y.

Dr. Art's Planet Earth Show combines exciting scientific demonstrations with audience participation. Based on the books *Dr. Art's Guide to Planet Earth* and *Dr. Art's Guide to Science*, the show provides an entertaining way to teach and learn key principles that explain how our planet works. If you come to the show, you will find out why Dr. Jane Goodall said, "Art Sussman joyfully explains science we all need to know. His presentation captures the imagination of people of all ages and invokes a sense of wonder."

Art Sussman has playfully labored the past 30 years in developing innovative methods to teach science in meaningful and fun ways. After receiving his doctorate in biochemistry from Princeton, he pursued research at Oxford University, Harvard University, and the University of California at San Francisco (UCSF). At UCSF, he helped launch the Science and Health Education Partnership and edited the book Science Education Partnerships: Manual for Scientists and K–12 Teachers.

As senior project director at WestEd, Sussman has helped California, Nevada, and Utah implement science education standards. Sussman also led NSTA's Building a Presence for Science project in California. He is currently co-principal investigator of a climate change education partnership involving the Pacific Islands.

He has authored books, including Dr. Art's Guide to Planet Earth and Dr. Art's Guide to Science: Connecting Atoms, Galaxies, and Everything in Between. In addition to writing books, he shares his unique teaching ideas via DVD, his website (www.guidetoscience.net/cs/draft/print/docs/draft/home.htm), and presentations at conferences and science centers internationally.

NSTA is grateful to Paul F-Brandwein Institute, Inc., for sponsoring this session.

National Earth Science Teachers Association Events at 2011 San Francisco NSTA Conference



Friday, March 11

- 9:30-10:30 **NESTA Geology Share-a-Thon**, Moscone, Meeting Room Hall D
- 11:00-12:00 **NESTA Oceans & Atmospheres Share-a-Thon**, Moscone, Meeting Room Hall D
- 12:30-1:30 **NESTA Space Science Share-a-Thon**, Moscone, Meeting Room Hall D
- 2:00-3:00 **American Geophysical Union Lecture!**
“Our Eye on the Sun - the Latest from SDO - the Solar Dynamics Observatory”, by Dr. Todd Hoeksema, Moscone 104
- 6:30-8:00 **NESTA Friends of Earth Science Reception**, Marriott San Francisco Marquis, Club Room

Saturday, March 12

NESTA Earth and Space Science Resource Day: Earthquake Hazards and Seismology

All events at the Moscone Center, Meeting Room Hall D, except Breakfast

- 7:00-8:30 **NESTA Resource Day Breakfast**
“Bringing a earthquake seismology into your classroom with the Quake-Catcher Network”, Prof. Jesse Lawrence, Stanford University, Marriott San Francisco Marquis, Nob Hill A
- 9:30-10:30 **NESTA Earthquake Hazards and Seismology Share-a-Thon**
- 11:30-2:30 Three **NESTA Advances in Earth and Space Science Lectures!**
 - 11:30-12:30 **“Earthquake Forecasting in California”**,
by Cynthia Pridmore, California Geological Survey
 - 12:30-1:30 **“Imaging the Earth Beneath our Feet – Pictures of the Earthquake-Producing Machinery in the Western US and Alaska”**,
by Dr. Gary Fuis, USGS
 - 1:30-2:30 **“The Tortoise and the Hare: A Tale of Faults that Creep”**,
by Prof. Matthew d'Alessio, Cal State Northridge
- 3:30-5:00 **NESTA Rock and Mineral Raffle**
- 5:00-6:30 **NESTA Annual Membership Meeting**



NESTA gratefully acknowledges cosponsorship of our events by the American Geophysical Union and the Incorporated Research Institutions for Seismology



11:00 AM–12 Noon Presentations

SESSION 1

Bugs, Bugs, Bugs: Using Digital Microscopes to Explore Water Ecology (Env)

(Middle Level) Golden Gate 5, Hilton

Tracie F. Cain (*tcain02@charter.net*), Academy of the Sacred Heart, St. Charles, Mo.

Use digital microscopes to identify invertebrates and determine the health of a pond, stream, or river. Learn how to prepare a grant to fund technology projects.

SESSION 2

Transforming Undergraduate Education for Science Teaching in the Hands-On Lab (Gen)

(Elementary–Middle Level/College) Golden Gate 8, Hilton

Bev Marcum (*bmarcum@csuchico.edu*) and **S. Tanya Heaston** (*sheaston@csuchico.edu*), California State University, Chico

Presider: Scott Croes, Shasta Community College, Redding, Calif.

Come learn how combining an undergraduate course with professional development for teachers through exciting K–8 science lessons results in increased confidence in science learning for all.

SESSION 3

How Can I Apply Research to My Science Classroom? (Gen)

(General) Union Square 3/4, Hilton

Patricia Simmons, NSTA President-Elect, and North Carolina State University, Raleigh

Find out how to apply the latest research findings on science teaching to improve student learning in your classroom.

SESSION 4

Claim, Evidence, and Reasoning: Supporting Middle School Students in Evidence-based Scientific Explanations (Gen)

(Middle Level) Union Square 13, Hilton

Katherine L. McNeill (*kmcneill@bc.edu*), Boston College, Chestnut Hill, Mass.

Here is a framework for scientific explanation (claim, evidence, and reasoning) that uses examples of student-written work and video clips of teaching strategies.

SESSION 5

Educating Beyond the Classroom: Community Service Projects (Gen)

(College) Union Square 14, Hilton

Jeremy A. Ervin (*jeremy.ervin@stockton.edu*), Richard Stockton College of New Jersey, Pomona

Learn how to implement community service projects in your NSTA Student Chapter group.

SESSION 6

The Importance of Effective Communication Between Teachers and Parents (Gen)

(General) Union Square 17/18, Hilton

Ava Mobini, Teachers College, New York, N.Y.

Becky McCoy (*rlmccoy@interact.ccsd.net*), Sunrise Mountain High School, Las Vegas, Nev.

Through research in schools, we have determined effective strategies for parent communication and involvement.

SESSION 7

STARBASE Montana to Infinity and Beyond: Exciting STEM Lessons Taught with Humor and Multimedia (Gen)

(Elementary–Middle Level) Union Square 19/20, Hilton

Karla A. Williams (*kwilliams@helena.k12.mt.us*), STARBASE Montana Instructor, Helena Public Schools, Fort Harrison, Mont.

Jon D. Runnalls (*jrunnalls@helena.k12.mt.us*), Helena Public Schools, Fort Harrison, Mont.

We will share grades 4–6 student-tested hands-on/minds-on inquiry lessons with free resources as well as classroom management and teaching strategies.

SESSION 8

NMLSTA Session: Win Big! Write a Grant (Gen)

(General) Union Square 21, Hilton

Patty McGinnis (*pmcginnis@methacton.org*), Arcola Intermediate School, Eagleville, Pa.

Kitchka Petrova (*kpetrova7@dadeschools.net*), Ponce De Leon Middle School, Coral Gables, Fla.

Are you in need of lab equipment? Are you short on funds? Tips for successful writing and funding sources will be shared by two educators who have been awarded numerous grants for their teaching.

SESSION 9**If You Build It (Well), They Will Come (and Stay)! Designing and Facilitating a Leadership Academy for Science Instruction (Gen)***(General)* *Union Square 25, Hilton***Margo Bartiromo**, Merck Institute for Science Education, Rahway, N.J.**Susan Elko**, Education Consultant, Exton, Pa.

Presider: Carlo Parravano, Merck Institute for Science Education, Rahway, N.J.

A partnership between school districts and the Merck Institute for Science Education implemented a professional development program that incorporates theory, research, and some very valuable lessons.

SESSION 10 (two presentations)*(Middle Level)* *Yosemite C, Hilton***Wikis 101: Bringing Collaborative Technology into the Classroom (Gen)****Lauren Beal** (*lgbeal@philasd.org*), AMY Northwest Middle School, Philadelphia, Pa.

Learn methods and strategies for introducing wikis into any science classroom. Leave with lessons and classroom management techniques. This session is geared toward those new to wikis.

Digital Natives (Gen)**Minoo Srivastava**, W.A. Perry Middle School, Columbia, S.C.

Here are some great tools for everyday, interactive whole-group instruction. The benefits are endless—they're great for demonstrations, they're colorful and animated, and they accommodate various learning styles.

SESSION 11**SYM-2 Follow-Up Session: Climate's Canary in a Coal Mine: Arctic Sea Ice (Earth)***(Informal Education)* *Golden Gate Salon C2, Marriott***Walt N. Meier** (*walt@nsidc.org*), University of Colorado at BoulderPresider: Frank Niepold (*frank.niepold@noaa.gov*), NOAA, Silver Spring, Md.

Find out about the latest findings on the impacts of climate change on the Arctic and sea ice from a climate scientist.

SESSION 12 (two presentations)*(Middle Level–High School)* *Golden Gate Salon C3, Marriott***Nature of Science and Online Biology Simulations, Activities, and Experiments (Bio)****Katrina Roseler**, Florida State University, Tallahassee

These online resources are interactive, include processing skills for higher-level learning, and address NOS tenets. Where are they and how do you identify them?

Interactive Learning Resources for the Grades 6–12 Genetics and Biotechnology Lab (Bio) Presenter to be announced

Students like labs...and the internet. See how to use a new internet resource—LabCenter—that supports several popular genetics and biotechnology laboratories.

SESSION 13 (two presentations)*(General)* *Nob Hill C, Marriott***Development of Human Capital Through Students' Involvement in Practical (Investigative) Lessons (Phys)****Kamarudin Nurzatulshima**, Universiti Putra Malaysia, Selangor

Experienced physics teachers studied student involvement in investigation. Active involvement in the learning environment generated creative, critical, innovative, and skillful human capital.

Learning Physics Through Engineering: Teaching and Assessment Strategies (Phys)**Ulpiano Frederick Pontillas** (*upontillas@boston.k12.ma.us*), John D. O'Bryant School of Mathematics and Science, Boston, Mass.

Urban science teachers discuss how they teach physics and assess student learning in a project-based engineering curriculum.

SESSION 14**NSF Follow-Up Session: Under the Ice: Studying One of the Last Unexplored Aquatic Environments on Earth (Earth)***(Informal Education)* *Pacific B, Marriott***Slawek Tulaczyk**, University of Santa Cruz, Calif.

New research in Antarctica has uncovered how dynamic ice sheets and glaciers really are. Using satellite imagery and an on-the-ground technique, "active seismic imaging" scientists are discovering a vast unexplored, interconnected hydrologic system.

SESSION 15

ASTC Session: Building Skills for Raising Girls' Interest in Science and Engineering (Gen)

(General) Pacific E, Marriott

Laura Huerta Migu (*lhuertamigu@astc.org*), Association of Science-Technology Centers, Washington, D.C.

Jody Brown (*jabrown@miamisci.org*) and **Cheryl Lani Juarez** (*cheryl@miamisci.org*), Miami Science Museum, Coral Gables, Fla.

Informal science education organizations across the country are developing great products and programs aimed at inspiring girls to explore science and engineering. Learn about the unique trends and strategies for engaging girls in STEM in informal learning environments and how to join the Girls RISEnet project.

SESSION 16

Science On a Sphere (SOS): Help in Visualizing Global Systems (Env)

(General) Pacific F, Marriott

Tony P. Murphy (*apmurphy@stkate.edu*), St. Catherine University, St. Paul, Minn.

SOS, a NOAA data visualization artifact, helps students understand global systems in an exciting, vibrant way.

SESSION 17

Students and Teachers Restoring A Watershed (STRAW) (Env)

(General) Pacific J, Marriott

Laurette Rogers and **Sandy Neumann**, STRAW (Students and Teachers Restoring A Watershed), Novato, Calif.

Learn about an award-winning habitat restoration project begun and implemented by K–12 students that has galvanized the local community and led to significant education innovations.

SESSION 18

Grab Bag of Bio (Bio)

(High School) Sierra A, Marriott

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

Explore a wide variety of biology activities, ideas, and resources that I have created or collected over the past 10 years.

SESSION 19

The Hydrogen Rocket Lab (Chem)

(High School) Sierra C, Marriott

Brian P. Wright (*ilovechem@gmail.com*), Olympia High School, Olympia, Wash.

Use introductory chemistry to teach your students how to conduct qualitative analysis and scientific inquiry to build and launch a hydrogen-powered rocket.

SESSION 20

Integrating Digital Images and Video in the Science Classroom (Gen)

(Middle Level–High School) Sierra E, Marriott

Jennifer Maeng (*jl7d@virginia.edu*), **Randy L. Bell** (*randybell@virginia.edu*), and **Bridget K. Mulvey** (*bkm2x@virginia.edu*), University of Virginia, Charlottesville

Learn how to enhance science instruction with digital media. We'll provide tools and instructional models to effectively integrate images and video into student-centered lessons.

SESSION 21

Bring the Ocean into Your Classroom with National Marine Sanctuaries (Env)

(General) Sierra H, Marriott

Claire Fackler (*claire.fackler@noaa.gov*), NOAA Office of National Marine Sanctuaries, Santa Barbara, Calif.

Increase ocean and climate literacy with free educational resources and hands-on field experiences. Free materials!

SESSION 22

It's About Discovery (Gen)

(High School) Sierra I, Marriott

Dean Cristol (*cristol.2@osu.edu*) and **Brittany Collier-Gibson** (*collier-gibson.1@osu.edu*), The Ohio State University, Lima

This unique partnership brings students and teachers together, extending students' readiness for STEM careers and equipping teachers with content-rich information to prepare students for challenging hands-on STEM curricula.

SESSION 23

K–12 Multicultural Share-a-Thon (Gen)

(General) Yerba Buena Salon 8, Marriott

Michael J. Lowry, NSTA Director, High School Science Teaching, and The McCallie School, Chattanooga, Tenn.

Kathy Prophet, NSTA Director, Middle Level Science Teaching, and Hellstern Middle School, Springdale, Ark.

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

Melvina Jones (*mjteachme@aol.com*), NSTA Director, Pre-school/Elementary, and John Burroughs Education Campus, Washington, D.C.

Come join NSTA Division Directors, District Directors, and Standing Committee Members in this special share-a-thon that highlights science activities and investigations for students in prekindergarten through high school. Be prepared to move around this round robin–style event that will surely energize your science instruction and your students' learning.

SESSION 24

The Internet Science and Technology Fair: 2011 Update (Gen)

(Elementary–High School) 113, Moscone Center

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

Learn about the Internet Science and Technology Fair (ISTF), an online science and technology competition for elementary, middle school, and high school students.

SESSION 25

The Multiple Dimensions of Scientific Inquiry in the PreK–12 School Setting (Gen)

(General) 200, Moscone Center

Carol A. Brennan (*carolb@hawaii.edu*), University of Hawaii, Honolulu

Transform your science class into an authentic research community using multiple inquiry modes characteristic of research in the natural sciences.

SESSION 26

Mentoring for Meaning (M4M) in Math and Science: A Journey into Inquiry, Collaborative Practice, and Instructional Leadership (Gen)

(Middle Level–College/Supervision) 208/210, Moscone Center

Elaine Franklin (*efranklin@wcu.edu*) and **Victor Agraz** (*vagr@wcu.edu*), Western Carolina University, Cullowhee, N.C.

M4M is a multiyear project designed to foster a culture of inquiry and build instructional leadership among secondary math and science teachers in western North Carolina.

SESSION 27



Fossils: Where Biology and Geology Intersect (Earth)

(Preschool–Middle Level/Informal) 220/222, Moscone Center

Cantey R. Smith (*canteys@tellusmuseum.org*), Tellus Science Museum, Cartersville, Ga.

Revisit the basics of fossils from biological and geological

perspectives; experience how an object can engage students, enliven instruction, and ensure learning; and leave with three fossils to add to your collection.

SESSION 28



Integrating Science Literacy and English Literacy in the K–12 Science Classroom: Benefits for Deaf, Hard of Hearing, and Hearing Students (Gen)

(General) 224/226, Moscone Center

L.K. Quinsland, National Technical Institute for the Deaf, Rochester, N.Y.

Explore the teaching strategies that promote science and written English literacy (K–college) with deaf, hard of hearing, and hearing students.

SESSION 29



Promoting Scientific Creativity in the Chemistry Classroom (Chem)

(High School) 228/230, Moscone Center

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

This series of activities for the high school chemistry classroom is designed to promote scientific creativity.

SESSION 30

NSTA NSTA Avenue Session: Spirit of Innovation Teacher Orientation (Gen)

(High School) 232/234, Moscone Center

Josh Neubert (*joshua.neubert@conradfoundation.org*), Conrad Foundation, San Francisco, Calif.

Mikayla Diesch (*mikayla@solarflarebar.com*) and **Shannon Diesch** (*shannon@solarflarebar.com*), Conrad Foundation/Pennfield High School, Battle Creek, Mich.

An introduction for high school teachers to the Spirit of Innovation Awards. We'll walk through the competition process and give prizes to teachers.

SESSION 31 (two presentations)

(General) 250, Moscone Center

Collaborative Learning in the 21st Century: The Science of Simulation Meets Social Networking (Gen)

Ajoy Vase (*mrvase.math@gmail.com*), William and Carol Ouchi High School, Los Angeles, Calif.

Amol Patel, Heritage High School, Leesburg, Va.

We will report on a groundbreaking educational experience in which student teams from California, Illinois, and Virginia work remotely to design online engineering models that reframe biological problems.

From Florida to Oregon: A Collaborative Effort to Teach Students About Social Networking, Birds, and the Scientific Method via the BirdSleuth Program and Free Online Wikispaces (Gen)

Elizabeth Duncan Eubanks (*hoocaca@yahoo.com*), St. Mark Catholic School, Boynton Beach, Fla.

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

Phil Kahler (*philk@tvja.org*), Tualatin Valley Academy, Hillsboro, Ore.

Free online technology such as the BirdSleuth program and wikispaces benefits both students and teachers and keeps the planet green. Learn about our online collaborative working group.

SESSION 32

Climate Change Science as a Vehicle for Teaching a Foreign Language (Gen)

(General) 262, Moscone Center

Louise T. Huffman (*lhuffman@andrill.org*) and **Bethany Sanio** (*bsanio2@unl.edu*), University of Nebraska, Lincoln

A model for teaching foreign language through content has been successfully piloted. We'll share the challenges, the successes, and resource materials.

11:00 AM–12 Noon Workshops



NSTA Press Session: Stop Faking It! Finally Understand LIGHT and SOUND So You Can Teach It (Phys)

(Elementary–Middle Level) Continental 6, Hilton

Bill Robertson (*wrobert9@ix.netcom.com*), NSTA Press Author, Woodland Park, Colo.

Join the author of the *Stop Faking It!* books for hands-on activities and concepts contained in the *Light* and *Sound* books. Color addition and subtraction along with light and sound interference will be covered. Secret messages, too!

What's Up with Planet Earth? Exploring Global Issues (Earth)

(Elementary–Middle Level) Continental 7, Hilton

Michael Vu (*mv12@bcm.edu*), Baylor College of Medicine, Houston, Tex.

Discover a world of inquiry-based online resources—the whole package. Units include content presentations, ready-to-go lessons, math and language arts connections—and available 24/7, all for FREE!

A Virtual Field Trip Connecting Classrooms to Antarctic Penguins and Global Climate Change (Bio)

(Elementary–Middle Level) Continental 8, Hilton

Jean Pennycook (*jean.pennycook@fresnounified.org*), Fresno (Calif.) Unified School District

Our interactive website takes classrooms on a virtual field trip to watch life as it unfolds in an Adelie penguin breeding colony in Antarctica.



NSTA Press Session: Using the National Science Facilities Standards to Plan and Design Your School Science Classroom/Laboratory (Gen)

(General) Continental 9, Hilton

LaMoine L. Motz (*llmotz@comcast.net*), 1988–1989 NSTA President, and Oakland County Schools, Waterford, Mich.

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

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

Presider: LaMoine L. Motz

Join the NSTA Team on Planning and Designing School Science Facilities for an action-packed, interactive session on planning and designing your science facilities. Learn how the latest research on effective teaching and safe practices provides you with a guide to what makes effective/modular and safe teaching spaces for science and how your input can influence the planning and designing of effective facilities.

Young Learners Meet the Scientific Process (Gen)

(Elementary) Golden Gate 6, Hilton

Robert Stremme, NBCT, Eastern University, St. Davids, Pa.

Hear how primary-age learners use hands-on 3-D graphic organizers to understand the scientific process.

I Am Not Afraid of Teaching Physics! (Phys)

(Elementary–Middle Level) Union Square 15/16, Hilton

Sanghee Choi (*schoi6@memphis.edu*), The University of Memphis, Tenn.

These inquiry activities explore electricity topics from lightning bulbs to electronic circuits to building your own flashlight.

How Can Technology Brighten Up the Photon and Cool Down a Slug? (Chem)*(High School–College)* Union Square 22, Hilton**Todd D. Morstein**, Glacier High School, Kalispell, Mont.

Use the TI-Nspire to help students learn about energy (light, specific heat, and enthalpy) through simulation, experimentation, and assessment.

Ranking Tasks in Physics (Phys)*(High School–College)* Union Square 23/24, Hilton**Ann Hammersly** (*ahammersly@susd.org*), Chaparral High School, Scottsdale, Ariz.

Ranking tasks are problems that require students to apply and articulate their understanding. I will share samples and you will create your own.

Get Moving! Kinesthetic Tools for Excellence in Middle School Science (Gen)*(Middle Level–High School)* Golden Gate Salon A, Marriott**Brian J. Ciuffreda** (*bciuffreda@princetoncharter.org*) and **Mark F. Schlawin** (*mschlawin@princetoncharter.org*), Princeton Charter School, Princeton, N.J.

Learn to use some of the standards-based physical activities and “kinesthetic clue” mnemonic devices used at one of New Jersey’s top-performing middle schools.

STEM, Literacy, and the Collaborative Classroom: Putting It All Together (Gen)*(Middle Level–High School/Supv)* Nob Hill A, Marriott**Marlene Thier** (*mthier@berkeley.edu*), Writer/Consultant, Berkeley, Calif.

Experience how grades 5–10 students can do inquiry-based STEM activities in a collaborative environment while improving oral and written language skills.

Engaging Labs and Activities Using GarageBand (Phys)*(High School)* Nob Hill B, Marriott**James J. MacLachlan**, Humboldt Secondary School, St. Paul, Minn.

Use GarageBand software to perform several engaging and accessible labs demonstrating the concepts of waves, sound, and electronics.

Chemistry Inquiry: A Cognitive Model for Scaffolding Elementary Science Investigations (Chem)*(General)* Nob Hill D, Marriott**Fred Estes** (*festes@nuevaschool.org*), The Nueva School, Hillsborough, Calif.**Lisa Dettloff**, Passion for Inquiry, Mill Valley, Calif.

These fun and easy inquiry chemistry lessons use a design model based on current cognitive research to build independent learning in elementary students.

Stem Cells: Science and Ethics (Bio)*(Middle Level–College)* Pacific H, Marriott**Jeanne T. Chowning** (*jchowning@nwabr.org*), Northwest Association for Biomedical Research, Seattle, Wash.**Jessica Oya** (*jessica.oya@gmail.com*), Life Academy of Health and Bioscience, Oakland, Calif.

Explore the science behind stem cells as well as the ethical implications of embryonic stem cell research using these engaging hands-on activities. Take home the five-lesson unit on CD.

Build a Skeleton (Bio)*(Middle Level–High School)* Pacific I, Marriott**Melanie Hester**, Florida State University School, Tallahassee

In this cross-curricular unit involving geometry and anatomy students practice using ratios and scaling while building a life-sized skeleton out of newspaper. Handouts and samples.

Global Connections: Forests of the World (Env)*(Middle Level–High School/Informal)* Sierra J, Marriott**Al Stenstrup** (*astenstrup@forestfoundation.org*) and **Jackie Stallard** (*jstallard@forestfoundation.org*), Project Learning Tree, Washington, D.C.**Kay Antunez** (*kay.antunez@fire.ca.gov*), California Dept. of Forestry and Fire Protection, Sacramento

Project Learning Tree’s new secondary module *Global Connections: Forests of the World* explores this vital component of Earth’s natural systems. Activity module and poster sets provided.

Exploring Mars in Three Dimensions (Earth)*(General)* Walnut, Marriott**David V. Black** (*elementsunearthed@gmail.com*), Walden School of Liberal Arts, Orem, Utah

These activities demonstrate how scientists acquire data and model 3-D landforms on Mars and Earth.

Hello, Mercury! (Earth)
(General) Yerba Buena Salon 14, Marriott

Nancy Tashima (*tashima@aloha.net*), Onizuka Space Center, Kailua-Kona, Hawaii

The NASA MESSENGER spacecraft is poised for the first-ever orbit insertion around Mercury in March 2011. Learn about the latest discoveries and challenges of this historic mission.

College Readiness–aligned Lab Experiences (Gen)
(High School) Yerba Buena Salon 15, Marriott

Selina L. Bartels (*sbartels@iit.edu*), Illinois Institute of Technology, Chicago

Amethyst Erienne Phillips, Homewood-Flossmoor High School, Flossmoor, Ill.

Use this hands-on lab experience to prepare students for College Entrance Exams. We'll also look at pre-test, post-test, and three-year scaffolded college test prep curricula that can be integrated into any science program.

Getting Started with Farm to School Projects: Teaching Across the Curriculum and Fighting Childhood Obesity (Gen)
(General) 111, Moscone Center

Patricia L. Bricker (*bricker@email.wcu.edu*), Western Carolina University, Cullowhee, N.C.

Emily Jackson (*emily@asapconnections.org*), Appalachian Sustainable Agriculture Project, Asheville, N.C.

Interested in farm field trips, school gardens, local food served in school cafeterias, and cooking classes? Learn Farm to School possibilities and practical start-up ideas.

Scientific Literacy and Technological Change (Gen)
(Middle Level–College) 112, Moscone Center

Julianne R. Opperman, Greely High School, Cumberland, Maine

Navigate new electronic communication technologies that students need for contemporary scientific practice—hypothesis formation, data analysis and presentation, and peer review.

Improving Our Students' Graphing and Graph Interpretation Practices (Gen)
(General) 212, Moscone Center

Anthony W. Bartley (*abartley@lakeheadu.ca*), Lakehead University, Thunder Bay, Ont., Canada

G. Michael Bowen, Mount Saint Vincent University, Halifax, N.S., Canada

Engage in model inquiry activities and take home a handbook on improving students' data literacy.

11:00 AM–12 Noon Exhibitor Workshops
Using Interactive Classroom Technologies to Advance STEM Learning for Secondary Students (Gen)

(Grades 7–12) 274/276, Moscone Center

Sponsor: DYMO/Mimio

Isa Kaftal Zimmerman, IKZ Advisors, Boston, Mass.

Join Isa Zimmerman, member of the Massachusetts Governor's STEM Advisory Council, to find out how easy it is to incorporate STEM learning into physical science lessons for secondary students using interactive classroom technologies. This session will include a review of the factors at play, several promising practices, and two mini-lessons to demonstrate how current instructional technology can help students learn STEM.

Teaching STEM in the 21st Century: Integrating Project-based Curricula and Probeware in Your Everyday Lessons (Gen)

(Grades 6–8) 307, Moscone Center

Sponsor: It's About Time

Mickie Richardson, Fourier Systems Inc., Orland Park, Ill.

Let's explore the many benefits of using technology and a project-based inquiry approach in middle school science. You'll leave with activities that you can implement in your own classroom.

11:00 AM–12:30 PM Exhibitor Workshop

FOSS California Leadership Academy (Gen)
(Grades K–8) 130, Moscone Center

Sponsor: Delta Education/School Specialty Science—FOSS
Linda De Lucchi, Lawrence Hall of Science, University of California, Berkeley

Join us as a panel of FOSS California Leadership Academy administrators and teachers share their experiences in implementing active science learning in their schools. They'll discuss the school leadership model, their vision for a science-center school, the structure for providing materials and ongoing support, the professional development model, the change in school culture, and student outcomes.

11:30 AM–12 Noon Presentation**SESSION 1****Making Sense of Science (Gen)***(Elementary)**Golden Gate 2, Hilton*

Greg Hill-Ries (greh@mmfsnyc.org) and **Stacy Miller** (stacym@mmfsnyc.org), Mary McDowell Center for Learning, Brooklyn, N.Y.

Understanding, speaking, and writing about science are challenging for students with language-based learning disabilities. Explore strategies to support and enhance students' abilities to access language.

11:30 AM–12:30 PM Special Session**NESTA Session: Advances in Earth and Space Science
Lecture 1: Earthquake Forecasting in California****(Earth)***(Informal Education) Meeting Room Hall D, Moscone Center*

Cynthia L. Pridmore (cpridmore@consrv.ca.gov), Engineering Geologist, California Geological Survey, Sacramento

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

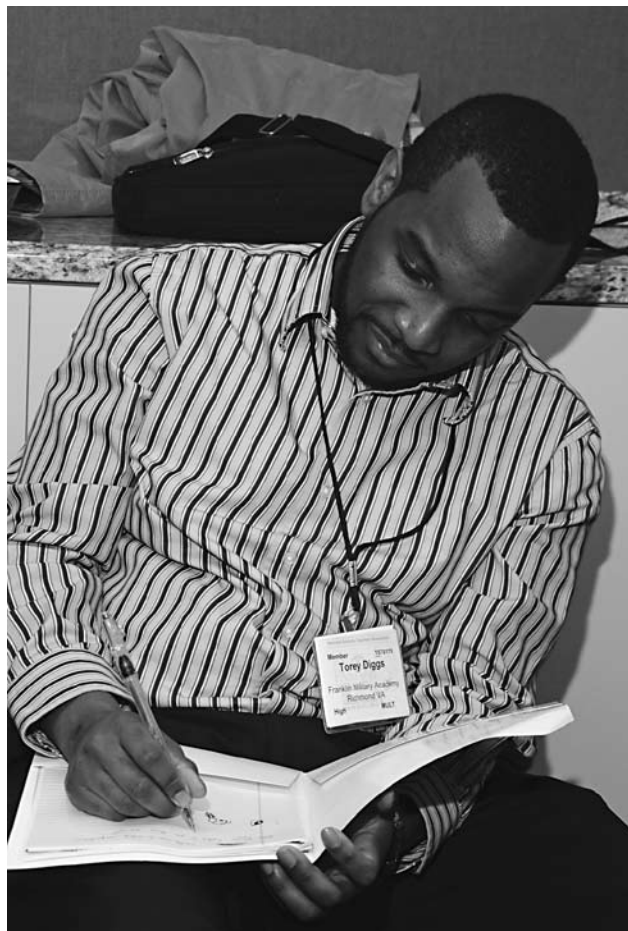
California has been a scientific playground for Earth scientists ever since the San Andreas shook up the world in 1906. One of the fastest growing multidisciplinary endeavors of research, earthquake forecasting builds on the cooperative efforts of seismologists, geologists, geophysicists, engineers, social scientists, and many others. This talk will take a look at how scientists study earthquakes in California (from trenches to satellites) and how this information becomes incorporated into one of the most comprehensive and scientifically reviewed earthquake forecast models.

Cynthia Pridmore is an engineering geologist with the California Geological Survey (CGS). As a part of the CGS Seismic Hazards Zonation Program, she has produced more than 20 liquefaction hazard maps for communities in Southern California. She has also worked in mineral resource evaluation, geologic mapping, engineering geology, and geological reviews for proposed school and hospital sites.

11:30 AM–1:30 PM COSEE Luncheon**Toxic Oils in the Gulf of Mexico: Chemical, Biological, and Geological Perspectives of the BP Deepwater Horizon Catastrophe***(By Invitation Only)**Club Room, Marriott*

David Hollander, Associate Professor of Chemical Oceanography, College of Marine Science, St. Petersburg, Fla.

The BP Deepwater Horizon catastrophe placed focus on the environmental impacts of resource extraction and the need to effectively research the expulsion, transport, alteration, and fate of the oil and gas released into the Gulf of Mexico. Dr. David Hollander, an organic geochemist, played a critical role in scientific discovery; public communications of findings; and influencing the research, response efforts, and policies of federal agencies. Please join us for a discussion about the latest understanding of the fate, transport, and impact of Deepwater Horizon oil in the Gulf of Mexico. Visit www.cosee.net for more information about this event.



12 Noon–1:30 PM NSTA/SCST College Luncheon

Chemistry, Life, the Universe, and Everything (M-9) (Gen)

(Tickets Required: \$65)

Yosemite A, Hilton



Melanie M. Cooper (*cmelani@clemson.edu*), Alumni Distinguished Professor of Chemistry, Clemson University, Clemson, S.C.

An inspection of textbooks over the years shows that they have grown bigger, more colorful, and more expensive, but there is little evidence that they have been more useful in

terms of effectiveness as learning tools. In this talk, attention will be paid to what research on science teaching and student learning can tell us about course and curriculum development. What is it that students need to learn rigorously; what is the most effective order in which topics should be introduced and reinforced; what strategies best facilitate learning; how can we know with some measure of certainty whether they have learned it; how can we encourage their curiosity and engagement, how do we know whether or not they want to become like us (professors); and how can we convince our fellow faculty to change? These are the goals of Chemistry, Life, the Universe, and Everything (CLUE), a new research-based general chemistry curriculum in development. Learn about CLUE and associated materials, including SocraticGraphs.

A faculty member in the Clemson University Chemistry Department since 1987, Melanie M. Cooper is the alumni distinguished professor of Chemistry there. She was also recently appointed interim chair of the Department of Engineering and Science Education at Clemson. Her research has focused on methods to assess and improve students' conceptual understanding and problem-solving abilities and strategies, using interventions that promote metacognitive activity. An outgrowth of this research has been the development and assessment of evidence-driven, research-based curricula, including the NSF-funded general chemistry curriculum, Chemistry, Life, the Universe, and Everything.

Dr. Cooper received her undergraduate, graduate, and PhD degrees from the University of Manchester in England, and she carried out her postdoctoral work in organic chemistry before turning to chemistry education as her area of research.

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

12 Noon–1:30 PM Exhibitor Workshops

Do You Know What You Are Breathing? (Env)

(Grades 5–College)

110, Moscone Center

Sponsor: GASTEC Corp.

Joan C. Grimm (*joangrimm1@gmail.com*), Science Education Consultant, Portland, Ore.

Perform three inquiry-based lab experiments on car exhaust, indoor air quality, and cigarette smoke with a simple device used in science classrooms worldwide to teach the process of science, the carbon/oxygen cycle, and much more! You'll get a teacher's guide and an opportunity to test the device in your classroom.

Infection Detection: An ELISA Simulation for Your Classroom (Bio)

(Grades 9–College)

120, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Teach your students basic principles of immunity and infectious disease using this hands-on simulated assay for diagnosing patients for HIV, Lyme disease, avian influenza (bird flu), or West Nile virus. In this easy, inexpensive wet lab, you will perform an ELISA, an assay used to detect antibodies against disease-causing pathogens.

Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (Bio)

(Grades 6–12)

121, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Learn about animal diversity by comparing and contrasting anatomical adaptations of the pig, rat, perch, and frog. Use scientific inquiry to observe and discover characteristics of these popular vertebrates. Experience superior quality with Carolina's Perfect Solution specimens, a safe alternative to formalin specimens that requires no special ventilation or disposal.

Don't Forget the "M" in STEM: A Focus on Inquiry in the Math Classroom (Gen)

(Grades K–5)

122, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

More than hands on, inquiry also incorporates questioning strategies, cooperative learning, and problem solving. Learn how to engage and challenge students with interactive lessons from Math Out of the Box®. Developed by Clemson University's School of Engineering and Science, this research-based

curriculum correlates to the Common Core State Standards. Classroom materials provided.

Using Google Earth in Science (Gen)

(General) 123, Moscone Center

Sponsor: Google

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

For years, Google's Geo products have been identified as a powerful learning tool kit that can help students conceptualize, visualize, share, and communicate information about the world around them. Come learn how you can use these tools in your science classroom to create more engaging and meaningful lessons for your students.

Immersion Learning Hooks Kids On Ocean Science (Gen)

(Grades 4–8) 124, Moscone Center

Sponsor: The JASON Project/Immersion Learning/Nautilus Live

Laura Batt (info@immersionlearning.org), Immersion Presents, Granger, Ind.

Immersion Learning—a multimedia after-school ocean science program—works with partners The JASON Project and Nautilus Live to engage kids in scientific exploration through hands-on activities, online games, and live interactions with scientists. Find out how to use these resources to hook your students in this hands-on, interactive workshop.

Photosynthesis and Respiration Shuffle! (Bio)

(Grades 9–12) 125, Moscone Center

Sponsor: LAB-AIDS, Inc.

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

SGI Biology is the new high school biology course from SEPUP. Developed with NSF support, the course has five units—sustainability, ecology, cell biology, genetics, and evolution. In this workshop from the ecology unit, participants will use a card sort activity to examine photosynthesis and respiration at the level of the cell and organism.

Optics with Light and Color: A Series of EnLIGHTening Experiments! (Phys)

(Grades 5–College) 131, Moscone Center

Sponsor: CPO Science/School Specialty Science

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

Experience Optics with Light and Color kit, containing LED flashlights, filters, a laser, and more. Try color mixing and relate it to human vision. See different spectra of light with

diffraction glasses or the phenomenon of internal reflection by shining a laser through a prism and tracing incident and refracted rays.

Teaching Gene Expression and Gene Regulation with Free Resources from the Howard Hughes Medical Institute (HHMI) (Bio)

(Grades 9–College) 134, Moscone Center

Sponsor: Howard Hughes Medical Institute

Ann Brokaw (abrokaw44@gmail.com), Rocky River High School, Rocky River, Ohio

Join us as we share classroom-ready activities and guides for using HHMI resources, including DVDs and the *Bio-Interactive.org* website, to enhance instruction of molecular genetics. Topics include gene expression, RNA processing, regulation, the p53 gene, genetic switches, operons, toolkit genes, and molecular cascades. Free classroom resources will be demonstrated and distributed.

Real-World Science: NBC/NSF Short Videos You Can Use in Your Classroom (Gen)

(Grades 7–12) 202/204, Moscone Center

Sponsor: National Science Foundation

Buffy Cushman-Patz, National Science Foundation, Arlington, Va.

Mark Miano, NBC News/NBC Learn, Washington, D.C.

Understanding how the science content students learn in our classes applies to their everyday lives is challenging. NBC Learn, the education arm of NBC News, and NSF have partnered to offer four groundbreaking short video collections that show how the principles of physics, math, and chemistry apply to everyday life.

What's the Connection—Louisiana, Florida, Oregon, and Indiana? (Gen)

(Grades K–12) 206, Moscone Center

Sponsor: Discovery Education

Presenter to be announced

All four of these states approved Discovery Education Science Techbook for adoption as a primary instructional resource. See why these states chose to provide their educators with the option of going digital.

The Layered Earth: 3-D Interactive Geology Curriculum (Earth)

(Grades 5–12) 256, Moscone Center

Sponsor: Simulation Curriculum Corp.

Herb Koller (hkoller@simcur.com), Simulation Curriculum Corp., Aurora, Ont., Canada

What powers the internal processes that produce volcanoes, earthquakes, and mountains? What is the rock cycle and how does it work? What really is an earthquake, and when and where will the next earthquake be? Exactly how are volcanoes formed? Join us to experience *The Layered Earth*, a new 3-D interactive geology curriculum from the makers of the award-winning *Starry Night*!

Stronger, Newer, and Improved Biotechnology: Science for the New Millennium (Bio)

(Grades 9–12) 270/272, Moscone Center

Sponsor: Sargent-Welch

Ellyn Daugherty, San Mateo Biotechnology Career Pathway, San Mateo, Calif.

Learn about features in the new edition of *Biotechnology: Science for the New Millennium* ©2011 by Ellyn Daugherty of the San Mateo Biotechnology Career Pathway, including its revised and updated textbook, lab manual (with 12 new labs), expanded instructor's guide, course planner, and teacher websites—plus new lab materials and lab kit options. Details on free curricular materials provided.

Teaching About the Environment: Resources for K–12 Classrooms (Env)

(Grades K–12) 300, Moscone Center

Sponsor: Annenberg Learner

Michele McLeod (mmcleod@learner.org), Annenberg Learner, Washington, D.C.

Christy Porter-Humpert (eei@calepa.ca.gov), California EPA, Sacramento

Participants will acquire skills and resources for introducing environmental topics to K–12 students. Annenberg Learner's Habitable Planet environmental science course for teachers will be paired with the California EPA's Education and Environment Initiative to introduce a broad range of topics and a framework for teaching these topics.

Biology with Vernier (Bio)

(Grades 9–College) 301, Moscone Center

Sponsor: Vernier Software & Technology

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

Experiments such as transpiration, cell respiration, and EKG

from our popular *Biology with Vernier* and *Advanced Biology with Vernier* lab books will be performed in this hands-on workshop. You will be able to try these experiments using LabQuest and our LabQuest Mini. See our SpectroVis Plus spectrophotometer and White Light Transilluminator in action!

Bridging STEM and Vernier Technology (Gen)

(Grades 7–12) 302, Moscone Center

Sponsor: Vernier Software & Technology

Verle Walters (info@vernier.com) and **Matt Anthes-Washburn** (info@vernier.com), Vernier Software & Technology, Beaverton, Ore.

Taking STEM education from buzzword to classroom implementation can be challenging. Take part in a STEM activity, appropriate for middle and high school students, that makes use of Vernier technology. The activity will model an approach you can use to implement STEM education into your curriculum.

The New F.A.S.T. Challenge: Teaching STEM in Partnership with NASCAR and Ten80 Education (Phys)

(Grades 6–12) 303, Moscone Center

Sponsor: Ten80 Education

Terri Stripling (tstripling@ten80education.com), Ten80 Education, Saratoga Springs, N.Y.

Jeffery Thompson (carsrpi@gmail.com), Ten 80 Education, Charlotte, N.C.

In this active workshop, participants will engage in the new F.A.S.T. Challenge (Fueling Achievement Through Science & Technology), a partnership between NASCAR and the engineer-educators of Ten80. Learn how the F.A.S.T. Challenge helps make STEM teaching more fun, relevant, and effective. The more you know, the faster you go! (Formerly called FastTrack RC.)

Hands-On Integrated Science Activities for Middle School (Gen)

(Grades 6–8) 304, Moscone Center

Sponsor: Flinn Scientific, Inc.

Janet Hoekenga, Flinn Scientific, Inc., Batavia, Ill.

Hands-on science leads to minds-on learning! Flinn Scientific presents relevant and age-appropriate activities for middle school—integrating life, Earth, and physical science topics. Participants perform and observe experiments designed to capture the curiosity and engage the energy of adolescent students. Handouts.

Planet Diary: Using Current Events to Engage Your Students in Science (Gen)

(Grades K–12) 305, Moscone Center
 Sponsor: Pearson

Jack Hankin, Planet Diary Author and Creator, Pacifica, Calif.

Join Jack Hankin, author and creator of Pearson’s acclaimed Planet Diary, and see how easy it is to integrate science current events into your upper elementary, middle, or high school curriculum with this website, which features in-depth student activities and reports on key environmental issues.

21st-Century Literacy for Budding Scientists (Gen)

(Grades K–8) 308, Moscone Center
 Sponsor: Houghton Mifflin Harcourt

Donna Ogle, National-Louis University, Skokie, Ill.

Join Houghton Mifflin Harcourt *ScienceFusion* author Donna Ogle to learn about cutting-edge research and techniques on how students living in a digital world access print.

Hands-On Elementary Science with LEGO Education (Phys)

(Grades 1–5) 309, Moscone Center
 Sponsor: LEGO Education

Presenter to be announced

Elementary teachers—did you know you can teach science with LEGO® bricks? Inspire young learners to explore simple and motorized machines and the world of robotics. See engaging ways to meet science standards in this interactive session.



Opening Minds and Doors.

Since 1955, ISS has been dedicated to supporting international schools as they provide their students with a world-class education.

We have sought to advance the quality of education worldwide by delivering comprehensive services and innovative solutions for learning communities.

ISS has placed over 20,000 educational professionals in world-class institutions, and each year the number of schools and opportunities continues to expand.

Upcoming ISS Events

Fairfax IRC: June 10–12, 2011

IB Workshop: July 6–8, 2011

Bangkok IRC: January 2012

Boston IRC: February 2012



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We Open Minds and Doors.

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

From the Private Eye to a Magnified Mind (M-11) (Gen)

(Tickets Required: \$65)

Yosemite B, Hilton



Kerry Ruef (ruef@the-private-eye.com), Director and Founder, The Private Eye® Project, Lyle, Wash.

Dandelions! Crickets! Eyeballs! During this presentation, Kerry Ruef will take you on a tour of discovery, sharing with you the power of The Private Eye, a process and curriculum that accelerates creativ-

ity, literacy, and scientific literacy across the curriculum. It's a hands-on, eye-popping, and mind-expanding encounter with a nationally acclaimed inquiry approach for all ages. You'll use a jeweler's loupe, everyday objects, and thinking by analogy to develop the essential skills of scientist, writer, and artist in all your students. Participants will receive a conference world-in-a-bag of specimens, two loupes, and a powerful process for transforming education.

Kerry Ruef is founder and director of The Private Eye Project, a teacher training curriculum designed to develop critical-thinking skills, creativity, and scientific literacy across all subjects. Originally funded by the Discuren Foundation, the Private Eye Project began in the Seattle public schools and has now expanded worldwide.

Previously a classroom teacher, Ruef uses poetry and analogy in her presentations. She was twice a writer-in-residence with the Seattle Arts Commission and started The Floating Poetry Gallery, a statewide collaboration of visual artists and writers.

Ruef has authored several books, including The Private Eye (5X) Looking/Thinking by Analogy: A Guide to Developing the Interdisciplinary Mind and The Private Eye (5X) Looking/Thinking by Analogy: Simple Steps to a Magnified Mind.

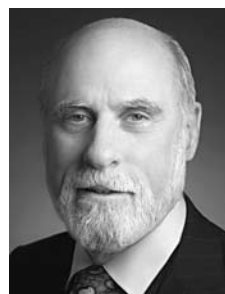
Tickets, if still available, must be purchased at the Ticket Sales Counter in the NSTA Registration Area before 3:00 PM on Friday.

12 Noon–2:00 PM Aerospace Educators Luncheon

NASA AESP 50th Anniversary Celebration: Transforming Learning Through Online Resource Collaboration (M-10) (Gen)

(Tickets Required: \$30)

Golden Gate B, Marriott



Vinton G. Cerf, Vice President and Chief Internet Evangelist, Google, Reston, Va.

This talk will look at the internet as an infrastructure for learning with an emphasis on student learning as a primary objective beyond teaching. Exploring information resources and integrating them into the experience teachers provide for their students seems like a very timely target for innovative thinking.

Widely known as one of the "Fathers of the Internet," Vinton G. Cerf is the co-designer of the TCP/IP protocols and the architecture of the internet. Since 2005, he has served as vice president and chief internet evangelist for Google, where he identifies new enabling technologies to support the development of advanced internet-based products and services.

Prior to Google, Cerf was senior vice president of Technology Strategy for MCI. He has also worked for the U.S. Department of Defense's Advanced Research Projects Agency (DARPA). He also holds an appointment as distinguished visiting scientist at the Jet Propulsion Laboratory where he is working on the design of an interplanetary internet.

He has received the U.S. National Medal of Technology, the Turing Award, and the Presidential Medal of Freedom for his work along with colleague Robert E. Kahn.

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

NSTA is grateful to Tor-Forge Books for partially sponsoring this luncheon.

12 Noon–3:00 PM Luncheon

Science Matters State Coordinators Luncheon and Leadership Meeting

(By Invitation Only) Union Square 5/6, Hilton
Sponsored by PBS Educational Media, NOVA, WGBH Teachers' Domain, KQED Public Media, and Twin Cities Public Television (SciGirls).

12 Noon–3:00 PM Exhibitor Workshop

Getting the Most Out of National Science Digital Library (NSDL) Science Literacy Maps (Gen)

(Grades K–12) 258/260, Moscone Center
Sponsor: American Association for the Advancement of Science

Ted Willard (twillard@aaas.org), AAAS Project 2061, Washington, D.C.

Looking for free online resources to help your students achieve national and state science standards? Learn how to search collections in the NSDL using Science Literacy Maps and discover features of the maps that can be used for lesson planning and other classroom tasks.

12:30–1:30 PM Special Session

NESTA Session: Advances in Earth and Space Science Lecture 2: Imaging the Earth Beneath Our Feet—Pictures of Earthquake-producing Machinery in the Western U.S. and Alaska (Earth)

(Informal Education) Meeting Room Hall D, Moscone Center



Gary Fuis, Associate Team Chief Scientist, Western Earthquake Hazards Team, U.S. Geological Survey, Menlo Park, Calif.

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

Active-source imaging of the subsurface provides the most detailed, accurate picture of faults, sedimentary basins, and other Earth structures that affect our assessments of earthquake hazards. Everywhere we obtain these images, we get surprises. These surprises mean we do not understand the subsurface very well at all. Examples of many of these surprises will be given for southern and central California and for Alaska.

Gary Fuis joined the U.S. Geological Survey (USGS) in 1974 where he operated and expanded the USGS/Caltech Southern California Seismic Network. He is currently the associate team chief scientist with the Western Earthquake Hazards Team. Principal contributions include expansion and development of the Southern California Seismic Network in the 1970s in cooperation with the California Institute of Technology, seismic imaging using refraction and reflection techniques, and geologic/tectonic interpretation of a number of continental transects.



12:30–1:30 PM Presentations

SESSION 1



NSTA Press Session: Putting the Science into Your PLC: Tools for Professional Learning (Gen)

(Supervision/Administration) Continental 6, Hilton

Page Keeley (pagekeeley@gmail.com), 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta

Learn about the tools and resources available through NSTA Press that provide models, structures, strategies, tools, and resources for science-focused professional learning communities.

SESSION 2 (two presentations)

(Elementary) Golden Gate 2, Hilton

Teaching Science Concepts Through Digital Stories (Gen)

Casandra Flores (floresc@stlucie.k12.fl.us), Port Saint Lucie Elementary School, Fort Pierce, Fla.

Teach students to create digital science stories in the classroom and you'll engage all students, from the unmotivated to the highly eager. Handouts.

Using Existing Technology to Enhance Student Learning (Gen)

Wai Chin Ng (wng@boston.k12.ma.us), Josiah Quincy Elementary School, Boston, Mass.

Learn some creative ways to use computer application software and online resources to enhance student projects and promote higher-level thinking.

SESSION 3

Earth and Climate Science Teacher Academy for 21st-Century Learners (ECSTATIC) (Env)

(Elementary–Middle Level) Golden Gate 5, Hilton

Stan Y. Fukunaga, Eric Havel, and Ben Burrell, Chabot Space & Science Center, Oakland, Calif.

Explore climate change content through inquiry-based activities and experiments. CD provided.

SESSION 4

Need More Time for Science? (Gen)

(Elementary) Golden Gate 7, Hilton

Joni M. Ashley (jashley@kibesd.org) and **Stephanie J. Lyon** (slyon@kibesd.org), Kiona-Benton Elementary School, Benton City, Wash.

Learn how to make quick additions to turn your district's reading curriculum into inquiry-based, hands-on science lessons. Handouts.

SESSION 5

Expert Groups: A Pathway to Science Literacy (Gen)

(Middle Level) Union Square 3/4, Hilton

Kathryn A. Stevens (kstevens@lausd.net), Ellen Ochoa Learning Center, Cudahy, Calif.

Presenter: Julie Ham, Ellen Ochoa Learning Center, Cudahy, Calif.

See how one urban school has dramatically improved reading comprehension in science classrooms through the use of “expert groups” and picture files. Free CD with lessons and pictures.

SESSION 6

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

(High School–College) Union Square 14, Hilton

Frank Hubacz, Jr. (hubaczf@franklinpierce.edu), Franklin Pierce College, Rindge, N.H.

Learn how to develop and implement a civic engagement component in your science course using the SENCER model.

SESSION 7

ASTE Session: Inquiry About Inquiry (Gen)

(General) Union Square 21, Hilton

Heather Vinal and Nancy Lapotin, Portland (Ore.) Public Schools

Patricia D. Morrell (morrell@up.edu), University of Portland, Ore.

Join us as we examine a way of designing inquiry-based lessons using constructivist learning cycles that are appropriate for different grade levels.

SESSION 8

Planning for PLC Success Using Effective Practices (Gen)

(General) Union Square 25, Hilton

Brian MacNevin (bjmacnevin@gmail.com), Larrabee Elementary School, Bellingham, Wash.

Mike D'Hondt (mdhondt@bham.wednet.edu), Happy Valley Elementary School, Bellingham, Wash.

We will look at PLC practices that support moving collaboration from materials management and activities to student achievement and interventions.

SESSION 9**Interactive Whiteboards Made Easy in the Science Classroom (Gen)***(Elementary–Middle Level)**Yosemite C, Hilton*

Larry W. Zimmerman (*lzimmerman@tcmpub.com*), Academic Officer, Alpharetta, Ga.

Quickly and easily engage your students through effective use of your interactive whiteboard. Take home ready-to-implement lessons and activities.

SESSION 10**Accessing and Engaging English Language Learners in the Science Classroom (Gen)***(Elementary–High School)**Golden Gate Salon A, Marriott*

Brandon L. Tucker (*btucker@glenbrook.k12.il.us*), Glenbrook South High School, Glenview, Ill.

Learn more than 50 practical, research-based strategies to use with English language learners in the science classroom. Handouts and a CD will be provided.

SESSION 11 (two presentations)*(General)**Golden Gate Salon C3, Marriott***A Model for Inspiring and Supporting High School Biotechnology Teachers (Bio)**

Katy Korsmeyer (*kuokaty@scientist.com*), San Jose State University, San Jose, Calif.

BABEC (Bay Area Biotechnology Education Consortium) presents models and best practices for supporting high school biotechnology programs to inspire, educate, and prepare students and teachers for the future.

BioCONNECT (Biology and Cancer, Online Education Connecting Teens): An Innovative Interactive High School Curriculum (Bio)

Jennifer K. Campbell (*campbejk@umdnj.edu*), University of Medicine & Dentistry of New Jersey, New Brunswick

Coauthors:

Laura Liang, University of Medicine & Dentistry of New Jersey, New Brunswick

Hetal Vig and **Deborah Toppmeyer**, The Cancer Institute of New Jersey, New Brunswick

This curriculum uses breast cancer as the context to learn about biology and genetics.

SESSION 12**Edgy Science 4****(Phys)***(General)**Nob Hill B, Marriott*

Christopher M. Smith (*csmith@ctbp.ucsd.edu*) and **Daniel Hone** (*hone@kitp.ucsb.edu*), University of California, Santa Barbara

Sharlene Denos (*denos@illinois.edu*), University of Illinois at Urbana-Champaign, Urbana

Physics Frontier Centers (PFCs) provide a smorgasbord of demos and activities based on the latest research in cosmology and biophysics, from bacteria to the Big Bang.

SESSION 13 (two presentations)*(High School)**Nob Hill C, Marriott***Physics for Everyone: Embedded Honors and Special Education Support in a Heterogeneous Physics Class (Phys)**

Kristin Newton, **Andrew Miller** (*amiller@cpsd.us*), **John Haverty**, and **Elizabeth Hansel** (*ehansel@cpsd.us*), Cambridge Rindge and Latin School, Cambridge, Mass.

Learn how we differentiate our ninth-grade physics courses to challenge and support all students in the classroom.

Continuing Research on the Use of Online Lab Simulations in the Physics Classroom (Phys)

Christine N. Dinger, University of Pennsylvania and Haverford High School, Havertown, Pa.

A ninth-grade teacher shares her continuing research on online lab simulations in physics. Bring your laptops!

SESSION 14**NSF Follow-Up Session: How Are Arctic Landscapes Responding to Permafrost Degradation Under a Warming Climate? (Env)***(Informal Education)**Pacific B, Marriott*

Michael N. Gooseff (*mgooseff@engr.psu.edu*), Pennsylvania State University, University Park

Air temperatures in the Arctic are warming; the permafrost that underlies this polar landscape is susceptible to degradation, namely thaw. Come learn about causes and consequences of disappearing permafrost in the Arctic.

SESSION 15

Tracking Water from Space: Classroom Activities Using a NASA Global Data Set (Earth)

(Informal Education) Pacific C, Marriott

Jim Short and **Cristina Trowbridge** (*ctrowbridge@amnh.org*), American Museum of Natural History, New York, N.Y.

James Famiglietti (*jfamigli@uci.edu*), University of California, Irvine

NASA's GRACE mission tracks changes in global water distribution. Explore ways to use GRACE data in the classroom and receive digital media for teaching about climate change.

SESSION 16

From the Mountains to the Estuary...from the School Yards to the Bay (Env)

(General) Pacific F, Marriott

Jason Calhoun (*calhounwj@pwcs.edu*) and **Joy Greene** (*greeneje@pwcs.edu*), Prince William County Public Schools, Manassas, Va.

Learn how to deliver meaningful watershed educational experiences that integrate technology-driven school yard stewardship projects, inquiry-based field studies, and computerized analyses.

SESSION 17

Eco-Schools USA Climate Change Connections (Env)

(General) Pacific J, Marriott

Laura Hickey (*hickey@nwf.org*) and **Jennifer Hammonds** (*hammondsj@nwf.org*), National Wildlife Federation, Reston, Va.

Explore Eco-Schools USA and new climate change curriculum developed by the National Wildlife Federation and NASA that helps educators integrate climate change science and literacy into their classrooms.

SESSION 18 (two presentations)

(Middle Level–High School) Sierra A, Marriott

Dissection: How to Make the Most of It (Bio)

Michael J.V. Lazaroff (*mjvlazaroff@gmail.com*), Staples High School, Westport, Conn.

End your year with dissection. Learn strategies to create a safe environment, engage all your students, and eliminate the need for alternative assignments.

Old School Gel Electrophoresis (Bio)

Ross Blank-Libra (*ross.blank-libra@k12.sd.us*), Washington High School, Sioux Falls, S.Dak.

Teach a 21st-century concept without the expensive technology. Model the gel electrophoresis process and make a DNA fingerprint with paper, scissors, and glue.

SESSION 19

Integration of Organic Chemistry, Spectroscopy, and Forensics into a High School Course (Chem)

(High School) Sierra C, Marriott

Jeromy T. Bentley (*jbentley@naperville203.org*), Naperville Central High School, Naperville, Ill.

The Applications in Chemistry course is a combination of organic chemistry, spectroscopy, and forensic science. We'll look at the course curriculum and future applications.

SESSION 20

Mastering Science: The Power of the Formative Assessment Cycle (Gen)

(Middle Level–High School) Sierra E, Marriott

Wesley C. Hatfield (*whatfield@csdecatur.net*) and **Cristine Hellerstein** (*chellerstein@csdecatur.net*), Decatur High School, Decatur, Ga.

Focus on student demonstration of content mastery through an engaging formative assessment cycle.

SESSION 21

Top STEM Resources for Your Classroom (Gen)

(Elementary–High School) 113, Moscone Center

Brad Fountain, Discovery Education, Silver Spring, Md.

Are you interested in bolstering STEM learning in your classroom? Do you want tools and resources you can use in your classroom immediately? Join the Discovery Educator Network as we explore 12 great websites that will help you make STEM a part of class every day. We will arm you with a wealth of free tools and resources that will excite your students about STEM.

SESSION 22

Science Coaching on Demand (Gen)

(General) 200, Moscone Center

Denise A. King (*daking@eriesd.org*), **Eileen A. Blakeslee** (*eblakeslee@eriesd.org*), **Sandra M. Balkovic** (*sbalkovic@eriesd.org*), **Donna M. Wall** (*dwall@eriesd.org*), and **Eric C. Sandberg** (*esandberg@eriesd.org*), School District of the City of Erie, Pa.


Science coaching is a fully realized embedded professional development model. Explore successful strategies for implementing a coaching program.

SESSION 23

The Role of Scripps Research Institute Scientists in the Professional Development of Science Teachers (Bio)*(General)* 208/210, Moscone Center**Deborah K. Leach-Scampavia** (*leach@scripps.edu*), **Louis D. Scampavia** (*scamp1@scripps.edu*), **Brian M. Paegel** (*briandna@scripps.edu*), and **Joshua Kostera** (*jkostera@scripps.edu*), Scripps Florida, Jupiter

We'll look at the content and focus of the Scripps Summer Teacher Institute and the challenge of providing an effective professional development program.

SESSION 24 (two presentations)

(Middle Level–College) 224/226, Moscone Center **How Do We Know? Improving Scientific Understanding Through Reading (Gen)****Susan J. Cooper** (*scooper@fgcu.edu*), Florida Gulf Coast University, Fort Myers

Promote student inquiry and conceptual change through reading about science in print and electronic formats.

 **“What Do You Think?” The Use of Blogging as a Scientific Literacy Tool (Bio)****Brett R. Erdmann** (*berdman@d125.org*), Adlai E. Stevenson High School, Lincolnshire, Ill.

Here is an innovative assignment that combines independent student reading of a popular science book with student-directed Q&A hosted on a blog.

SESSION 25

 **Scientific Literacy: More Than Just the Facts (Gen)**
(Middle Level–High School) 228/230, Moscone Center**Laura R. Pearce** (*laura_1249@yahoo.com*), University of Missouri–St. Louis

This NSF-funded project has been exploring ways to enhance scientific literacy among high school students through a journalistic model—print, electronic, podcast.

SESSION 26

 **Cyber Enabled Earth Exploration (CE³) Science Curriculum Project (Earth)***(Middle Level–High School)* 232/234, Moscone Center**Lisa M. Blank** (*lisa.blank@umontana.edu*), The University of Montana, Missoula

Learn how to use GoogleEarth as a transformative data collection and analysis tool to teach essential understandings of volcanoes, earthquakes, and plate tectonics.

SESSION 27

Preparing Secondary Students for University Science Instruction Using Technology and Active Learning (Gen)*(General)* 250, Moscone Center**Thomas Haglund** (*thaglund@windwardschool.org*) and **James Bologna**, Windward School, Los Angeles, Calif.

We'll present the arguments and evidence that the use of active learning science education enhanced with technology will better prepare students for university instruction.

12:30–1:30 PM Workshops

Linking AP Stat and AP Bio with M&Ms® (Bio)*(High School–College)* Continental 1, Hilton**Cory Cloud**, Florida State University School, Tallahassee
Use M&Ms to connect AP Stat with AP Bio through chi square and Hardy Weinberg. Handouts.**Whirling Planets and Stars: Using a Kinesthetic Approach to Understanding the Seasons (Earth)***(Elementary–Middle Level)* Continental 7, Hilton**Timothy F. Slater** (*timslaterwyo@gmail.com*), NSTA Director, College Science Teaching, and University of Wyoming, Laramie**Stephanie J. Slater** (*sslaterwyo@gmail.com*), University of Wyoming, Laramie

Engage students in using their bodies to model one of the most challenging ideas in astronomy—the seasons.

To Be a Fruit or Not to Be a Fruit (Bio)*(Elementary–Middle Level)* Continental 8, Hilton**Theresa A. Rabogliatti** (*trabogliatti@hotmail.com*), St. Joseph School, Coraopolis, Pa.

Learn the botanical parts of plants, with a focus on the fruit, and complete a hands-on investigation.

 **NSTA Press Session: Designing Effective Science Instruction (Gen)***(General)* Continental 9, Hilton**Anne L. Tweed** (*atweed@mcrel.org*), 2004–2005 NSTA President, and Mid-continent Regional Educational Laboratory (McREL), Denver, Colo.Teaching science, no matter the level, is hard work! *Designing Effective Science Instruction: What Works in Science Classrooms* pulls together recent findings from studies and teacher education initiatives into an easy-to-understand instructional framework.

Smarter Science for Elementary School: Literacy and Numeracy in Action (Gen)

(Elementary) Golden Gate 4, Hilton

Brad Parolin (brad.parolin@tdsb.on.ca), Toronto (Ont.) District School Board, Canada

Presider: Michael J. Newnham, Youth Science Canada, Pickering, Ont., Canada

Smarter Science's research-based inquiry program teaches key concepts and process skills through hands-on investigations. Take home materials and door prizes.

Science on a Dime When You Have Little Time

(Gen)

(Preschool–Elementary) Golden Gate 6, Hilton

Andi Webb (roliewebb@ccs.k12.nc.us) and **Lisa Popish** (lisa-popish@ccs.k12.nc.us), Alderman Road Elementary School, Fayetteville, N.C.

Here are some ways to teach science skills with inexpensive materials and minimal investment of time.

Lessons Learned After Two Years of Problem Based Learning (Gen)

(General) Golden Gate 8, Hilton

DeDee Ludwig (dludwig@sheddaquarium.org) and **Jacqueline M. Formoso** (jformoso@sheddaquarium.org), John G. Shedd Aquarium, Chicago, Ill.

Teaching Problem Based Learning (PBL) labs can seem overwhelming, but it doesn't have to be! Explore activities and lessons learned from aquatic-themed PBLs.

Activities, Materials, and Resources to Teach Physical Science (Phys)

(Elementary–Middle Level) Union Square 15/16, Hilton

Christine Wheeler (wheelerc@jlab.org), Thomas Jefferson National Accelerator Facility, Newport News, Va.

Sarah Reeves Young (sarahyoung@rowlandhall.org), Rowland Hall Middle School, Salt Lake City, Utah

Craig Doolittle (cdoolittle@gc.k12.va.us), Page Middle School, Gloucester, Va.

Jennifer Amma (jamma@ccps.org) and **Joseph Amma** (jamma@ccps.org), North East Middle School, North East, Md.

Leave this session with teacher-developed activities and materials to use in class on Monday.

The Amazing Analysis of Bloodstain Patterns for Physicists and Forensic Scientists (Phys)

(High School–College) Union Square 22, Hilton

Kathy Mirakovits (kmirakovits@portageps.org), Portage Northern High School, Portage, Mich.

Physics teachers—need a new lab for projectile motion? Forensic science teachers—need help analyzing bloodstains? Come get step-by-step instruction on bloodstain analysis.

Newton's Second Law—With Friction (Phys)

(High School–College) Union Square 23/24, Hilton

Paul Williams (pwilliamst3@gmail.com), Red Deer, Alta., Canada

Perform a second law experiment on a tabletop using friction and the help of student assistants.

Inquiry-based Hands-On Activities and Demonstrations (Bio)

(Middle Level–High School) Golden Gate Salon C1, Marriott

John W. Fedors (jfedors@wavecable.com), Science Activities, Lincoln, Calif.

Explore energy, magnetism, diffusion, passive transport, cell organelles, heat transfer, hydrophilic/hydrophobic materials, and forensic potentials.

DIY Forensics (Gen)

(General) Nob Hill A, Marriott

April A. Chancellor (april.chancellor@msichicago.org) and **Jennifer M. Edginton** (jennifer.edginton@msichicago.org), Museum of Science and Industry, Chicago, Ill.

Develop forensic skills and activities on a budget. Experience blood spatter analysis, entomology, and more. Free lessons and prizes!

Looking at Elements, Compounds, and Mixtures

(Chem)

(Middle Level–High School) Nob Hill D, Marriott

Kevin B. Keehn, Walter R. Sundling Junior High School, Palatine, Ill.

These basic conceptual chemistry demonstrations lay the foundation for understanding elements, and then making compounds and mixtures.

AMSE Session: Exploring Critical Elements of Language Development Through Inquiry (Chem)*(Elementary–Middle Level)**Pacific A, Marriott*

Claudio Vargas B. (*cvargasb@berkeley.edu*) and **Diana Velez** (*dvelez@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

Explore critical elements of academic language development—prior knowledge, comprehensible input, oral practice, and vocabulary development—in the context of a physical science lesson.

Modeling Molecular Biology with Junk (Bio)*(High School)**Pacific H, Marriott*

Claire A. Salier-Hellendag (*csalier@springisd.org*), Carl Wunsche Senior High School, Spring, Tex.

Pull all your old pipe cleaners, feathers, ribbon, LEGOs®, and beads to work. Have students model your content for you.

Translating University Science Research into Classroom-friendly Curriculum Modules (Bio)*(General)**Pacific I, Marriott*

Julie R. Bokor (*julie@cpet.ufl.edu*), University of Florida, Gainesville

Explore experiments and complementary activities of the Biotechnology in the Classroom curriculum and learn how this curriculum has been used in Florida schools.

Rocky Road: Informal Science Lessons Lead to Earth Science Inquiry (Earth)*(General)**Sierra B, Marriott*

Patricia K. Freitag, Hands On Science, Silver Spring, Md.

We will demonstrate selected activities from a Hands On Science: Rocky Road lesson. Specific topics include gold, pumice, erosion and sedimentation, and classifying rocks and minerals. Hands On Science is an established inquiry science enrichment program for young children.

Teaching Energy Conservation with an Emphasis on Biofuels (Env)*(Elementary–Middle Level)**Sierra J, Marriott*

Sue P. Kral (*spk@cdfun.org*), Creative Discovery Museum, Chattanooga, Tenn.

Engage students in energy conservation with inquiry activities that promote understanding while focusing on research to develop a nonfood alternative liquid fuel for transportation.

Cosmology and Our Universe: Why Dark Energy and Is It Real? (Earth)*(Middle Level–High School)**Walnut, Marriott*

Mary L. Urquhart (*urquhart@utdallas.edu*), The University of Texas at Dallas, Richardson

Join NASA-funded astrophysicists/educators to explore the observations and challenges behind one of the biggest questions in modern cosmology.

Real-Time Observations in Radio Astronomy**(Earth)***(Middle Level–High School/Inf.) Yerba Buena Salon 14, Marriott*

Christi J. Whitworth (*cwhitworth@pari.edu*) and **Michael Castelaz** (*mcastelaz@pari.edu*), Pisgah Astronomical Research Institute, Rosman, N.C.

Use a remotely operated 4.6-meter radio telescope and accompanying labs with your middle and high school students to investigate the Radio Sky.

Drivers, Start Your Engines...The Physics of NASCAR Pasta Pods (Phys)*(Elementary–High School)**Yerba Buena Salon 15, Marriott*

Julie Angle (*julie.angle@okstate.edu*), Oklahoma State University, Stillwater

Speed on the track translates into excitement in the classroom. Facilitate student understanding of force and motion by constructing a NASCAR pasta pod.

Empowering Students to Learn**(Gen)***(General)**111, Moscone Center*

Susan G. Talkmitt (*susan.talkmitt@ttu.edu*), Texas Tech University, Lubbock

Enhance student comprehension through teaching strategies that will change your teaching and your classroom. Take away some of our best and most requested activities.

Building a Better Student Scientist!**(Gen)***(Elementary–Middle Level)**112, Moscone Center*

Wendy DeMers (*2ydnew2@gmail.com*), Hynes Charter School, New Orleans, La.

Maximize the achievement of student scientists. Learn how to build essential descriptive language and reading comprehension skills, sound measurement practices, and systematic scientific procedures.

Secrets of the “Dark Continent”: Infusing African Studies into the K–12 Science Curriculum (Gen)

(Elementary–High School) 212, Moscone Center

Linda L. Jones (ljones@coe.ufl.edu), University of Florida, Gainesville

These low-cost, fun, hands-on activities use an African focus to address core biology, ecology, Earth science, environmental science, and health concepts.



Taking Earth Science One Step Further: Harnessing Sun and Wind Energy (Earth)

(Elementary) 220/222, Moscone Center

Kristin Sargianis (ksargianis@mos.org) and **Sharlene Yang** (syang@mos.org), Museum of Science, Boston, Mass.

Reinforce Earth science content with engineering. Learn about two engineering design challenges for elementary children that teach about alternative energy by designing windmills and solar ovens.

12:30–1:30 PM Exhibitor Workshops

Quality Interactive Science Lessons, Part 1: What to Look For (Phys)

(Grades K–11) 274/276, Moscone Center

Sponsor: DYMO/Mimio

Lois Page, DYMO/Mimio, Cambridge, Mass.

Do you find it difficult to identify “quality interactive content”? In just one hour, we will make it easier for you to sort quality interactive science lesson content from empty filler. All attendees will receive a “Shopping List for Quality Interactive Content” to guide them in content purchases and creation.

EarthComm—New Edition! (Earth)

(Grades 9–12) 307, Moscone Center

Sponsor: It’s About Time

Gary Curts, Dublin (Ohio) Public Schools

Introducing the newest edition of American Geological Institute’s (AGI) *EarthComm*. See the new features, including the Engineering Design Cycle and more for one of the most successful project-based Earth science programs ever created. Developed by the education professionals at AGI ensures you that the content is right, and that it is based on the latest research available.

12:30–3:30 PM Short Course

Outdoor Biology Instructional Strategies—Revitalizing OBIS (SC-20)

(Grades 3–8) Sausalito, Grand Hyatt

Tickets Required: \$26

Joanna Snyder (joanna_snyder@berkeley.edu) and **Terry Shaw** (terryshaw@aol.com), Lawrence Hall of Science, University of California, Berkeley

For description, see Volume 1, page 70.

1:00–1:30 PM Presentation

SESSION 1

A Science Family Collaborative: Gathering Parents and Students Together to Experience Science (Gen)

(Preschool–Middle Level) Union Square 17/18, Hilton

Cecilia A. Owens (covens@fayschool.org), Fay School, Southborough, Mass.

Parents join their children for a morning at school to experience the engineering design process. I’ll share planning information, schedules, and success stories.

1:00–4:00 PM Short Course



Create Your Own Interactive Whiteboard (SC-21)

(Grades K–12) Union Square, Grand Hyatt

Tickets Required: \$88

Katy Scott (kscott@mbayaq.org) and **Jenny de la Hoz** (jdelahoz@mbayaq.org), Monterey Bay Aquarium, Monterey, Calif.

For description, see Volume 1, page 70.



1:30–2:30 PM Special Session**NESTA Session: Advances in Earth and Space Science Lecture 3: The Tortoise and the Hare—A Tale of Faults That Creep (Earth)***(Informal Education) Meeting Room Hall D, Moscone Center*

Matthew d'Alessio (*matthew.dalessio@csun.edu*), Assistant Professor, California State University, Northridge

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

Earthquakes occur when forces deep within Earth drag and move the plates around until they get stuck. Strain builds up over decades and needs to be released, which happens suddenly and violently in an earthquake like the hare that sprints in the classic children's fable. Other faults are different. They act more like the slow and steady tortoise as they release their strain through nearly constant fault motion called creep. I'll discuss high-tech measurements of strain buildup and release by creep.

Matthew d'Alessio grew up in the Bay Area and was home alone during the 1989 Loma Prieta Earthquake. Though traumatized at the time, the event inspired him to study geology and the science of earthquakes. His career has slowly shifted from science research to science education. He uses his experience as a high school Earth science teacher to help educate future teachers in his current position as assistant professor at California State University Northridge.

1:30–2:30 PM Workshop**COSEE Session: Linking Our Ocean and Climate Through Innovative Learning Connections, Part 1 (Env)***(Middle Level—High School/Informal) Willow, Marriott*

Liesl Hotaling, Centers for Ocean Sciences Education Excellence, Highlands, N.J.

Let's look at the most recent scientific understanding of the "big picture" of climate change and the potential effects.

1:30–2:30 PM Exhibitor Workshop**Creating Tests Can Be Easy! Let Examgen Show You How (Gen)***(Grades 3–12) 236/238, Moscone Center*

Sponsor: Fisher Science Education

Luke Masouras, Examgen, Inc., Syracuse, N.Y.

How many hours per week do you spend developing tests? We understand that it takes a large amount of time to write and create questions and then format them into exams, quizzes, homework, and review material. Learn how we can help you minimize the time you spend creating all these materials. Our software content is aligned to state standards and curricula, and it is so simple to use.



1:30–3:00 PM Shell Science Seminar

What Goes Around, Comes Around Better (Gen)
(General) 103, Moscone Center



Elizabeth K. Stage (*stage@berkeley.edu*), Director, Lawrence Hall of Science, University of California, Berkeley

President: Christine Bertrand (*csta@cascience.org*), Executive Director, California Science Teachers Association, Sacramento

“The Learning Cycle” in science education, like science itself, goes from exploration and investigation to analysis and refinement, and then goes around again. The newer idea of science education “standards” may have a similar trajectory. After looking at the evolution of the learning cycle over a span of four decades, we’ll look at the framework for the new common core standards, as the two are more closely related than meets the eye. Some may say, “Same old, same old; how will it help me as a teacher?” This presentation will identify reasons to be optimistic!

Elizabeth K. Stage is director of the Lawrence Hall of Science at the University of California, Berkeley. With a bachelor’s degree in chemistry from Smith College, she taught middle school science and mathematics before earning a doctorate in science education from Harvard University. She then spent 10 years at the University of California, Berkeley, primarily at the Lawrence Hall of Science, where she did research and evaluation, and led professional development and public programs in mathematics and computer education.

Dr. Stage went to the University of California Office of the President to start the California Science Project and ended up coordinating professional development in mathematics, science, and physical education. Along the way, she worked on state, national, and international standards and assessments in mathematics and science. She was director of critique and consensus at the National Research Council when the National Science Education Standards were being developed.

In 2003, she returned to the Lawrence Hall of Science as its director. In addition, she serves on the Executive Committee of the Coalition for Science After School, is a fellow of the American Association for the Advancement of Science and chair-elect of its education section.

NSTA is grateful to Shell for sponsoring this session.

1:30–3:00 PM Shell Science Seminar

ELL Students’ Access to High-Quality Science Instruction (Gen)
(General) 104, Moscone Center



Eugene García (*eugene.garcia@asu.edu*), Vice President for Education Partnerships, Arizona State University at the Phoenix Downtown Campus, Phoenix

President: Natalie Yakushiji (*natalie_yakushiji@berkeley.edu*), Program Coordinator, NSTA San Francisco National Conference, and K–5 Specialist, Full

Option Science System, Lawrence Hall of Science, University of California, Berkeley

Recent research and analysis of best practices regarding the education of English language learners emphasize the interaction between “language learning” and “content learning.” Dr. García will present an overview of research that focuses on this interaction in elementary science classrooms with English language learners.

Eugene García is vice president for Education Partnerships at Arizona State University (ASU). Since 2002, García has been on the ASU faculty. Previously, he served as professor and dean of the Graduate School of Education at the University of California, Berkeley.

Dr. García has also held academic appointments at the University of Utah and the University of California, Santa Cruz. He holds leadership positions in professional organizations and continues to serve in an editorial capacity for psychological, linguistic, and educational journals and is a proposal panel reviewer for several federal, state, and foundation agencies.

His research involves areas of effective schooling for linguistically and culturally diverse student populations. He is chairman of the National Task Force on Early Education for Hispanics funded by the Foundation for Child Development (www.ecehispanic.org).

His authorship in the area of language teaching and bilingual development is extensive, including books Hispanic Education in the United States: Raíces y Alas, Student Cultural Diversity: Understanding and Meeting the Challenge, and Teaching and Learning in Two Languages.

García received his PhD in human development from the University of Kansas and served as a postdoctoral Fellow in human development at Harvard University and as a National Research Council Fellow.

NSTA is grateful to Shell for sponsoring this session.

1:30–4:00 PM Exhibitor Workshop**Elementary Science Notebooks for Formative Assessment with FOSS (For Experienced Users) (Gen)***(Grades K–6)**130, Moscone Center*

Sponsor: Delta Education/School Specialty Science—FOSS

Brian Campbell, Lawrence Hall of Science, University of California, Berkeley**Ellen Mintz**, Charleston County Schools, Charleston, S.C.

Through a hands-on FOSS investigation, we'll expand on the essential components of student-centered science notebooks for K–6, look for evidence of learning to inform practice, and explore ways to provide effective feedback. We'll demonstrate how to use notebooks to guide instruction through embedded assessments and next-step strategies. Take home sample FOSS materials.

2:00–2:30 PM Presentations**SESSION 1****Talking Science: A School-wide Approach (Gen)***(Elementary)**Golden Gate 2, Hilton*

Rebecca Hairston (hairston@utdallas.edu) and **Enid Fritts** (efritts@dallasisd.org), David G. Burnet Elementary School, Dallas, Tex.

Presider: Marc R. Hairston, The University of Texas at Dallas, Richardson

Our elementary school used a science grant to get everyone on campus “talking science.” Teachers participated in science workshops, a science lab was set up, students went on super science field trips, and extra resources were purchased. So, did it pay off?

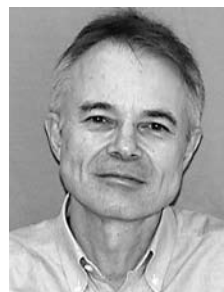
SESSION 2**Supporting Strategies to Make Science More Accessible to ELLs (Env)***(General)**262, Moscone Center*

Gioya A. De Souza-Fennelly (gioyafennelly@aol.com) and **Ana C. Gell-Smith** (anacgell@hotmail.com), I.S. 143M, New York, N.Y.

Odalys Trapote Igneri (oiagneri@schools.nyc.gov), New York City (N.Y.) Dept. of Education

Presider: Odalys Trapote Igneri

Learn about variables that have a direct impact on the science results of your ELLs and gain an overview of high-yield strategies at I.S. 143M.

2:00–3:00 PM NSTA/ASE Honors Exchange Lecture**The Common Core Standards: A Rationale for Practices (Gen)***(General)**102, Moscone Center*

Jonathan Osborne (osbornej@stanford.edu), Shriram Family Professor of Science Endowed Chair, Stanford University, Stanford, Calif.

Presider: Richard Needham, Chair, Association for Science Education, Herts, U.K.

Ever since its inception, science education has put a premium on the need to teach students how to reason and to think critically in science. Indeed, it is possible to sketch a history of science education as a series of successive attempts and failures to achieve this goal. Does the focus on “scientific practices” in the new framework for the common core standards offer any advancement in our understanding of what should be taught in science, and how it should be taught? As one of the authors of this section of the framework, drawing on the work I and others have conducted in the field of argumentation in science education, this talk will argue for this new perspective. In particular, it will show why engaging in the practice of criticism is essential to building an understanding of science. In short, that knowing why the wrong answer is wrong matters as much for student learning as knowing why the right answer is right.

Jonathan Osborne currently holds the Shriram Family Professor of Science endowed chair at Stanford University.

Prior to his Stanford professorship, Osborne was the chair of Science Education at King's College London and head of the Department of Education and Professional Studies from 2005 to 2008. A faculty member at King's since 1985, he has also taught physics in inner London for nine years. In 2002, he was an advisor to the House of Commons Science and Technology Committee for their report on Science Education. In 2006–2007, he served as president of the U.S. National Association for Research in Science Teaching.

He has an extensive record of publications and research grants in science education in the field of primary science, science education policy, the teaching of science history and argumentation, and informal science education. His current research expands on ideas from his 1998 work Beyond 2000: Science Education for the Future and looks into how argument and discussion can be promoted and developed.

NSTA is grateful to the Association for Science Education for sponsoring this session.

2:00–3:00 PM Presentations

SESSION 1



NSTA Press Session: Get the FACTs: Formative Assessment Classroom Techniques (Gen)

(General) Continental 6, Hilton

Page Keeley (pagekeeley@gmail.com), 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta

Joyce B. Tugel (jtugel@mmsa.org), Maine Mathematics and Science Alliance, Augusta

Experience a “formative assessment strategy harvest” of practical strategies for linking assessment, instruction, and learning.

SESSION 2

The Greenhouse Effect—Hayes Cooper Style (Gen)

(Preschool–Middle Level) Golden Gate 1, Hilton

Amanda Bonner (hccsci@yahoo.com) and **Patsy D. Reese**, Hayes Cooper Center, Merigold, Miss.

Presider: Patsy D. Reese

Hayes Cooper’s greenhouse provides an environment that not only nurtures plants but also students’ growth. Basic life sciences are integrated into the 21st century.

SESSION 3

Forestry Field Studies for High School Students

(Env)

(High School–College) Golden Gate 5, Hilton

David D. Glenn, Retired Educator, Oakland, Mich.

Want to put your students in the field collecting data on a forest ecosystem so they can construct a sustainable resource management plan? Learn how!

SESSION 4

The Best Science Education Articles of 2010: Research from the Affiliates (Gen)

(General) Union Square 3/4, Hilton

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

We will examine the top research articles from NSTA affiliates. This is research worth reading!

SESSION 5

Professional Learning Communities: A Mentoring Support System at the Teacher Institute on Science and Sustainability (Gen)

(General) Union Square 14, Hilton

Lorie Topinka (ltopinka@calacademy.org) and **Sarah P. Delaney** (sdelaney@calacademy.org), California Academy of Sciences, San Francisco

Scott Burg (scott@rockman.com), Rockman et al, San Francisco, Calif.

Isabel N. Quita (quitai@yahoo.com), San Francisco State University, San Francisco, Calif.

Presider: Lorie Topinka

Learn how mentoring can support the development of professional learning communities (PLCs) in your school. When do PLCs work? How do they work?

SESSION 6

The Power of Partnership: Scientists and Teachers Enriching Science in Classrooms (Gen)

(General) Union Square 17/18, Hilton

Jean T. MacCormack (jean.maccormack@ucsf.edu), **Ben W. Koo** (ben.koo@ucsf.edu), and **Lakisha M. Witzel** (lakisha.witzel@ucsf.edu), University of California, San Francisco

Presider: Jean T. MacCormack

Through partnership programs, teachers and scientists collaborate to teach engaging hands-on science lessons. Learn about this powerful model and how to access exemplary online lessons.

SESSION 7

CESI Session: Enhance K–8 Classrooms with *Ready, Set, Science!* (Gen)

(Elementary–Middle Level) Union Square 21, Hilton

Thomas E. Keller (tkeller@nas.edu), National Academy of Sciences, Washington, D.C.

Michael A. Feder (mfeder@nas.edu), National Research Council, Washington, D.C.

Margo Bartiromo, Merck Institute for Science Education, Rahway, N.J.

Based on a research study, *Ready, Set, Science!* is aimed at K–8 science classrooms. Explore models of professional development that use this product and its companion resource, *Taking Science to School*.

SESSION 8**Prime the Pipeline: Putting Knowledge to Work****(Gen)**

(High School–College/Informal) Union Square 25, Hilton
Carole E. Greenes (*cgreenes@asu.edu*), Arizona State University, Tempe

In scientific villages, science/math teachers, high school students, scientists, and mentors collaborate to address long-term projects that mirror those faced by STEM professionals.

SESSION 9**Screencasting Your Classroom Lessons: It's Easy and Effective!****(Gen)**

(Elementary–High School) Yosemite C, Hilton
Ray Barber (*rbarber@chicousd.org*), Pleasant Valley High School, Chico, Calif.

See how easy and effective it is to use screen capture software to record and save your lessons and presentations as a video file.

SESSION 10**Science Teacher and Researcher (STAR) Program****(Phys)**

(General) Golden Gate Salon A, Marriott
John M. Keller, California Polytechnic State University, San Luis Obispo

Learn about paid summer research opportunities at DOE and NASA facilities for preservice and early-career science and math teachers in California and other states.

**SESSION 11** (two presentations)

(High School–College) Golden Gate Salon C1, Marriott

Citizen Science: setiQuest **(Earth)**

Jill C. Tarter (*tarter@seti.org*) and **Avinash Agrawal** (*aagrwal.seti.org*), SETI Institute, Mountain View, Calif.

The SETI Institute presents setiQuest, an introduction to citizen science projects. See how you can join in the search for ET.

MONS: North Carolina High School Students and Space Science Research **(Earth)**

David H. Lineberger (*howard.lineberger@da.org*), Durham Academy Upper School, Durham, N.C.

Sam Fuerst (*sam.fuerst@dpsnc.net*), Northern High School, Durham, N.C.

MONS is an extraordinary program in which high school students do college-level research in the space sciences. We'll look at the unique protocol building process and principles of the curriculum, which is anchored by spectroscopy and thermal studies.

SESSION 12**NOAA Follow-Up Session: Climate Change Impacts to the North-Central California Coast** **(Env)**

(General) Golden Gate Salon C2, Marriott

Carol Preston, Gulf of the Farallones, National Marine Sanctuary, San Francisco, Calif.

Claire Fackler (*claire.fackler@noaa.gov*), NOAA Office of National Marine Sanctuaries, Santa Barbara, Calif.

Regional physical changes include sea level rise, coastal erosion and flooding, changes in precipitation and runoff, ocean-atmosphere circulation, and ocean water properties. Learn more!

SESSION 13**Learning Physics Through Experiments: Significance of Students' Interpretation of Error** **(Phys)**

(Middle Level–College) Nob Hill B, Marriott

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

In order to truly learn from experiments in physics, students need to be able to interpret the role of experimental error in their data. We'll look at critical issues.

SESSION 14

Melding Traditional and Technology Strategies in Physics to Support Second Language Students

(Phys)

(High School)

Nob Hill C, Marriott

Ruben Rodriguez (*rrodriguez2@boston.k12.ma.us*), East Boston High School, Boston, Mass.

Jonathan W. McLaughlin (*jmclaughlin4@boston.k12.ma.us*), Boston (Mass.) Public Schools

An urban physics teacher melds traditional and technology strategies to support Spanish language–dominant students in communicating physics knowledge on standardized assessments.

SESSION 15

NSF Follow-Up Session: Warming Oceans, Rising Sea Levels, and the West Antarctic Ice Sheet

(Earth)

(Informal Education)

Pacific B, Marriott

Ross D. Powell, Northern Illinois University, DeKalb

Learn about an effort by scientists to develop more realistic ice-sheet models of the Antarctic that can lessen uncertainties about future ice sheet changes and sea-level rise. Discuss data from the new RAGES (Robotic Access to Grounding-zones for Exploration and Science) initiative, which is a part of the WISSARD (Whillans Ice Stream Subglacial Research Drilling) project.

SESSION 16 (two presentations)

(Middle Level–High School)

Pacific C, Marriott

WISE Mission: We Found Another Asteroid!

(Earth)

Christopher D. Martin (*martinbrockie@gmail.com*), Howenstine High Magnet School, Tucson, Ariz.

My students used Wide Infrared Survey Explorer images to locate near-Earth objects (NEOs) and asteroids. Images were updated with ground-based telescopes and further examined with astronomical software.

Look Out for Asteroids!

(Earth)

Susan Kelly (*earthkelly@gmail.com*), NASA Education, Bridgewater, Conn.

Vincent Pereira, Freeport (N.Y.) School District

Christopher D. Martin, Howenstine High Magnet School, Tucson, Ariz.

Students help astronomers distinguish between asteroids and other astronomical objects by analyzing images using simple software. We'll share supporting resources.

SESSION 17

Facing the Future: Education for Sustainability Through Service Learning

(Env)

(Middle Level–High School)

Pacific F, Marriott

Naomi Harper (*nharper@sanjuan.edu*) and **Russell Harper** (*rcharper@yahoo.com*), Will Rogers Middle School, Fair Oaks, Calif.

Presenter: Russell Harper

Service learning is a teaching tool that ties academic curricula to a service project that reinforces and expands student learning. We'll share several successful examples.

SESSION 18

Engaging Students in Scientific Inquiry Using Web 2.0 Technologies and Social Collaboration

(Env)

(Middle Level–High School)

Pacific J, Marriott

Randall Thomas (*rthomas@globe.gov*), The GLOBE Program, Boulder, Colo.

I will share the results of a collaboration between schools nationally and internationally that integrates Web 2.0 technologies with scientific inquiry.

SESSION 19 (two presentations)

(General)

Sierra A, Marriott

Climate Change in My School Yard?

(Env)

Katie Levedahl (*klevelandahl@sciencenter.org*), Sciencenter, Ithaca, N.Y.

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

Citizen science projects offer an exciting way to learn about the nature of science, contribute to scientific understandings, and explore the puzzle of climate change.

Urban Youth and Global Climate Change: A Partnership Between the Columbus Zoo and Columbus City Schools

(Env)

Geri Granger (*ggranger9556@columbus.k12.oh.us*), Columbus (Ohio) City Schools

Students are involved in an immersive educational experience combining handheld computers with the zoo's newest exhibit, Polar Frontier, to explore global climate change.

SESSION 20

Inquiry and Urban AP—From RET to Inquiry

(Chem)

(High School)

Sierra C, Marriott

Gregory T. Banks (*gbanks@urbansci.net*), Urban Science Academy, West Roxbury, Mass.

Learn how to use an RET inquiry lesson to teach a major AP Chemistry topic to inner-city students.

SESSION 21

Creating Standards-based Science Lessons Inspired by Public Policy (Gen)

(High School)

Sierra E, Marriott

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

Based on policy talks given by AAAS scientists, seven standards-based science lessons were developed and field-tested. Lesson plans are discussed and distributed.

SESSION 22

Data: It's Not a Four-Letter Word (Gen)

(General)

Sierra H, Marriott

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

NOAA's data are not your grandfather's data! NOAA data resources rival MTV (well, almost) and are readily available for your use.

SESSION 23

Gross 'em Out (Gen)

(Middle Level–High School)

Sierra I, Marriott

Helena Easter (*heaster@richmond.k12.va.us*), Richmond (Va.) Public Schools

Gross your students out with labs and demos that present real-life scenarios and reflect real-life decisions. Handouts and CD.

SESSION 24

Sci-casting—Make Them Beg for More! (Gen)

(General)

113, Moscone Center

Robert Jefferson, Jr. (*mrrtj@yahoo.com*), Tantasqua Regional Senior High School, Fiskdale, Mass.

Add a wow factor to your classroom with podcasting and create a learning environment that strongly encourages and facilitates student learning.

SESSION 25

The Sound Museum (Gen)

(General)

200, Moscone Center

Constance L. McCammon (*mccammoc@cisdmil.com*), **Angelina N. McArthur** (*mcarthua@cisdmil.com*), and **Gayle N. Bunch** (*bunchg@cisdmil.com*), Old Union Elementary School, Southlake, Tex.

Here is a cross-curricular approach to teaching science and the fine arts. The Sound Museum is a fully integrated program for teaching the concept of sound.

SESSION 26

High School Determinants of Success in College Calculus (Gen)

(General)

208/210, Moscone Center

Gerhard Sonnert (*gsonnert@cfa.harvard.edu*) and **Melissa Barnett** (*mbarnett@cfa.harvard.edu*), Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

Presider: **Philip Sadler** (*psadler@cfa.harvard.edu*), Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.

We present the results of a large-scale national study that examined which aspects of students' high school mathematics preparation contribute to their success in college calculus.

SESSION 27

**We're All in This Together: Watersheds and You!**

(Env)

(Elementary–Middle Level/Informal) 220/222, Moscone Center

Carl J. Carranza (*carl.carranza@lacity.org*), Cabrillo Marine Aquarium, San Pedro, Calif.

Learn some easy and fun activities that you can use to help your students understand how their choices can affect the environment.

SESSION 28

**Building Student Science Inquiry: Authoring Your Own Science Literature Book** (Earth)

(Elementary–High School)

224/226, Moscone Center

Teresa A. Le Sage (*lesaget@uhv.edu*), University of Houston–Victoria, Tex.

Promote literacy achievement by combining science inquiry, math, and language with WikiBooks. Students use technology to author a science book.



2:00–3:00 PM Workshops

The DNA Subway: A Fast Track to Gene Annotation and Genome Comparison (Bio)

(High School–College/Informal) Continental 1, Hilton
Jason Williams (williams@cshl.edu) and **Uwe Hilgert** (hilgert@cshl.edu), Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

A new interactive internet site, DNA Subway, presents data and bioinformatics tools in a work space that makes high-level genome analysis available to students and educators.

Food Chains: Using Field Surveys That Give Real Numbers (Bio)

(Middle Level) Continental 8, Hilton

Roy F. Tison, Wheaton (Ill.) Park District

Frederick E. Maier (fmaier@itasca.com), Village of Itasca Nature Center, Itasca, Ill.

Explore three hands-on survey techniques that allow students to calculate actual numbers of plants, herbivores, and carnivores in creating a food chain.



NSTA Press Session: Developing Visual Literacy in Science, K–8 (Gen)

(Elementary–Middle Level/Supervision) Continental 9, Hilton

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

Michael Comer (michael_comer@mcgraw-hill.com), McGraw-Hill School Education Group, Columbus, Ohio

Enhance your students' skills in interpreting charts, diagrams, and other visual texts with this new instructional guide. Visual literacy skills are especially critical for those students pursuing STEM careers.

Concept Mapping with Young Learners (Gen)

(Preschool–Elementary) Golden Gate 3, Hilton

Carol A. Brennan (carolb@hawaii.edu), University of Hawaii, Honolulu

Construct and share a variety of concept maps designed to address the learning characteristics of young children.

Exuberant Exploration: Creating a Strong Preschool Science Program (Gen)

(Preschool) Golden Gate 6, Hilton

Karen Miel and **Carl Oosterman**, CuriOdyssey, San Mateo, Calif.

Build a joyful, easy, inexpensive preschool program that explores serious science. Try several hands-on activities and take home handouts of instructions and additional ideas.

Supporting Elementary Students in Science Writing Using Claims, Evidence, and Reasoning (Gen)

(Elementary) Golden Gate 7, Hilton

Katherine L. McNeill (kmcneill@bc.edu), Boston College, Chestnut Hill, Mass.

Dean M. Martin (anderson.martin@netzero.com), Gardner Pilot Academy, Boston, Mass.

Use rubrics to examine student writing, discuss common student difficulties, and explore strategies for increasing student proficiency in science writing.

Bringing Underwater Robotics to Your Classroom (Gen)

(General) Golden Gate 8, Hilton

DeDee Ludwig (dludwig@shedd-aquarium.org) and **Jacqueline M. Formoso** (jformoso@shedd-aquarium.org), John G. Shedd Aquarium, Chicago, Ill.

Learn how to build an underwater robot and create an underwater robotics program in your own school. Curriculum resources will be provided.

How Safe Is It? Engineering and Cost Considerations When Building Classroom Structures (Phys)

(Elementary–Middle Level) Union Square 15/16, Hilton

William J. Sumrall (sumrall@olemiss.edu) and **Kristen M. Sumrall** (sumrall@olemiss.edu), The University of Mississippi, University, Miss.

Help students understand the physics behind building a solid structure with these activities that focus on economic, safety, and quality factors in the construction of various structures. This problem-based unit emphasizes STS and engineering careers. Handouts provided.

Engaging Middle School Students in the Intermediate-Level Science Curriculum (Gen)

(Middle Level) Union Square 19/20, Hilton

Rebecca Scott (rebecca.scott@greece.k12.ny.us), Athena Middle School, Rochester, N.Y.

Edel M. Maeder (edel.maeder@greece.k12.ny.us), Greece Central School District, Rochester, N.Y.

Participate in activities related to the teaching and learning of intermediate-level science. All lessons and projects are hands on and student centered.

Professional Development: Capturing the Trends, Practices, and Research to Strengthen Science Teaching and Learning (Gen)

(Supervision/Administration) Union Square 23/24, Hilton
LaMoine L. Motz (*llmotz@comcast.net*), 1988–1989 NSTA President, and Oakland County Schools, Waterford, Mich.

Jack Rhoton (*rhotonj@etsu.edu*), East Tennessee State University, Johnson City

Gerry M. Madrazo, Jr. (*gerrymadrazo@hotmail.com*), 1993–1994 NSTA President, and Madrazo Multicultural Educational Consulting, Honolulu, Hawaii

Emma L. Walton (*elwalton@aol.com*), 1999–2000 NSTA President, and Science Consultant, Anchorage, Alaska
 Presider: LaMoine L. Motz

Join our group of science education leaders as we share current research, teaching and learning models, projects, and collaborative initiatives toward improving science teaching and learning through professional development and leadership. Take home a materials packet.

Butterfly Bonanza (Bio)

(General) Golden Gate Salon C3, Marriott
Nancy R. Sale, Lillie C. Evans Elementary School, Miami, Fla.

Butterfly Bonanza provides a road map to success for implementing a native butterfly habitat. Take home a starter kit and DVD. Door prizes!

Using Interdisciplinary Polar Research Toward the Understanding of the Earth System and Climate (Gen)

(Informal Education) Nob Hill A, Marriott

Janet Warburton (*warburton@arcus.org*) and **Kristin Timm** (*kristin@arcus.org*), Arctic Research Consortium of the U.S., Fairbanks, Alaska

Bring inquiry-based polar science and climate change literacy to the classroom. Teachers and researchers will share information and activities.

Introducing Students to Real-World Pharmaceutical Applications (Chem)

(Middle Level–College) Nob Hill D, Marriott

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

Jorge Pozo (*jpozo@seas.harvard.edu*), Harvard University, Cambridge, Mass.

This hands-on activity for use in biology and chemistry courses introduces concepts in the design of drug delivery systems.

A Coherent Approach to Energy in High School Biology (Bio)

(General) Pacific H, Marriott

Marie Searce (*mscearce@me.com*), Bartram High School, Philadelphia, Pa.

Apply representations of energy storage and transfer during photosynthesis, cellular respiration, and ecology consistent with modeling instruction in high school physics and chemistry.

The GLOBE Carbon Cycle Project: Using a Systems Approach to Explore Carbon, Ecosystems, and Climate (Env)

(High School) Sierra B, Marriott

Sarah K. Silverberg, University of New Hampshire, Durham

Gary Randolph (*randolph@globe.gov*), The GLOBE Program, Boulder, Colo.

Presider: Gary Randolph

Learn how to engage students in carbon cycle science through data collection and systems thinking.

Extra! Extra! Read All About the Universe! (Earth)

(High School) Yerba Buena Salon 14, Marriott

James Lochner, Universities Space Research Association and NASA Goddard Space Flight Center, Greenbelt, Md.

See how your students can blend together science, journalism, and history by studying our changing understanding of the universe with NASA's *Cosmic Times*.

NanoSize Me: Helping Students Understand Size-dependent Properties (Gen)

(High School) Yerba Buena Salon 15, Marriott

Anne L. Tweed (*atweed@mcrel.org*), 2004–2005 NSTA President, and Mid-continent Regional Educational Laboratory (McREL), Denver, Colo.

John Ristvey (*jristvey@mcrel.org*), Mid-continent Regional Educational Laboratory (McREL), Denver, Colo.

Learn effective strategies for integrating nanoscience learning goals related to size-dependent properties into secondary science classrooms. Handouts and a free copy of the *NanoLeap* CD.

Urban Legends—Real? (Gen)

(General) 111, Moscone Center

Pam Elmendorf (*pam_elmendorf@roundrockisd.org*) and

Karen Lovelace (*karen_lovelace@roundrockisd.org*), Bluebonnet Elementary School, Round Rock, Tex.

Grab students' attention with this lesson that uses urban legends, notebooking, and claims/evidence.

Literacy: The Core of a Science Inquiry Lesson

(Gen)

(General) 112, Moscone Center

Pam Caffery (pamela.caffery@sdhc.k12.fl.us), Hillsborough County Public Schools, Tampa, Fla.

Michele Detwiler (michele.detwiler@sdhc.k12.fl.us), Turkey Creek Middle School, Plant City, Fla.

Literacy and science are natural partners in inquiry. Here is a working model that incorporates the new common core standards into an inquiry lesson.

Where Do We Stand? Activities to Assess Our Own Views of the Nature of Science

(Gen)

(General) 212, Moscone Center

Ron Gray (ron.gray@science.oregonstate.edu), Oregon State University, Corvallis

These activities allow us to examine our own views about science in order to better communicate it to our students.



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

(Phys)

(High School) 228/230, Moscone Center

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

Use an inexpensive rubber band slingshot to teach work, energy, and Newton's first law of motion.



Investigating Supernova Remnants

(Earth)

(Middle Level–High School) 232/234, Moscone Center

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

Donna L. Young (donna.young@tufts.edu), Chandra E/PO Office, Cambridge, Mass.

Doug Lombardi (lombar37@unlv.nevada.edu), University of Nevada, Las Vegas

Use spectra from different supernova remnants to study the distribution of elements and determine the masses and evolutionary histories of the stars that were destroyed.

2:00–3:00 PM Exhibitor Workshops

Quality Interactive Science Lessons, Part 2: How to Create Them

(Phys)

(Grades K–12) 274/276, Moscone Center

Sponsor: DYMO/Mimio

Lois Page, DYMO/Mimio, Cambridge, Mass.

In this workshop, we will provide hands-on training to show you how you can take “A Shopping List for Quality Interactive Science Lesson Content” and add your expert knowledge and creativity to easily spot or create lesson content that will be scrumptious brain food for your students!

Project-Based Inquiry Science (PBIS) Programs: A Teacher Roundtable

(Gen)

(Grades 6–12) 307, Moscone Center

Sponsor: It's About Time

Mary Starr, University of Michigan, Ann Arbor

In this interactive workshop, teachers who have implemented PBIS will share their experiences on the impact of student learning. The teachers come from middle school and high school in urban and suburban districts. Plenty of time for questions and answers.

2:00–3:30 PM Exhibitor Workshops

Engage Your Hands and Minds While Building Body Systems in Clay!

(Bio)

(Grades 7–College) 110, Moscone Center

Sponsor: Hands & Minds Inc.

Tammy Crain, Hands & Minds Inc., Loveland, Colo.

Learn how fun and engaging teaching is with the Anatomy in Clay® learning system. Your students will retain more and score higher with this hands-on approach to anatomy.

Forensics for the Biology Laboratory

(Bio)

(Grades 9–12) 120, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Take a new approach with traditional biology labs—use forensics! Perform sample activities from the innovative *Forensics for the Biology Laboratory* manual and associated kits. The inquiry-based, cooperative learning activities offer real-world applications as students collect forensic evidence and perform experiments to yield results for the courtroom.

SQUID INK-UIRY: Inquiry-based Invertebrate Anatomy Through Squid Dissection (Bio)*(Grades 9–12)* 121, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Use squid to teach animal diversity and address the standards for life science. Learn morphology and anatomy of the squid through hands-on guided dissection of the organ systems. Large specimens provide a clear view of invertebrate anatomy to observe the relationship between form and function in the squid.

Learning to Read, Reading to Learn: Literacy, Notebooks, and the Power of Inquiry! (Gen)*(Grades K–5)* 122, Moscone Center

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Science notebooks springboard into math, social studies, and language arts. Learn how notebooking can increase student engagement and test scores. Using materials from the STC Program™ and Carolina Curriculum, learn how to use science to develop skills for language arts and other subjects. Free classroom materials provided.

Using Google Earth in Science (Gen)*(General)* 123, Moscone Center

Sponsor: Google

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

For years, Google's Geo products have been identified as a powerful learning tool kit that can help students conceptualize, visualize, share, and communicate information about the world around them. Come learn how you can use these tools in your science classroom to create more engaging and meaningful lessons for your students.

The Wired Brain: What Research Tells Us About Attention (Bio)*(Grades 6–College)* 124, Moscone Center

Sponsor: Society for Neuroscience

Adam Gazzaley, University of California, San Francisco
Multitasking comes with a price—students' ability to learn, focus, and remember is affected by the constant influx of information from e-mails, video games, and text messages. Hear from a leading neuroscientist about the impact technology has on students' brains and how new research can be applied in the classroom.

One in a Million!**(Chem)***(Grades 10–12)*

125, Moscone Center

Sponsor: LAB-AIDS, Inc.

Tom Hsu, Author, Andover, Mass.

Too many students never get the chance to use a spectrophotometer in high school chemistry, often due to cost or durability concerns. Real chemistry for all students, *A Natural Approach to Chemistry* uses a powerful, intuitive, and classroom-rugged probe system, featuring an RGB spectrophotometer—a powerful analytical tool.

Make Dimensional Analysis Fun with CPO Science's New Conversion Chain Cards (Phys)*(Grades 5–12)*

131, Moscone Center

Sponsor: CPO Science/School Specialty Science

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

We've turned dimensional analysis into a fun card game that challenges students to convert between commonly used units. Play from our physical science, physics, or chemistry game decks or swap between groups to see all three. Come see how students learn dimensional analysis easily with our new Conversion Chain Cards.

Try Science's Blue Ice Experiment (Chem)*(Grades 1–8)*

132, Moscone Center

Sponsor: Lesley University

Michael Thibodeau (mthibode@lesley.edu), Lesley University, Cambridge, Mass.

Using an inquiry-based activity from Lesley University's fully online Science in Education Masters program, participants will explore the complexity of a simple glass of water. Try Science is the introductory course on science inquiry designed for classroom teachers and specialists responsible for grades 1–8 science education.

Work Abroad! American and International Schools—Worldwide (Gen)*(Grades K–12)*

133, Moscone Center

Sponsor: International Schools Services

Keith Cincotta (keithcincotta@gmail.com), International School Services, Princeton, N.J.

Do you want to broaden your perspective by working overseas? Does helping U.S. and international students living abroad appeal to you? Check out International Schools Services' (ISS) Educational Staffing Program. ISS offers overseas schools year-round services with recruiting teaching and administrative staff.

Free Resources from the Howard Hughes Medical Institute (HHMI) to Enhance Your Lessons on DNA and Biotechnology (Bio)

(Grades 9–College) 134, Moscone Center

Sponsor: Howard Hughes Medical Institute

Ann Brokaw (*abrokaw44@gmail.com*), Rocky River High School, Rocky River, Ohio

Receive teacher-prepared ideas for using HHMI resources to enhance classroom instruction of biotechnology and DNA structure and function. In addition to DVDs and website information, participants will receive a biotechnology virtual lab CD-ROM and classroom-ready activities associated with the DNA-related virtual labs.

It's How They Learn: 50 Ways to Use Discovery Education Content (Gen)

(Grades K–12) 206, Moscone Center

Sponsor: Discovery Education

Presenter to be announced

More than half of the schools in the U.S. incorporate Discovery Education digital content into their instruction. Come see why services like Discovery Education *streamingPlus* and Discovery Education Science work for students.

Living By Chemistry: Feeling Under Pressure (Chem)

(Grades 9–12) 256, Moscone Center

Sponsor: Key Curriculum Press

Angy Stacy and **Jan Coonrod**, University of California, Berkeley

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

Teach rigorous chemistry with guided inquiry! Let's explore activities that help students understand gas behavior and gas laws through a weather context. Sample lessons from Living By Chemistry provided.

ScholAR Hands-On Hand Jive (Chem)

(Grades 6–12) 270/272, Moscone Center

Sponsor: ScholAR Chemistry

Paul Schneeberger (*pschneeberger@vwreducation.com*), ScholAR Chemistry, Tonawanda, N.Y.

Learn how to incorporate safe, exciting, and easy-to-perform chemistry demonstrations in your classroom. Participants will perform six actual demonstrations using simple materials. We'll discuss when to use the demos, how to address concepts and misconceptions, how to enhance these demos to your style, and how to incorporate student work sheets.

Circuits to Circuits: Building Your Own Equipment to Study Neurons (Bio)

(Grades 7–College) 300, Moscone Center

Sponsor: Backyard Brains, Inc.

Timothy Marzullo (*tim@backyardbrains.com*) and **Gregory Gage** (*gagereg@backyardbrains.com*), Backyard Brains, Inc., Ann Arbor, Mich.

Do you want to bring neuroscience into your classroom? Join us as we show you how to build your own amplifier. We'll then do some experiments on the nervous system of insects. Free action potentials to all who attend.

Advanced Biology and Biotechnology with Vernier (Bio)

(Grades 9–College) 301, Moscone Center

Sponsor: Vernier Software & Technology

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

This presentation will feature several standard AP Biology experiments and discussion on how these activities can be extended to incorporate inquiry-based student discoveries. You will have the opportunity to use several sensors with LabQuest or LabQuest Mini interfaces and our award-winning Logger *Pro* software.

Inquiry Chemistry with Vernier (Chem)

(Grades 9–College) 302, Moscone Center

Sponsor: Vernier Software & Technology

Robyn Johnson (*info@vernier.com*) and **Don Volz** (*info@vernier.com*), Vernier Software & Technology, Beaverton, Ore.

In this hands-on workshop, you will become the student as you investigate intermolecular attractions by designing and conducting an inquiry-based experiment. Learn how to collect data using temperature probes on a LabQuest or on a computer using LabQuest Mini. This experiment is from our lab book, *Investigating Chemistry Through Inquiry*.

Teaching the Digital Generation (Gen)

(Grades 9–12) 303, Moscone Center

Sponsor: McGraw-Hill School Education Group

Lisa VanAllsburg (*lisa_van_allsburg@mcgraw-hill.com*), McGraw-Hill, Columbus, Ohio

Learn how to engage your students with gaming and social networking!

Analyzing Science Data with Web GIS (Earth)*(Grade 10)* 304, Moscone Center

Sponsor: Esri

Joseph Kerski (*jkerski@esri.com*), Esri, Redlands, Calif.**Roger T. Palmer** (*roger@gisetc.com*), GISetc, Dallas, Tex.

Explore how and why web-based GIS (Geographic Information Systems) can be used in Earth science education. Investigate local to global topics such as water quality, oil spills, wildfire, earthquakes, and climate via practical classroom activities supporting science standards and inquiry. Receive free GIS software and classroom resources.

Science Under Siege? Teaching Evolution in a Climate of Controversy (Bio)*(Grades 9–12)* 305, Moscone Center

Sponsor: Pearson

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

Eighty-five years after the Scopes trial, evolution remains a controversial topic. The nationwide struggle over the place of evolution in the biology curriculum continues. As lead witness in the 2005 Dover “Intelligent Design” trial, I will discuss the continuing controversy and suggest how educators can deal with it successfully. We will review some of the commonly held misconceptions about the process as well as answers to some of the widely used arguments against evolution. Participants will be presented with resources to respond to challenges commonly faced in the classroom and community when teaching evolution.

Teaching Elementary Science with a Digital Curriculum (Gen)*(Grades K–5)* 308, Moscone Center

Sponsor: Houghton Mifflin Harcourt

Presenter to be announced

Learn how to teach a comprehensive curriculum with no textbooks using the digital curriculum for the new Houghton Mifflin Harcourt *ScienceFusion* K–5 program.

Beyond the Storybook (Env)*(Grades K–5)* 309, Moscone Center

Sponsor: Dawn Publications

Marianne Berkes (*mberkesbooks@aol.com*), Author, Hobe Sound, Fla.

Come prepared for a lively, fun-filled session brimming with ideas on how to use Marianne Berkes’s interactive picture books that incorporate music, art, science, math, and nature. Because she blends fiction with nonfiction, her books are a valuable resource at any grade level.

2:00–6:00 PM Short Course**NSTA Press Session: Lecture-Free Teaching: A Learning Partnership Between Science Educators and Their Students (SC-22)***(High School–College)* Conference Theatre, Grand Hyatt**Tickets Required: \$48****Bonnie Wood** (*bonnie.s.wood@umpi.edu*), University of Maine at Presque Isle

For description, see Volume 1, page 70.

2:30–3:00 PM Presentation**SESSION 21****STEM Through Culturally Based Contexts Using a Hybrid Online Environment (Gen)***(General)* 250, Moscone Center**Brant G. Miller** (*bgmiller@uidaho.edu*), University of Minnesota, Minneapolis

Explore STEM content understanding using culturally based contexts that are mediated through a hybrid online learning environment using the Adventure Learning framework.

2:30–3:00 PM Workshop**COSEE Session: Linking Our Ocean and Climate Through Innovative Learning Connections, Part 2 (Earth)***(Middle Level–High School)* Willow, Marriott**Liesl Hotaling**, Centers for Ocean Sciences Education Excellence, Highlands, N.J.

Learn the most recent scientific understanding of the “big picture” of climate change and the potential effects. Centers for Ocean Sciences Education Excellence (COSEE) materials, designed for grades 6–12, aim to improve ocean literacy.

3:00–3:30 PM Presentation**SESSION 1****COSEE Session: Ocean Observing Systems—Benefits for Teachers and Their Students (Env)***(General)* Willow, Marriott**Lynn Whitley** (*lwhitley@usc.edu*), University of Southern California, Los Angeles

Ocean Observing Systems not only provide important data for research scientists but also create opportunities for teachers to engage students using data from current technology.

3:00–5:00 PM Meeting

NASA Lifelines for High School Climate Change Education Leaders Meeting

Sierra F. Marriott

For more information, please visit lawrencehallofscience.org/gss/lifelines.

3:30–4:00 PM Presentations

SESSION 1

Got Moodle? (Gen)

(Middle Level–College) Union Square 22, Hilton

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

Elizabeth A. Hamann, Lincoln Way North High School, Frankfort, Ill.

Students participate in an electronic discussion forum about a science trade book to increase their understanding of the nature of science.

SESSION 2

Building Standards-based Assessments and Rubrics (Gen)

(General) 200, Moscone Center

Marsha Bednarski (bednarskim@ccsu.edu), Central Connecticut State University, New Britain

Let's examine a template for developing assessments in line with content standards, including building user-friendly scoring rubrics. We'll also look at a district-wide curriculum and teacher leadership.

SESSION 3

ELL Strategies in an Inquiry-based Classroom (Gen)

(General) 262, Moscone Center

Merri K. Herndon (mherndon@sdale.org) and **Jo A. Waldrip** (jwaldrip@sdale.org), Helen Tyson Middle School, Springdale, Ark.

Presenter: Merri K. Herndon

These research-based and classroom-tested strategies are designed to improve language acquisition skills in an inquiry-based classroom.

3:30–4:30 PM Robert H. Karplus Lecture

INSIDE AND OUTSIDE OF THE SCIENCE CLASSROOM: Exploring the Challenges of Science Education in the Next Decade (Gen)

(General)

102, Moscone Center



Gerry Wheeler (gwheeler@nsta.org), Emeritus Executive Director, NSTA, and Senior Scientist, Sangari Global Education, Bozeman, Mont.

Presenter: Marie Bacher (mbacher@scusd.net), Science Coordinator/ELD Science Teacher, Buchser Middle School, Santa Clara, Calif.

Outside the classroom, our students are busy typing with their thumbs while inside they're twiddling them. From smart phones to twitters and blogs, today's youth are plugged into an informal community that is in sharp contrast to their school community. Few would argue that this new generation has a radically different learning style. As we explore effective 21st-century education, our challenge will be providing science education to these wired students.

Gerry Wheeler retired as executive director of NSTA in the fall of 2008. He is currently consulting on science education and nonprofit association management nationally and internationally.

Before joining NSTA, Dr. Wheeler was director of the Science/Math Resource Center and professor of Physics at Montana State University. He also headed the Public Understanding of Science and Technology division at the American Association for the Advancement of Science (AAAS) and has served as president of the American Association of Physics Teachers (AAPT).

For much of his career, Wheeler has played a key role in the development of mass media projects that showcase science for students, such as the creation of 3-2-1 Contact for the Children's Television Workshop and creator and host for Sidewalk Science, a television show for young people on WCAU-TV in Philadelphia. He has also co-directed the National Teachers Enhancement Network, an NSF-funded distance learning project offering science and math courses nationwide.

He received an undergraduate degree in science education from Boston University and his PhD in experimental nuclear physics from the State University of New York at Stony Brook. Between undergraduate and graduate school, he taught high school physics, chemistry, and physical science.

3:30–4:30 PM Presentations**SESSION 1****NSTA Press Session: Uncovering Student Ideas in Physical Science: Force and Motion (Phys)***(Supervision/Administration) Continental 6, Hilton***Page Keeley** (pagekeeley@mmsa.org), 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta

See how formative assessment probes can be used to reveal commonly held ideas about force and motion while enhancing teaching and learning.

SESSION 2**Making Metric Memorable (Gen)***(General) Golden Gate 1, Hilton***Steve Bane** (scitime@gmail.com), SciTime Academy, Glendale, Ariz.**Jodi L. Sanchez** (jodi_sanchez@lusherschool.org), Lusher Charter School, New Orleans, La.

Learn innovative ways to introduce and maintain student understanding of the metric system through storytelling, creative game play, and fun hands-on science investigations.

SESSION 3**Let's Talk About It: Using Classroom Discourse to Support Scientific Understanding (Gen)***(Elementary/Informal Education) Golden Gate 2, Hilton***Cathy J. Kindem**, Cedar Park STEM Elementary School, Apple Valley, Minn.

Promote science learning with talk and argument. Come learn some strategies to boost students' ability to reason as they investigate scientific concepts.

SESSION 4**Queen Conch Research Refuge Ranch (Env)***(High School–College/Informal) Golden Gate 5, Hilton***Jody Terrell** (jterrell@twu.edu), Texas Woman's University, Denton**Betty Carlson Bowles** and **Martha Gibson**, Midwestern State University, Wichita Falls, Tex.

Presider: Brooke J. Monceaux, Texas Woman's University, Denton

This project incorporates fisheries management, education, and natural recovery as an effective strategy to help conserve the queen conch and give students experience in marine research.

SESSION 5**Inquiry and the English Language Learner Student (Gen)***(General) Golden Gate 8, Hilton***Ana G. López** (aglopez@comcast.net), Yokomi Elementary Science and Technology School, Fresno, Calif.**Jerry D. Valadez** (jdvscience@yahoo.com), Chairperson, NSTA San Francisco National Conference, and Central Valley Science Project, Fresno, Calif.**Gloria Rodriguez Bañuelos** (grb@edreap.org), REAP, Santa Ana, Calif.

Learn about current research on why teaching inquiry-based science effectively to English language learner students closes the achievement gap and promotes educational equity.

SESSION 6**Ready, Set, SCIENCE! The Four Strands of Science Learning (Gen)***(General) Union Square 3/4, Hilton***Stacey Gruber** (stacey_gruber@merck.com), Merck Institute for Science Education, Rahway, N.J.**Caroline Crew** (crewcg@verizon.net), Educational Consultant, Lansdale, Pa.

Ready, Set, SCIENCE! is designed to help practitioners make sense of new research on science education and use this research to inform their classroom practice. Engage in a study group discussion focused on the chapter "The Four Strands of Science Learning."

SESSION 7**Building Successful Partnerships with Business and Industry to Support Quality, Sustained Professional Development for K–12 Science and Math Teachers (Gen)***(General) Union Square 17/18, Hilton***Jack Rhoton** (rhotonj@etsu.edu), East Tennessee State University, Johnson City

Successful partnerships between higher education and K–12 districts with business and industry advance the support of science and math learning. I'll share a model proposal.

SESSION 8

CESI Session: Health-based Human Biology Activities for Elementary Students (Bio)

(Preschool–Middle Level) Union Square 21, Hilton
Sue Tunnicliffe (*s.tunnicliffe@ioe.ac.uk*), University of London, U.K.

Ann W. Wright (*wrighta@canisius.edu*), Canisius College, Buffalo, N.Y.

Discover a curriculum designed to teach young children about the human body and health. Concepts deal with taking care of oneself in everyday situations and in emergencies.

SESSION 9 (two presentations)

(General) Union Square 25, Hilton

High School Teachers Collaborate in Building a Community of Practice (Gen)

Sylvia Boynton (*sboynton@coe.ufl.edu*), University of Florida, Gainesville

Rita Vasquez (*vasquez@pcbsb.org*), Pinellas County Schools, Clearwater, Fla.

High school science teachers from three schools meet monthly to study their practice. We'll examine evidence of their leadership development.

TOPS (Teaching Opportunities for Partners in Science) (Gen)

Cathy Parker (*caparker@sjcoe.net*), San Joaquin County Office of Education, Stockton, Calif.

Retiring scientists can bring a wealth of knowledge to students and teachers. Learn how to recruit and train them.

SESSION 10

Using Videoconferencing to Connect Students to Community Science: "Real" Virtual Field Trips (Gen)

(Elementary–High School) Yosemite C, Hilton

Ray Barber (*rbarber@chicousd.org*), Pleasant Valley High School, Chico, Calif.

Readily available videoconferencing technology can connect your classroom to the field. Live, interactive, inexpensive—and it's all produced by your own students!

SESSION 11

NOAA Follow-Up Session: Corals, Tech, and Carbon (Gen)

(Middle Level–High School/Inf) Golden Gate Salon C2, Marriott

Paulo Maurin, NOAA, Silver Spring, Md.

Learn about coral reefs, how they're studied, and impacts from CO₂ in the atmosphere and ocean.

SESSION 12

A Balancing Act: Mechanical Advantage Your Students Can Physically Engage In (Phys)

(Middle Level–High School) Nob Hill B, Marriott

Dan Ratliff, Breck School, Minneapolis, Minn.

Make simple machines come alive for your students! Use a large lever to lift students in the air. Stage a pulley tug-of-war.

SESSION 13

Tesla Tales (Phys)

(Middle Level–High School) Nob Hill C, Marriott

Carlos R. Villa (*villa@magnet.fsu.edu*), National High Magnetic Field Laboratory, Tallahassee, Fla.

Take a journey through the history of electromagnetic discovery. Learn how to recreate the experiments of some of history's greatest scientists in your classroom.

SESSION 14

NSF Follow-Up Session: Icy Life on Earth and Beyond? (Env)

(Informal Education) Pacific B, Marriott

Jill Mikucki (*jill.a.mikucki@dartmouth.edu*), Dartmouth College, Hanover, N.H.

The possibility that life may exist beyond planet Earth has captured the imagination for decades. Our universe is a cold place and our search for extraterrestrial life will likely lead us to icy habitats. To better understand what to look for and how to look for it, we must study icy systems found in our polar regions here on Earth.



SESSION 15

Global Climate: A Planetary Science Perspective (Earth)*(Middle Level–College)**Pacific C, Marriott*

David L. Esker (*david_esker@ymail.com*), Pikes Peak Community College, Colorado Springs, Colo.

Learn how factors such as a planet's distance from the Sun, atmosphere thickness, and air-circulating patterns determine the local climate on a planet's surface.

SESSION 16

Connecting Students, Teachers, and Researchers Globally in Polar Science (Env)*(Middle Level–High School)**Pacific F, Marriott*

Betsy B. Wilkening (*ewilkening99@gmail.com*), Wilson K–8 School, Tucson, Ariz.

Mary Anne Pella-Donnelly (*mdonnell@chicousd.org*), Chico Junior High School, Chico, Calif.

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

Jillian Beth Worssam (*jworssam@fUSD1.org*), Flagstaff (Ariz.) Unified School District

Regina Baker (*brinker.science@gmail.com*), Christensen Middle School, Livermore, Calif.

Presider: Betsy B. Wilkening

Learn how you and your students can collaborate with each other and with polar researchers in a global community.

SESSION 17

Can Wind Power Your Classroom? (Phys)*(Informal Education)**Pacific J, Marriott*

Keith Etheridge, KidWind Project, East Lansing, Mich.

These classroom activities explore real-time data from wind turbines. Compare your classroom power consumption to the power output of real turbines.

SESSION 18

Teachers, Get Out of the Way! Let Students Have Control (Bio)*(Middle Level–High School)**Sierra A, Marriott*

Jessica A. Sanford and **Elizabeth A. Garfinkle**, San Roque School, Santa Barbara, Calif.

Presider: Edie Lanphar, San Roque School, Santa Barbara, Calif.

Meet one student who is exercising her passion for science by adapting a unit to effect change for lifelong learning.

SESSION 19 (two presentations)

*(High School)**Sierra C, Marriott***Google Docs in the Chemistry Classroom (Chem)**

Ellena L. Bethea (*ellena.bethea@trinityschoolnyc.org*), Trinity School, New York, N.Y.

Explore ways to use Google Docs to facilitate collaboration, paperless assignments, and lab reports in the chemistry classroom.

How Students Learn in the Science Classroom with Moodle (Chem)

Sharon Sikora (*sfranz@punahou.edu*), Punahou School, Honolulu, Hawaii

Paul E. Franz (*paulefranz@gmail.com*), Stanford University, Stanford, Calif.

Experience how Moodle can help you determine preconceptions, do science, and have students think about how they learn.

SESSION 20

Be Science Literate (Gen)*(High School)**Sierra E, Marriott*

Linda Rush (*lrush@fortsmithschools.org*), **B. Mason Pyper** (*mpyper@fortsmithschools.org*), and **Todd Phipps**, Southside High School, Fort Smith, Ark.

Presider: Linda A. Stocker, Northside High School, Fort Smith, Ark.

Connect science with the real world through current events and science news. We'll look at how reading and writing skills can be applied to science.

SESSION 21

Tracking America's Ship for Ocean Exploration: The NOAA Ship *Okeanos Explorer* (Gen)*(Middle Level–High School/Informal)**Sierra H, Marriott*

Susan E. Haynes (*susan.haynes@noaa.gov*) and **Paula Keener** (*paula.keener-chavis@noaa.gov*), NOAA Office of Ocean Exploration and Research, Silver Spring, Md.

Explore educational features of the NOAA *Okeanos Explorer* website, including a digital atlas, a ship tracker map, and STEM-based career interviews.

SESSION 22 (two presentations)

(Middle Level–High School/Supv)

Sierra I, Marriott

This Is Your Brain on Inquiry (Gen)

Elizabeth M. McDonald, Prince William County Schools, Manassas, Va.

Learn about brain physiology and the design of effective science learning environments that engage and challenge each learner.

Using Multiple Intelligences to Explore Science Topics (Gen)

Megan Thaler (meganthaler@gmail.com), Robinson Secondary School, Reston, Va.

Using Gardner’s theory of multiple intelligences, help students explore content topics through their own unique strengths of music, movement, puzzles, or language.

SESSION 23 (two presentations)

(General)

113, Moscone Center

Physics Can Be Murder! A STEM-inspired Forensics and Physics Collaboration (Gen)

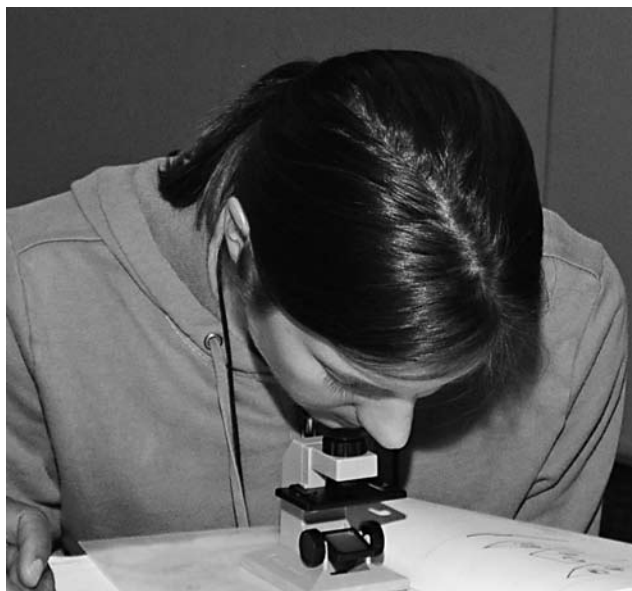
Zhanna Glazenburg, Croton Harmon High School, Croton on Hudson, N.Y.

This physics-forensic collaborative project helps students develop critical-thinking skills and learn how to follow the engineering design process.

Detective for a Day: The Real CSI (Gen)

Bruce Nash (nash@cshl.edu), Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

Students love crime stories and *CSI*. Engage them in forensic investigations that teach laboratory skills, evidence analysis, and critical thinking.



SESSION 24 (two presentations)

(General)

208/210, Moscone Center

Creating a 21st-Century Classroom: Integrating the Untold Stories of Women Scientists into the Multicultural Environment (Gen)

Christina N. Dragon (christina.dragon@gmail.com), Smith College, Northampton, Mass.

Let’s work toward a curriculum focused on honoring the many multicultural contributions made by women scientists from the past, present, and future.

Inquiry-based Science and Technology Enrichment Summer Program for Middle Level Female Students (Gen)

Hanna Kim, DePaul University, Chicago, Ill.

This study investigated the effects of an intensive one-week Inquiry-Based Science and Technology Enrichment Program (InSTEP) designed for middle school–aged female students.

SESSION 25



Nature Books: The Natural Way to Link Science, Math, and Literacy (Bio)

(Elementary)

224/226, Moscone Center

David M. Schwartz, Author, Oakland, Calif.

Here are some ways to use nature books to support both science and math standards and to develop literacy. I’ll share examples of student work.

SESSION 26



Using Open-Source Resources to Engage Students in the Biology Classroom (Bio)

(High School)

228/230, Moscone Center

Kimberly M. Spangenberg (kspangenberg@govhs.org), Virtual High School, Maynard, Mass.

Generate enthusiasm, improve comprehension, and add real-world relevance to your biology curriculum using podcasts, educational games, videos, simulations, and research.

SESSION 27

Podcasting in Your Classroom (Gen)

(General)

250, Moscone Center

Amol Patel (amol.patel@me.com), Heritage High School, Leesburg, Va.

Lara K. Smetana (smetana1@southernct.edu), Southern Connecticut State University, New Haven

Learn the basics of teacher-created, multimedia podcast notes and how they can transform your instruction.

3:30–4:30 PM Workshops**Teaching About Inquiry and Nature of Science in Grades K–8 (Gen)***(Preschool–Middle Level)**Continental 7, Hilton***Randy L. Bell** (randybell@virginia.edu), University of Virginia, Charlottesville**Kathy Cabe Trundle** (trundle.1@osu.edu), The Ohio State University, Columbus

Teach about inquiry and nature of science through these engaging, hands-on, student-centered lessons. Receive a variety of resources to facilitate science instruction.

Take the “Bored” Out of Whiteboard (Gen)*(General)**Continental 8, Hilton***Julie R. Shannan**, Girlstart, Austin, Tex.**Lisa Regalla** (lregalla@tpt.org), Twin Cities Public Television, St. Paul, Minn.

Say good-bye to boring PowerPoints! Bring science to life in your classroom using interactive whiteboard modules created by the PBS series *SciGirls* and *Girlstart*.

**NSTA Press Session: Uncovering Student Ideas with Everyday Science Mysteries (Gen)***(Elementary–Middle Level)**Continental 9, Hilton***Richard Konicek-Moran** (konmor@comcast.net), Retired Educator, Amherst, Mass.**Joyce B. Tugel** (jtugel@mmsa.org), Maine Mathematics and Science Alliance, Augusta

Learn how science stories can engage all students, elicit ideas encountered in the K–8 curriculum, and provide an entry into inquiry.

Notice and Wonder: An Exploration of Inquiry for Preschoolers (Gen)*(Preschool)**Golden Gate 3, Hilton***Sarah C. Soule**, California Academy of Sciences, San Francisco

How can we shape preschoolers' natural curiosity into inquiry-based science experiences? Examine the nature of inquiry and its application in the preschool classroom.

Life Cycles: The Basic Needs of Living Things (Bio)*(Elementary)**Golden Gate 4, Hilton***Molina Walters** (drmo@asu.edu) and **Bettina Nuenke** (babell2@asu.edu), Mary Lou Fulton Teachers College, Mesa, Ariz.

Introduce students to the wonder of animal, insect, and plant life cycles through these hands-on activities.

Keeping Things in Motion (Phys)*(Preschool–Middle Level)**Union Square 15/16, Hilton***Linda Lee Smith** (lsmith@paulsboro.k12.nj.us), Paulsboro (N.J.) Public Schools

Use NASA Space Science to spice up your classes, excite your students, and teach about Newton's laws of motion at the same time.

Time for 10! (Gen)*(Elementary–Middle Level)**Union Square 19/20, Hilton***Kendra J. O'Dea**, St. Mary's Catholic School, Spokane Valley, Wash.

Take home 10 activities that engage student learning and help foster teacher-student relationships.

Open-ended Questions Are Fine for Some Kids...but My Students Can't Do Them (Gen)*(Middle Level–College)**Golden Gate Salon A, Marriott***Chuck Downing** (dr.d-cc@cox.net), Great Oak High School, Temecula, Calif.

Take the abstract to the concrete. Find out why some kids are better at open-ended questions than others and strategies to help your students become better abstract thinkers.

Hydroponics: A Hands-On Building Project (Bio)*(High School)**Golden Gate Salon C1, Marriott***Joshua D. Dumas** (josh.dumas@austin.k12.mn.us), Austin High School, Austin, Minn.**Prisider: Drake Mehlan**, Roseville Middle School, Little Canada, Minn.

I'll share a step-by-step guide to building a hydroponics system for your classroom, including a unit outline to study Mendelian genetics in plants.

Science, Technology, and the Northern Ohio and Erie Canal (Gen)*(General)**Nob Hill A, Marriott***Francis S. Broadway**, The University of Akron, Ohio

I'll present inquiry-based and problem-solving science and design technology activities designed by teachers and proven by primary students at and about the Ohio and Erie Canalway.

Problem Based Learning and Technology Bring Molecular Bonding to Life (Chem)

(Middle Level–College) *Nob Hill D, Marriott*
Aruna Kailasa (*akailasa@yahoo.com*), Benjamin E. Mays High School, Atlanta, Ga.

Be a part of this novel Problem Based Learning case as we explore ways to invigorate students in becoming self-motivated learners of general chemistry.

Supporting Scientific Inquiry with Databases in Genetics (Bio)

(High School) *Pacific H, Marriott*
Andrew W. Shouse (*awshouse@u.washington.edu*) and **Katie Van Horne** (*katievh@uw.edu*), University of Washington, Seattle

Use existing scientific databases to engage students in original research that is relevant to their everyday and community life.

Building Understanding Through a Series of Connected Activities (Bio)

(Elementary–High School) *Pacific I, Marriott*
Michael P. Marlow (*mike.marlow@ucdenver.edu*) and **Robert L. Stowe** (*stowerl@sbcglobal.net*), University of Colorado, Denver

Chris W. Thornburg, Ranum Middle School, Denver, Colo.

Do a series of connected inquiry activities using flowers that demonstrates a method to move students from base knowledge to more complex understandings.

Using EARTH (Education and Research: Testing Hypotheses) Activities in the Classroom (Earth)

(Middle Level–High School/Informal) *Sierra B, Marriott*
Barbara J. Simon-Waters (*barbarasimonwaters@gmail.com*), East Carteret High School, Beaufort, N.C.

Katie Lodes (*klodes@stjosephacademy.org*), St. Joseph's Academy, St. Louis, Mo.

These classroom-tested marine science, biology, and Earth science activities were developed during the EARTH workshops of the Monterey Bay Aquarium Research Institute.

Rachel Carson's *Silent Spring*: A Book That Changed the World and the Classroom (Env)

(Middle Level–High School) *Sierra J, Marriott*
Dawn C. Staples-Knox (*dstaples@rsu20.org*), Searsport District High School, Searsport, Maine

Create a thought-provoking environmental unit using challenging, rigorous science literature and make it readable for all ninth graders.

NASA: Size and Scale of the Universe (Earth)

(Middle Level–High School) *Walnut, Marriott*
Pamela Whiffen (*pwpwr@aol.com*), NASA Educator Ambassador, Scottsdale, Ariz.

Bryan J. Mendez (*bmendez@ssl.berkeley.edu*) and **Kyle Fricke** (*kyle@ssl.berkeley.edu*), University of California, Berkeley

Experience hands-on, inquiry-based activities designed to enliven your classroom and stimulate your students' sense of curiosity. NASA materials include a CD, posters, and complete lessons.

COSEE Session: Linking Physical Science and the Ocean (Phys)

(Middle Level–High School/Informal) *Willow, Marriott*
Liesl Hotaling, Centers for Ocean Sciences Education Excellence, Highlands, N.J.

Gail A. Scowcroft (*gailscow@gso.uri.edu*), University of Rhode Island, Narragansett

Interact with scientists and educators and explore innovative ways to teach physical science principles using ocean-based examples and data.

Active Learning in the Science Classroom (Gen)

(Middle Level–College) *111, Moscone Center*

D.J. West, Schoolcraft College, Livonia, Mich.
Make learning active in the science classroom! Engage students as active partners in the learning process through intentional planning.

Textmasters: Shaking Up Textbook Reading Through Integration Across the Curriculum (Gen)

(General) *112, Moscone Center*
Lori G. Wilfong (*lgkrug@kent.edu*) and **Claudia Khourey-Bowers** (*cmkhoure@kent.edu*), Kent State University–Stark, North Canton, Ohio

This reading strategy promotes engagement with the text through cooperative learning. Various roles are used to promote careful reading for both comprehension and integrated content.

Bring Literacy and Science Together: "B.L.A.S.T."© for Success at School and Home (Gen)

(Elementary) *212, Moscone Center*
Renee G. O'Leary, Caravel Academy, Bear, Del.

Discover simple, multisensory, hands-on elementary (grades 2–5) explorations using fairy tales as catalysts with take-home and language arts follow-up. Receive sample plans and materials.

**Basic Weather***(General)*

220/222, Moscone Center

Michael Saadati (*mkee1985@yahoo.com*), U.S. Navy, Point Mugu, Calif.**Dana J. Wright**, Newark (Calif.) Unified School District
President: Dana J. Wright

Learn about the water cycle, fronts, and severe weather, and try some hands-on activities that meet state standards.

(Env)**Now Even Middle School Students Can Learn Spectroscopy!****(Phys)***(Middle Level–High School)*

232/234, Moscone Center

Pamella W. Ferris, Riverside Middle School, Evans, Ga.President: Christopher Ruel McDaniel (*christopher.mcdaniel@ccboe.net*), Riverside Middle School, Evans, Ga.

Pique student interest by using cutting-edge technology and teacher-developed lesson plans to investigate emission spectra. Free handouts and materials for the first 99 participants!

3:30–4:30 PM Exhibitor Workshops**Roller Coaster Physics: Putting Physics Principles in Action****(Phys)***(Grades 7–12)*

236/238, Moscone Center

Sponsor: Fisher Science Education

Jessica Norica, 3B Scientific, Pittsburgh, Pa.

Keep your hands and legs inside the car at all times while we explore some of the physical principles behind the modern roller coaster. This workshop will demystify difficult-to-understand concepts, including eddy currents, induction of a magnetic field, and the Lorentz force. The basic mechanics of roller coasters, such as gravity propulsion and friction braking, will also be presented. An interactive question-and-answer session will take place following the presentation to allow participants to better familiarize themselves with the topics presented. 3B Scientific equipment will be used to help demonstrate these concepts, and experiment guides will be available.

Engaging Students in Science Through Interactive Teaching Tools**(Gen)***(Grades K–12)*

274/276, Moscone Center

Sponsor: DYMO/Mimio

Shelia Woerner, DYMO/Mimio, Cambridge, Mass.

Learn how to incorporate document cameras, interactive whiteboard lessons, student-response systems, and more into your science teaching methods, and get hands-on practice with each device in the MimioClassroom™ suite of products. We'll first explore how each technology product functions individually as a dynamic, easy-to-use, interactive technology tool. We'll then learn how to unleash the potential of these classroom tools by combining the technologies to work together as a seamlessly integrated suite of interactive teaching tools.

The Next Generation of Middle School Programs: Project-Based Inquiry Science (PBIS)**(Gen)***(Grades 6–8)*

307, Moscone Center

Sponsor: It's About Time

Mary Starr, University of Michigan, Ann Arbor

PBIS provides multiple opportunities for formative and summative assessment. Final projects are just one way that you can know what students have learned throughout the unit. Ongoing formative assessment is also critical. Learn how assessment is critical to PBIS and investigate the use of questions to assess student learning, to provide opportunities to challenge students to think more deeply, and to give students a chance to show what they know in unique ways.

3:30–5:00 PM Workshop**NESTA Session: National Earth Science Teachers Association Rock and Mineral Raffle****(Earth)***(General)*

Meeting Room Hall D, Moscone Center

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

Here's a chance to win display-quality specimens of rocks, minerals, fossils, and other Earth science–related materials while learning about Earth materials from areas other than your own.

3:30–5:30 PM NSTA ESP Symposium III

NSTA Exemplary Science Programs (ESP)...Meeting the Reform Features from the National Science Education Standards (Gen)

(General) Continental Salon 2, Hilton

ESP: How to Make Students Full Partners in Science Learning

Organized by Robert E. Yager, 1982–1983 NSTA President and Editor of the NSTA ESP Program

Coordinators: Robert E. Yager (robert-yager@uiowa.edu), University of Iowa, Iowa City, and Diane L. Schmidt (dschmidt@fgcu.edu), Florida Gulf Coast University, Fort Myers

This session will include brief descriptions of programs that exemplify how the four NSES goals have been met. Discussion will center on how NSES “More Emphasis” suggestions have guided instruction. Participants in this symposium will include the following authors from specific monographs in the series.

Promoting Inquiry with Preservice Elementary Teachers (from ESP #6)

Thomas R. Lord (trlord@iup.edu), Indiana University of Pennsylvania: Indiana

Securing a “Voice” (from ESP #7)

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

Your Students as Scientists (from ESP #7)

Kanesa Duncan Seraphin (kanesa@hawaii.edu), Curriculum Research & Development Group (CRDG), University of Hawaii, Honolulu

Erin Baumgartner (baumgare@wou.edu), Western Oregon University, Monmouth

Modeling: Naturally Selecting an Effective Teaching Method (from ESP #2)

Karen Mesmer (ctx06823@centurytel.net), Jack Young Middle School, Baraboo, Wis.

Shouldn't We Be Doing Science? (from ESP #6)

Tina Harris (taharris79@yahoo.com), Anderson (Ind.) Community School Corp.

Curious Scientific Investigators Solve Museum Mysteries (from ESP #5)

Rick Crosslin (rickc@childrensmuseum.org), Metropolitan School District of Wayne Township, Indianapolis, Ind.

Using Socio-scientific Issues as Context for Teaching Content (from ESP #7)

Scott Applebaum (applebaum@msn.com), Palm Harbor University High School, Palm Harbor, Fla.

Stop Talking, Start Listening: Turning Didactic Science Teaching on Its Head (from ESP #3)

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

3:30–5:30 PM Presentation

SESSION 1

Building Scientific Minds with the NSTA Alliance of Affiliates (Gen)

(General) Yosemite B, Hilton

Pat Shane (pshane@email.unc.edu), NSTA Retiring President, and The University of North Carolina at Chapel Hill

Jon Pedersen (jep@unl.edu), University of Nebraska, Lincoln

Margaret Glass (mglass@astc.org), President, Association of Science-Technology Centers, Washington, D.C.

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

Troy Sadler (tsadler@coe.ufl.edu), University of Florida, Gainesville

Rajeev Swami (chem276@yahoo.com), NMLSTA President, and Central State University, Wilberforce, Ohio

Brenda Wojnowski (bwojnowski@gmail.com), University of North Texas, Dallas

Connie P. Russell (crussell@angelo.edu), SCST President, and Angelo State University, San Angelo, Tex.

Join us as we explore the opportunities and resources the nine affiliate member organizations of NSTA can offer as you are building scientific minds in your classroom.

4:00–5:30 PM Exhibitor Workshops**EcoTeach and Veragua Rain Forest: Biodiversity of Costa Rica (Env)***(Grades 5–College)**110, Moscone Center*

Sponsor: EcoTeach

Greg Enright (greg@ecoteach.com) and **Rocio Lopez**, EcoTeach, Poulsbo, Wash.

Looking for exciting hands-on travel experiences for your science students? Explore the Veragua Rain Forest in Costa Rica with EcoTeach. Work side by side with an on-site biologist collecting and identifying insects and butterflies, and exploring the world's largest nocturnal-ambience frog habitat! Learn how your students can experience science up close through student travel. Receive a copy of the EcoTeach DVD.

Neuromyth Busters (Bio)*(Grades 5–College)**124, Moscone Center*

Sponsor: Society for Neuroscience

Janet Dubinsky, University of Minnesota, Minneapolis

Do people only use 10% of their brains? Can humans get smarter by hearing music *in utero*? Get the truth about brain development and functionality through a series of hands-on activities that can be implemented in the classroom.

Teaching About Hydrogen Fuel Cells (Chem)*(Grades 9–12)**125, Moscone Center*

Sponsor: LAB-AIDS, Inc.

Chris Keller, Lawrence Hall of Science, University of California, Berkeley

Explore SEPUP's new module, "Introduction to Alternative Energy: Hydrogen Fuel Cells," which teaches chemistry standards such as conservation of energy, stoichiometry, and redox reactions around the issue of using hydrogen fuel cells for transportation. Take home a SEPUP activity on fuel cells appropriate for high school chemistry or environmental science.

Composting and Inquiry: Hundreds of Hands-On Possibilities (Bio)*(Grades 3–7)**132, Moscone Center*

Sponsor: Biome in a Box (Makers of the WormWatcher)

Regina Ridgway (regina@biomeinabox.com), Biome in a Box, Williamsburg, Va.

Learn about various composting (indoor and outdoor) options, basic guidelines, and the soil food web. Discover how to teach the details of composting and hook students into science. Watch a melon disappear in days in your classroom

and your students will be green for life. Find out about this easy classroom pet and low-maintenance product line that teaches you about composting details as you go.

Introduction to Sangari Active Science (Gen)*(Grades K–5)**133, Moscone Center*

Sponsor: Sangari Active Science

John E. Penick (john.penick@sangariglobaled.com), 2003–2004 NSTA President, and Sangari Active Science, Miami, Fla.

Come experience an exciting, experiential, inquiry-centered elementary science program with a global focus. Participate in grade-level innovative activities, see a 21st-century program, and leave with classroom-ready materials. Designed by leading scientists and educators, Sangari Active Science will remind you of all the reasons you love to teach science.

FREE Teaching Resources and Interactive Models from the Howard Hughes Medical Institute on Immunology and HIV (Bio)*(Grades 9–12)**134, Moscone Center*

Sponsor: Howard Hughes Medical Institute

Anthony Bertino (abertino@nycap.rr.com), Retired Educator, Scotia, N.Y.**Patricia Nolan Bertino** (nolanp@nycap.rr.com), Scotia, N.Y.

Get students actively involved in learning about antibodies, the immune system, and cell communication. Our materials provide lots of fun and greater student comprehension and retention. View inexpensive models demonstrating the HIV life cycle and receive DVDs, a PowerPoint presentation, animations, model and demonstration directions, and a virtual lab CD-ROM.

Teaching with the New SPECTRONIC 200 (Chem)*(Grades 7–College)**256, Moscone Center*

Sponsor: Thermo Fisher Scientific

Gordon Bain, Thermo Fisher Scientific, Madison, Wis. SPECTRONIC 200 offers everything you liked in the old SPEC 20 plus scanning, a color screen, a more modern interface, legacy instrument emulation, support for test tubes and cuvettes, and a removable, washable sample compartment. This workshop offers hands-on experience with SPECTRONIC 200 and ideas for student experiments.

Put Me in Coach! The Physics of Baseball (Phys)

(Grades 9–College) 270/272, Moscone Center

Sponsor: Cenco Physics

Paul Robinson (pablo@laserpablo.com), San Mateo High School, San Mateo, Calif.

Make your physics class even more of a home run by incorporating both basic and advanced physics principles tied to America's pastime—baseball! Giants jerseys optional.

Build a Globe and Add Another Dimension to Earth Science Learning (Earth)

(Grades 5–College) 300, Moscone Center

Sponsor: Tempo Gloss Globe

Joe Roubal and **Jeff Liedtke**, Tempo Gloss Globe, Visalia, Colo.

Learn how to build a globe with real satellite and Earth data. This interactive lesson emphasizes spatial and visual learning techniques that will unlock your students' potential and facilitate intuitive and deeper understanding of mapping and Earth processes in a fun and engaging environment.

Human and Animal Body Systems and Organs: Free Teaching Resources for K–6 and Beyond (Bio)

(Grades K–12) 303, Moscone Center

Sponsor: Animalearn

Laura Ducceschi, Animalearn, Jenkintown, Pa.

Lynette A. Hart, University of California, Davis

William A. Storm, Davis (Calif.) Joint Unified School District

Discover innovative resources rated by teachers as outstanding for teaching about human body systems and health as well as animal systems and organs, all available FREE! See sample webquests offering engaging activities prepared by master teachers.

Geotagging and Mapping Your Field Data (Earth)

(Grade 10) 304, Moscone Center

Sponsor: Esri

Joseph Kerski (jkerski@esri.com) and **Tom Baker** (tbaker@esri.com), Esri, Redlands, Calif.

Geotagging is the process of assigning geographic information to digital media for mapping and visualization purposes. Learn how to geotag your digital photos, movies, and other media with a variety of free tools, such as Geographic Information Systems (GIS) ArcGIS Explorer Online, ArcGIS Explorer Desktop, and others. Enhance your field trips in multimedia with geotagging and uncover spatial patterns in your field data.

Untamed Science! How to Make Your Own Science Videos from Scratch (Gen)

(Grades K–12)

305, Moscone Center

Sponsor: Pearson

Untamed Science

Learn how to implement video in your classroom and how you and your students can create your own videos on a shoestring budget. Untamed Science recently teamed up with Pearson to create personalized videos for all of their new K–12 science programs. Passionate about education, this team of young scientists develops exciting videos that address the big questions of science. Handouts.

Sparkling More Interest with Chemistry: A Part 2 Experience (Chem)

(Grades 8–12)

308, Moscone Center

Sponsor: Houghton Mifflin Harcourt

Jerry Sarquis and **Mickey Sarquis**, Miami University, Middletown, Ohio

Engage in chemistry activities, demos, challenges, and tips to help spark your students' interest and facilitate their understanding of chemistry. This Part 2 Experience uses inexpensive, readily available materials and is presented by *Modern Chemistry* authors Mickey and Jerry Sarquis, award-winning educators and recognized leaders in chemistry education initiatives.

Earthquake Prediction, Dinosaur Death, and Other Discoveries from the Deep Sea! (Earth)

(Grades 7–College)

309, Moscone Center

Sponsor: Deep Earth Academy, Consortium for Ocean Leadership

Jennifer Collins (jen@paleobio.org), Deep Earth Academy, Washington, D.C.

Scientists and educators will share inquiry lessons based on scientific data obtained by the *JOIDES Resolution* research vessel that highlight key Earth science topics. Learn how your students can follow the expeditions, how you can get onboard, and how you can sign up to host a live video event with the ship.

4:30–5:00 PM Presentation

SESSION 1

COSEE Session: Practical Applications of the Ocean Literacy Principles Scope and Sequence (Gen)

(General) Willow, Marriott

Craig Strang (*cstrang@berkeley.edu*) and **Catherine Halversen** (*chalver@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

See how science educators and scientists can effectively work together in a collaborative and iterative process to transform science concepts into a compelling and concept-based curriculum using Ocean Literacy Scope and Sequence as a model.

5:00–5:30 PM Presentation

SESSION 1

Story Secrets: A Showcase of Women Elementary Science Teachers' Journey to Science Leadership (Gen)

(Elementary) Golden Gate 2, Hilton

Cathy J. Kindem, Cedar Park STEM Elementary School, Apple Valley, Minn.

Hear the stories of elementary science teacher colleagues who have negotiated the journey to science leadership. Learn their words of wisdom to enhance your career!



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

NSTA Life Members' Buffet Breakfast

Sunday, March 13

7:00–9:00 AM

Hilton San Francisco Union Square, Powell

Tickets are required (M-13; \$55)

Participation is limited to NSTA life members only.



5:00–6:00 PM Presentations

SESSION 1

A Green Clock Reaction: Assessing Eighth-Grade Students' Understanding of Variables (Chem)

(Middle Level) Golden Gate 5, Hilton

Deanna Murphy, Beach Park Middle School, Beach Park, Ill.

Vito M. Dipinto (*vdipinto@nl.edu*), National-Louis University, Wheeling, Ill.

This clock reaction uses vitamin C (ascorbic acid) and iodine to introduce students to the idea of reaction time and green chemistry.

SESSION 2 (two presentations)

(Middle Level–College) Union Square 17/18, Hilton

Gear-Up Summer Science Camps: Paving the Way for Student Success in Science (Gen)

Randy Parker (*doctorp@latech.edu*) and **Julie A. Holmes** (*jholmes@latech.edu*), Louisiana Tech University, Ruston

Activities of the GEAR-UP program meet the goals of increasing student interest in science and preparing students for careers in science.

Science Teaching Labs: A School-University Partnership (Gen)

Linda Padwa (*linda.padwa@stonybrook.edu*) and **Caren Gough** (*caren.gough@stonybrook.edu*), Stony Brook University, Stony Brook, N.Y.

In this school-university partnership, middle/high school students conduct lab work in a university setting. We'll look at professional development opportunities associated with the program.

SESSION 3

CESI Session: Designing Effective Curriculum Guides to Improve School District Science Achievement (Gen)

(Elementary/Supervision) Union Square 21, Hilton

Daniel E. Alcazar-Roman (*dalcazar@houstonisd.org*), Houston (Tex.) Independent School District

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

SESSION 4

Happy CSI = Creative Science Inquiry! (Gen)

(Elementary–Middle Level) Union Square 22, Hilton

Martin G. Horejsi, The University of Montana, Missoula

All the fun and cool tools but no crimes here! Discover 10 exciting CSI activities that maintain all the magic but none of the murder.

SESSION 5 (two presentations)

(General) Union Square 25, Hilton

Student, Peer, and Self Evaluations: How Useful Are They? (Gen)

Thomas R. Lord (*trlord@iup.edu*), Indiana University of Pennsylvania, Indiana

Teacher evaluations are commonly used in schools and colleges despite the fact that they have been found to be poor predictors of good teaching. There is a better way!

Student-centered Textbook Evaluation (Gen)

Rachel L. Rasmussen and **Geryl A. Schwab**, Rapid City Central High School, Rapid City, S.Dak.

Get your students involved in data-driven textbook evaluation when you are piloting textbook materials for future book adoption. Handouts and helpful hints provided.

SESSION 6

NOAA Follow-Up Session: NOAA Climate Change Here and Now: Impacts on the West (Drought and Severe Storms) (Earth)

(General) Golden Gate Salon C2, Marriott

Judith A. Koepsell, NOAA National Weather Service, Silver Spring, Md.

Discover how mathematics, science, and technology involved in predicting and monitoring drought and storms (especially in the western United States) can be used effectively in your classroom. Handouts provided.

SESSION 7

Go Green: An Initiative Taken by High School Students Looking for Alternative Energy Sources (Env)

(General) Nob Hill C, Marriott

Sumita Bhattacharyya, Nicholls State University, Thibodaux, La.

Join us as high school students share their ideas on designing energy-efficient items for use in daily life. Working in groups, they focused on alternative solutions to the energy crisis.

SESSION 8

NSF Follow-Up Session: The Western Antarctic Ice Sheet Divide: A U.S. Deep Ice Coring Project (Bio)*(Informal Education)**Pacific B, Marriott*

Christine Forman, Montana State University, Bozeman
Learn how polar ice cores are powerful tools for reconstructing Earth's climate. The goal of WAIS Divide is to collect a deep ice core to develop unique ice and biologic records focused on understanding interactions among global Earth systems.

SESSION 9

NASA: Exploring the Mysteries in a Supernova Explosion (Earth)*(Middle Level–College)**Pacific C, Marriott*

Michiel N. Ford (*mford@holtonks.net*), Kickapoo Nation School, Powhattan, Kans.

See what happens to supernovae as they become neutron stars or black holes. Leave with NASA materials.

SESSION 10

Digital Earth Science Technology with Free Software: Overlapping Google Earth, Glogster, and Wiki (Env)*(Informal Education)**Pacific F, Marriott*

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

Reframe your curricula using digital technology to increase literacy and knowledge in climate and geospatial science in STEM disciplines.

SESSION 11

Online EPA Tools for Climate Change and Air Quality Education (Env)*(Middle Level–High School)**Pacific J, Marriott*

Karen Scott, U.S. Environmental Protection Agency, Washington, D.C.

EPA's online resources will have your students in the control seat as they discover the effects of air pollution and the impacts of climate change on wildlife and their habitats. Here are seven online tools that can easily be incorporated into curricula.

SESSION 12

Rethinking a High School Science Sequence: Development of an Introductory Ecology/Environmental Science Course (Env)*(High School)**Sierra A, Marriott*

Kathy McCarthy (*mccarthyk@arps.org*), **Nicholas Shaw** (*shawn@arps.org*), and **Mary McCarthy** (*mccarthm@arps.org*), Amherst (Mass.) Regional School District

Hear how one school incorporates biological, chemical, and physical science content in a mathematically rich, inquiry-driven foundational course by using data collected on the local landscape.

SESSION 13 (two presentations)

*(High School)**Sierra C, Marriott*

Presenter: Steve Wood, Adlai E. Stevenson High School, Lincolnshire, Ill.

Inquiry into Argumentation in High School Chemistry (Chem)

Sarah E. Eales (*sarah_eales@gwinnett.k12.ga.us*), Peachtree Ridge High School, Suwanee, Ga.

Learn how to use argumentation throughout thematic high school chemistry units to improve students' content understanding and literacy skills.

Mastery Learning Through Formative Assessments (Chem)

David Schoenfisch and **Thomas Kelly**, Adlai E. Stevenson High School, Lincolnshire, Ill.

A team of seven chemistry teachers collaboratively determined learning targets and then used formative assessments to ensure mastery learning.

SESSION 14

Science Fair Projects: The Four Types of Science Investigations for Authentic Science Research (Gen)*(Middle Level–High School)**Sierra E, Marriott*

Marsha S. Wallace (*marswall@hotmail.com*), Salk School of Science, New York, N.Y.

Learn about the four types of science projects that offer the opportunity for authentic science research for students in and out of the classroom.

SESSION 15 (two presentations)

(High School)

Sierra I, Marriott

Presider: Michelle Brown, Seabury Hall, Makawao, Hawaii

Teaching from the Beach (Gen)

Kathleen A. Ireland (*kireland@seaburyhall.org*), **Evelyn B. Lakanienta** (*ebonolac@gmail.com*), and **Sherri Reed** (*sreed@seaburyhall.org*), Seabury Hall, Makawao, Hawaii

We'll look at the challenges and rewards of teaching high school science as a hybrid online/face-to-face class.

Enhancing Engineering and Technology Secondary Education Through a High School and University Partnership (Gen)

Ulpiano Frederick Pontillas (*upontillas@boston.k12.ma.us*), John D. O'Bryant School of Mathematics & Science, Boston, Mass.

High school and university educators describe how access to university resources enhanced engineering and technology education in an urban high school.

SESSION 16 (two presentations)

(General)

113, Moscone Center

Differentiated Assessment in the Science Classroom (Gen)

Kevin J.B. Anderson (*mrkja@yahoo.com*), University of Wisconsin, Madison

Explore a variety of different assessment methods, practice using them, and apply them to your curriculum and instruction.

Assessing Inquiry in the Science Classroom (Gen)

Jesse L. Wilcox (*jwilcox.23@gmail.com*), Valley Southwoods Freshman High School, West Des Moines, Iowa

Jerrid W. Kruse (*jerridkruse@gmail.com*), Drake University, Des Moines, Iowa

How can we assess inquiry? We'll share examples as well as teaching practices during inquiry activities. Handouts provided.

SESSION 17 (two presentations)

(General)

200, Moscone Center

The Inner Space Center: Command Center for Ocean Science Exploration (Gen)

Maryann C. Scholl, University of Rhode Island, Narragansett

Watch the excitement in your students' eyes as you show them how to view and communicate with researchers during a live oceanographic science expedition.

Eco-Pals for the Planet (Gen)

Shauneen Giudice (*sgjudice@comcast.net*), Delmar Middle School, Delmar, Del.

Our middle school students exchanged bio-boxes and video letters, shoreline stories and ecopostcards, micromysteries, and kid-maps with students from India, China, Japan, and Mexico.

SESSION 18



Assessing Inquiry Skills Using Science Notebooks (Gen)

(Elementary–Middle Level/Supv) 228/230, Moscone Center

Janet C. MacNeil (*janet_macneil@brookline.k12.ma.us*), Brookline (Mass.) Public Schools

Learn how science notebooks can be used to assess inquiry skills. Take home an Inquiry Assessment Toolkit (including inquiry skill checklists and resource lists).

SESSION 19

Using a Technology-enhanced Focus for Teaching and Learning Science in a Native Internet High School (Gen)

(General)

250, Moscone Center

Anthony W. Bartley (*abartley@lakeheadu.ca*), Lakehead University, Thunder Bay, Ont., Canada

Eli K.A. Pivnick (*elipivnick@knet.ca*), Keewaytinook Internet High School, Sachigo Lake, Ont., Canada

Our school-university partnership has focused on the use of a technology-rich environment for science in a native internet high school.

SESSION 20

Science with Seymour Simon and Wendy Saul: Developing the Language of Science (Gen)

(General)

262, Moscone Center

J. Carrie Launius (*jlaunius@hazelwoodschoos.org*), Hazelwood School District, Florissant, Mo.

Diana Wiig (*dwiig@uwyo.edu*), University of Wyoming, Laramie

E. Wendy Saul, University of Missouri–St. Louis

Seymour Simon (*simon@seymoursimon.com*), Great Neck, N.Y.

Join Seymour Simon, Wendy Saul, and science educators as they probe the realm of science literacy through trade books using research-based strategies.

5:00–6:00 PM Workshops**Bringing Neuroscience to the Classroom (Bio)***(Informal Education)* Continental 1, Hilton**Timothy Marzullo** (tim@backyardbrains.com), Backyard Brains, Inc., West Bloomfield, Mich.Presider: Gregory Gage (gagegreg@backyardbrains.com), Backyard Brains, Inc., Ann Arbor, Mich.

Typically, recording and experimenting with the nervous system is very difficult and expensive. I will show you how to use insects to bring neuroscience into the classroom inexpensively.

Students as Agents of Change: Investigating Environmental Issues (Gen)*(Elementary–High School)* Continental 7, Hilton**Joyce B. Tugel** (jtugel@mmsa.org), Maine Mathematics and Science Alliance, Augusta**Stephen E. Brown** (sbrown@lisbonschool.com) and **Marty Mlyniec** (mmlyniec@lisbonschool.com), Lisbon Central School, Lisbon, Conn.

Learn how teachers and students use the “KIDS as Planners” service-learning model to identify and research green school issues, explore solutions, and implement change.

Animals in the Classroom (Bio)*(Elementary–Middle Level)* Continental 8, Hilton**Suzanne Flynn** (suzannemflynn@earthlink.net), Cambridge College, Cambridge, Mass.**Stephanie Selznick** (sselznick@boston.k12.ma.us), Curley K–8 School, Jamaica Plain, Mass.

Learn how to use animals in the classroom to link to ELA notebooks, math (graphing and analyzing data), geography (mapping), and computer technology. Door prizes!

Focused Learning at Museums and Zoos (Gen)*(Elementary)* Golden Gate 3, Hilton**Anne Marie Fayen** (afayen@fieldmusuem.org), The Field Museum, Chicago, Ill.**Darrell Jones**, Chicago Children’s Museum, Chicago, Ill.

Presider: Anne Marie Fayen

Work with museum educators to enhance your classroom curriculum with community resources. We’ll share strategies for planning and implementing meaningful field trips.

Teaching Science as an Integrated Curriculum**(Gen)***(Elementary–Middle Level)* Golden Gate 4, Hilton**Sanghee Choi** (schoi6@memphis.edu), The University of Memphis, Tenn.

These fun hands-on inquiry activities introduce young learners to the integrated curriculum, which includes math and science concepts of measurement.

The Energy Circus: Exploring Gravity in Grades K–1 (Phys)*(Preschool–Elementary)* Golden Gate 6, Hilton**Travis Sloane** (tsloane@schools.nyc.gov), P.S. 971, New York, N.Y.**Donna M. Johnson**, P.S. 21 Crispus Attucks School, Brooklyn, N.Y.**Anja Hernandez** (anjajernandez@ccny.cuny.edu), City College of New York, N.Y.

Learn how to use model slides, swings, seesaws, and carousels to develop young children’s ideas about gravity, balance, and measurement.

Science Discourse Through Inquiry Conferences**(Chem)***(Elementary)* Golden Gate 7, Hilton**Barbara A. Schwartz**, Kemp Mill Elementary School, Silver Spring, Md.**Leila A. Campbell** (leila_a_campbell@mcpsmd.org), Piney Branch Elementary School, Takoma Park, Md.

Students practice science discourse as they share their inquiry investigations with students from other elementary schools.

Learning Sound by Building Musical Instruments**(Phys)***(Elementary–Middle Level)* Union Square 15/16, Hilton**Modesto Tamez**, Exploratorium, San Francisco, Calif.

Learn the basics of sound by building musical instruments using inexpensive materials.

The Science of Energy: Exploring Forms of Energy and Energy Transformations (Gen)*(Elementary–High School)* Union Square 19/20, Hilton**Don Pruett** (info@need.org), The NEED Project, Manassas, Va.

Confidently teach important science concepts with center-based, hands-on activities that investigate forms of energy—motion; sound; and thermal, radiant, electrical, and chemical energy—and the energy transformations between them.

The Physics of Supernovae (Phys)

(High School–College) Union Square 23/24, Hilton

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

Donna L. Young (*donna.young@tufts.edu*), Chandra E/PO Office, Cambridge, Mass.

Doug Lombardi (*lombard37@unlv.nevada.edu*), University of Nevada, Las Vegas

Use analysis software, graphs, and basic physics equations to determine if an object is a white dwarf or a neutron star, and to determine the age of an SNR (supernova remnant).

Stylin' in Science: How to Involve All Learning Styles in Higher-Level Thinking Processes (Gen)

(Middle Level–College) Golden Gate Salon A, Marriott

Chuck Downing (*dr.d-cc@cox.net*), Great Oak High School, Temecula, Calif.

Come experience “Stylin’ in Science.” Participate in a typical lesson, take home reproducible materials, and create a lesson for your own classroom.

The Iceman Cometh! (Bio)

(Informal Education) Golden Gate Salon C1, Marriott

Jason Williams (*williams@cshl.edu*), Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

Students use science and critical thinking to unravel a crime committed in ancient times.

Creating Effective Field Trip Experiences Through Classroom Planning (Gen)

(General) Nob Hill A, Marriott

Michaela M. Labriole (*mlabriole@nysci.org*) and **Karen Saur** (*ksaur@nysci.org*), New York Hall of Science, Queens
Learn strategies for getting the most out of a field trip and techniques for integrating inquiry-based hands-on learning techniques for classroom use.

Chemistry and Literacy (Chem)

(High School) Nob Hill D, Marriott

Mary Shane, Advanced Technologies Academy, Las Vegas, Nev.

We’ll look at some ideas for promoting literacy in the chemistry classroom.

Inquiry-based Science Professional Development (Bio)

(Middle Level–High School) Pacific H, Marriott

Robert F. Curtis (*robertfcurtis@gmail.com*), Alameda County Office of Education, Hayward, Calif.

Develop inquiry-based science lessons that incorporate EL strategies and use the national inquiry standards. This approach is based on a NASA professional development program and the Exploratorium’s Fundamentals of Inquiry.

Engaging Students in Understanding Earth System Processes (Earth)

(General) Sierra B, Marriott

Gary Randolph (*randolph@globe.gov*), The GLOBE Program, Boulder, Colo.

Increase student understanding of Earth system processes using the GLOBE Earth system poster, NASA satellite imagery, and NOAA’s Science On a Sphere.

Mapping Inquiry in Biology and Chemistry (Gen)

(General) Sierra J, Marriott

Gamal D. Sherif (*gsherif@progressed.org*), **Rosalind E. Echols** (*rechols@scienceleadership.org*), **Tim Best** (*tbest@scienceleadership.org*), and **Stephanie L. Dunda** (*sdunda@scienceleadership.org*), Science Leadership Academy, Philadelphia, Pa.

How can we foster inquiry that is balanced with content? Review science labs/activities for a unique two-year approach to biology and chemistry.

Why Study Clouds? (Earth)

(General) Walnut, Marriott

Deanna Tebockhorst (*deanna@atmos.colostate.edu*), Colorado State University, Fort Collins

Susan W. Moore (*susan.w.moore@nasa.gov*), Science System and Applications, Inc./NASA Langley Research Center, Hampton, Va.

Todd Ellis (*ellistd@oneonta.edu*), SUNY College at Oneonta, N.Y.

Join NASA scientists and educators for activities demonstrating the importance of clouds to weather and climate while integrating math, science, and literature. Charts, CDs, and more!

Forensic Science in YOUR Classroom! (Gen)

(Middle Level–High School) 111, Moscone Center

Karalyn Ramon (*kramon@loyolahs.edu*), Loyola High School of Los Angeles, Calif.

Come get some hands-on experience solving realistic crime scene scenarios using actual forensic techniques.

**The Ups and Downs of Convection (Earth)***(General) 220/222, Moscone Center***Eric P. Muller** (*emuller@exploratorium.edu*), Exploratorium, San Francisco, Calif.

Explore the nature of convection with several cool (and warm) hands-on activities from the Exploratorium Teacher Institute.

**Science Literacy: Using Examples and Nonexamples (Gen)***(Elementary–High School) 224/226, Moscone Center***Wayne Snyder** (*wsnyder@caltech.edu*), Claremont Graduate University, Claremont, Calif.

Presenter: Jackie Hanisee, Mementau Elementary School, Lafayette, La.

Combining inquiry with writing about both examples and nonexamples increases students' understanding and skills in both science and writing. We'll do several examples to illustrate.

5:00–6:30 PM Meeting**NESTA Annual Membership Meeting***Meeting Room Hall D, Moscone Center*

This is your chance to find out about the National Earth Science Teachers Association's achievements and plans, share your ideas, and get involved in NESTA. Join us! Visit www.nestanet.org for more information.

5:30–6:00 PM Presentation**SESSION 1****Using Geologic Formations Near Your School to Interpret the Stratigraphic Column (Earth)***(Middle Level–High School) Sierra H, Marriott***Ruth Lehmann Hutson** (*rhutson@usd384.org*), Blue Valley High School, Randolph, Kans.

Learn how you can use field work to enhance your students' learning. Our students collected specimens, developed models, and compared their findings with GIS data.

7:00–9:30 PM President's Annual Banquet**Investing in America's Future: An Astronaut's Perspective (M-12) (Gen)***(Tickets Required: \$85)**Continental 4/5, Hilton***Bernard A. Harris, Jr.** (*info@the-harrisfoundation.org*), President, The Harris Foundation, Houston, Tex.

The youth of today encounter numerous challenges as they travel through our educational system. Across the country, citizens, leaders, and educators are expressing their apprehension about the future

of technological innovation and the state of math and science education. Whether or not a child plans to go into a math- or science-related field as a career, it is critical that he or she is prepared to succeed in a world of increasing technological complexity. In order to keep our country on the forefront of innovation, we have to raise our expectation of students, improve their performance, and encourage students to pursue these subjects at higher levels throughout high school and college. We must inspire them to reach beyond their perceived limitations and pursue careers that allow them to explore, discover, and change the world.

A NASA astronaut, physician, and businessman, Dr. Bernard A. Harris, Jr., founded The Harris Foundation in 1998 to develop math and science education and crime prevention programs for America's youth.

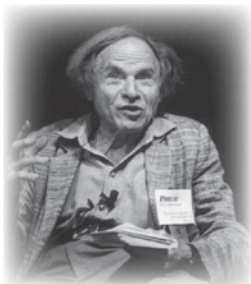
He holds several faculty appointments, including associate professor in Internal Medicine at The University of Texas and assistant professor at Baylor College of Medicine. Harris is also CEO of Vesalius Ventures, a venture capital firm.

After receiving his doctorate of medicine from Texas Tech University, he became an aerospace flight surgeon. In 1990, he was selected as a NASA astronaut and flew his first mission in 1993. A payload commander of STS-63, the first flight of the Russian-American space program, Dr. Harris achieved a childhood dream by completing a walk in space, the first African-American to do so. At NASA, he conducted research in musculoskeletal physiology and disuse osteoporosis and clinical investigations on space adaptation, which led to development of in-flight medical devices extending astronaut stays in space. Dr. Harris retired from NASA in 1996 after logging more than 438 hours and 7.2 million miles in space.

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

A Video Showcase of Legendary Icons, Inspiring Teachers, Memorable Performances, and Stimulating, Engaging Courses: Part 3

6:00 PM–12 Midnight • Yosemite C, Hilton



Mitchell E. Batoff, 2004–2005 NJSTA President, Nutley, N.J.

Gordon D. Clark, Retired Science Department Chair, Manalapan, N.J.

This is a continuation of the programs Thursday and Friday evenings. The screenings will be interspersed with commentary, discussion, and some live demonstrations. There will be humor, wonder and perplexity mixed in with a lot of information on a wide range of topics. Pick up ideas and content that will broaden your knowledge and that you can use in your own teaching.

The audience will help select from this extensive menu of course excerpts:

Bonnie Bassler of Princeton University, *Cell-to-Cell Communication in Bacteria*;

John Renton of West Virginia University, *Damage from Earthquakes*; **Harold E.**

Edgerton of Massachusetts Institute of Technology, *Stopping Time*; **Steven Strogatz**

of Cornell University, *Chaos and the Double Pendulum*; **Philip Morrison** of Mas-

sachusetts Institute of Technology, *Evidence for Atoms*; **Anthony A. Goodman** of

Montana State University, *How We Fail and How We Heal*; **Julius Sumner Miller**,

the Physics of Toys; **Michael Starbird** of the University of Texas at Austin, *Change*

and Motion; **Carl Sagan** of Cornell University, *On The Shores of the Cosmic Ocean*;

Neil deGrasse Tyson of Princeton University and the Hayden Planetarium, *My*

Favorite Universe; **Benjamin S. Carson, Sr.**, Johns Hopkins University Hospital,

His Remarkable Life and Career; **David J. Helfand** of Columbia University, *The*

Vast Reaches of Time and Space; **Hubert N. Alyea** of Princeton University, *Lucky*

Accidents, Great Discoveries and the Prepared Mind; **Monica Neagoy** of Georgetown

University, *Exponential Functions* with a class of high school students; **Verne N.**

Rockcastle of Cornell University, *Meaningful Quantitative Activities in Elementary*

School Science; **Francis B. Colavita** of the University of Pittsburgh, *Sensation, Per-*

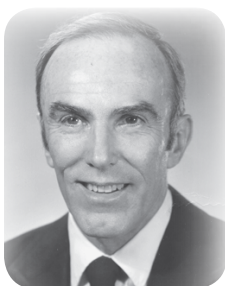
ception, and Behavior; **Lee Marek** formerly of Naperville (Ill.) North High School,

select demonstrations from his popular chemistry courses; **Paul G. Hewitt's**

physics demonstrations from the Vancouver Workshop; and **J. Clinton Sprott**

of the University of Wisconsin, Madison, *The Wonders of Physics*.

Dozens of door prizes directly related to this session will be raffled off through the entire evening right up to Midnight. Receive a useful handout. Come and go, stay as long as you wish. Bring your dinner.





Coit Tower, erected in 1933, is the legacy of Lillie Hitchcock Coit who left \$125,000 to San Francisco “for the purpose of adding beauty to the city I have always loved.”



In San Francisco, the old worldliness of Chinatown’s detailed arched eaves and carved cornices provide a sharp contrast to the gleaming newness of the Transamerica Pyramid’s 853-foot wedge.

7:00–9:00 AM Breakfast

NSTA Life Members' Buffet Breakfast: Celebrate Your Lifetime Dedication (M-13)

(Tickets Required: \$55)

Powell, Hilton

Join your fellow NSTA Life Members for a breakfast filled with memories as well as meaning. Catch up with old friends, make new ones, trade war stories, and discuss ways to share your talents and vitality with the science education community. Activities and door prizes, too!

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



8:00–9:00 AM Presentations

SESSION 1

Inside the Body: The View from Grades K–3 (Bio)

(Elementary)

111, Moscone Center

Patricia S. Caldera (*patricia.caldera@ucsf.edu*) and **Katherine Nielsen** (*katherine.nielsen@ucsf.edu*), University of California, San Francisco

Presider: Katherine Nielsen

A partnership program between medical students and teachers explored K–3 students' perceptions of the human body through pre- and post-assessments.

SESSION 2

Enhancing Science Vocabulary (Gen)

(General)

113, Moscone Center

Steve Bane (*scitime@gmail.com*), SciTime Academy, Glendale, Ariz.

Jodi L. Sanchez (*jodi_sanchez@lusherschool.org*), Lusher Charter School, New Orleans, La.

“Enhancing Science Vocabulary” is back this year with even more ideas designed to help K–8 educators improve student understanding of key scientific terms and concepts.

SESSION 3

Welcome to Earthquake Country: California as a Natural Laboratory (Earth)

(Middle Level)

122, Moscone Center

Robert M. de Groot (*degroot@usc.edu*), University of Southern California, Los Angeles

Earth scientists from all over the world travel to California's natural laboratory to study earthquakes. Learn about simulated “big ones” on the San Andreas fault.

SESSION 4

Opening Doors: Enhancing High School Students' Science Experiences and Opportunities Through a Summer Internship Program (Bio)

(High School–College)

123, Moscone Center

Jean T. MacCormack (*jean.maccormack@ucsf.edu*) and **Andrew Grillo-Hill** (*andrew.grillo-hill@ucsf.edu*), University of California, San Francisco

Presider: Jean T. MacCormack

An exemplary high school internship program in university-based lab research profoundly impacts underrepresented students in self-efficacy and higher education attainment.

SESSION 5

Hands-On (Full-Body) Density and Buoyancy (Chem)

(General)

132, Moscone Center

Allison Bogart (*allie@ocsnet.net*), Woodrow Wallace Middle School, Lake Isabella, Calif.

Learn how to create hands-on and even full-body experiences to help students master the concepts of density and buoyancy.

SESSION 6

From the Mouths of Babes: The Benefits of Having Scientists in the Classroom as Reported by Students in Grades 4–5 (Gen)

(General)

200, Moscone Center

Lakisha M. Witzel (*lakisha.witzel@ucsf.edu*), University of California, San Francisco

A recent study addressed the important question, “What do students think about having scientists help teach science in their classrooms?”

SESSION 7

National Park Preservation Interdisciplinary Project (Gen)

(Informal Education) 206, Moscone Center
Sarah E. Trueblood-Luke, San Diego (Calif.) Unified School District

Sandy Buczynski (*sandyb@sandiego.edu*), University of San Diego, Calif.

Learn how to guide students through quality learning across disciplines and create a Public Service Announcement to submit for a National Parks Awareness Campaign.

SESSION 8

Snapshot Science (Gen)

(Informal Education) 212, Moscone Center
Susan K. Boudreau (*sueboudreau2004@yahoo.com*), Orinda Intermediate School, Orinda, Calif.

Improve your snapshot skills with a professional photographer/science teacher, then use photo assignments to help students link science curriculum to the world outside school.

SESSION 9

Exploring the Myth of “The” Scientific Method (Gen)

(General) 250, Moscone Center
Ron Gray (*ron.gray@science.oregonstate.edu*), Oregon State University, Corvallis

Is “the” scientific method how science really works? Explore this question and many others as we discuss teaching the process of science in our classes.

SESSION 10

Universal Science Acceleration for All (Chem)

(High School–College/Supervision) 252/254, Moscone Center
Maika Watanabe (*watanabe@sfsu.edu*), San Francisco State University, San Francisco, Calif.

How do you accelerate all students to take one college-bound sequence of science classes? High school teachers from a racially diverse school address this problem.

SESSION 11

Shazam! Teaching Basic Genetics Through Superheroes (Bio)

(Middle Level–High School/Informal) 300, Moscone Center
Donna L. Ross (*dlross@mail.sdsu.edu*), San Diego State University, San Diego, Calif.

Debbie DeRoma (*dderoma@rhffleet.org*), Reuben H. Fleet Science Center, San Diego, Calif.

Presider: Debbie DeRoma

More exciting than a pea plant! Discover engaging new ideas for using superhero examples to introduce Mendelian genetics to middle and high school audiences.

SESSION 12

NASA: Evolution of the Universe (Earth)

(High School) 303, Moscone Center
Dana E. Backman, NASA Ames Research Center, Moffett Field, Calif.

Presider: Darlene V. Mendoza, NASA Ames Research Center, Mountain View, Calif.

Stunning images from NASA’s airborne observatory SOFIA provide details regarding the evolution of the universe, star formation, formation of elements, and “life cycle” of organic compounds.

SESSION 13

Customizing Science Instruction with Educational Digital Libraries (Earth)

(General) 307, Moscone Center
Patty A. Kincaid (*patricia_kincaid@dpsk12.org*), Denver (Colo.) Public Schools

Tamara Sumner (*sumner@colorado.edu*), University of Colorado, Boulder

This program enables science educators to customize their instruction with interactive digital library resources and assists them in integrating these resources into curriculum planning.

SESSION 14

Project Based Learning: A Showcase of Success (Env)

(Middle Level–High School/Informal) 309, Moscone Center
Mary C. Whaley (*mwhaley@mbayaq.org*) and **Kim Swan** (*kswan@mbayaq.org*), Monterey Bay Aquarium, Monterey, Calif.

Explore strategies for success. Join Monterey Bay Aquarium educators along with classroom teachers and students who have successfully incorporated long-term projects into their learning.

Sunday, March 13

	Presentations/Workshops	General Sessions/Special Events	Shell Seminars	Exhibitor Workshops
8:00 AM				
9:00 AM				
10:00 AM				
11:00 AM				
12 Noon				
1:00 PM				
2:00 PM				
3:00 PM				
4:00 PM				
5:00 PM				
6:00 PM				
7:00 PM				
8:00 PM				

SESSION 15 (two presentations)

(General)

310, Moscone Center

Presider: Margaret Glass, President, Association of Science-Technology Centers, Washington, D.C.

A Strategic Museum-High School Partnership—Moving Beyond the Field Trip (Gen)

Robert B. Friedman (rfriedman@adlerplanetarium.org), Adler Planetarium, Chicago, Ill.

Aaron Lee, Air Force Academy High School, Chicago, Ill.

Museums, science centers, and zoos are becoming increas-

ingly active as comprehensive educational and service learning partners within their local school systems. Could your school benefit?

Informal Activities in Formal Settings (Gen)

Lauren Lindskog, Exploratorium, San Francisco, Calif.

A new online collection of activities from science museums and after-school programs (at howtosmile.org) has ideas and inspiration for your classroom.

8:00–9:00 AM Workshops

Advantages of Open-ended vs. Directed Activities (Gen)

(Preschool–Elementary)

112, Moscone Center

Rebecca Swanson and **Alex Hamilton** (alex.hamilton@cityofpaloalto.org), The Palo Alto Junior Museum & Zoo, Palo Alto, Calif.

Create spinning tops and drop marbles through liquids as we explore two very different approaches to designing hands-on science activities.

Amazing Aircraft (Phys)

(Elementary)

114, Moscone Center

Jon R. Welte (education@hiller.org), Hiller Aviation Museum, San Carlos, Calif.

Science takes flight at the Hiller Aviation Museum! Explore the world of motion in your own classroom using simple gliders, helicopters, and model airplanes.

Coral Reefs: What Are We Finding Out About Them? (Bio)

(General)

120, Moscone Center

Zamaria Rocio, San Diego (Calif.) City Schools

An ARMADA participant will share recent research carried out on the Great Barrier Reef. Take home classroom activities and a resource guide.

Connecting Science and Engineering to Enhance Critical-thinking and Process Skills (Gen)

(Middle Level–High School/Informal)

121, Moscone Center

Erica G. Barrueto (friesen@berkeley.edu) and **Ruth Costantini** (rmc@berkeley.edu), Lawrence Hall of Science, University of California, Berkeley

Connect students with real-world challenges and develop their skills through designing, building, and testing structures to withstand earthquakes. Integrate activities into Earth science and physics curricula.

Looking at Student Work as a Collaborative Group (Gen)

(Elementary–High School)

124, Moscone Center

Shannon M. Warren (shannon.warren@wwu.edu), Western Washington University, Bellingham

Adrienne B. Somera, Northwest Education Service District, Anacortes, Wash.

Use a protocol to look at real student work samples in order to understand patterns in student thinking and identify instructional next steps.

Rapid Data Collection and Analysis in the Science Classroom (Phys)

(Middle Level–High School)

130, Moscone Center

Rob W. Reniewicki (rreniewicki@susd.org), Arcadia High School, Phoenix, Ariz.

Get hands-on experience using probes and the TI-nSpire handheld to rapidly collect data and analyze data in real time.

Redesigning the Laboratory Investigation: Integrating Inquiry into Chemistry (Chem)

(High School)

133, Moscone Center

Cece Schwensen (cece_schwensen@cate.org), Cate School, Carpinteria, Calif.

Angela R. Powers, Metropolitan State College of Denver, Colo.

Learn how tried-and-true chemistry laboratory activities can be transformed into investigations that engage students while helping them to develop abilities for and understandings about inquiry.

The 5Es and ELD (Gen)
(Elementary–Middle Level) 220/222, Moscone Center

Jo Topps (jtopps@wested.org), K–12 Alliance/WestEd, Santa Ana, Calif.

Learn to integrate the 5E learning sequence design process with English language development (ELD) instruction. Make science accessible to all students with this innovative approach.

Turn Chaos into Magic in the Middle School Lab (Gen)

(General) 236/238, Moscone Center

Stephanie Rafanelli, Bentley School, Oakland, Calif.

The magical middle school teacher creates a classroom where all learners can thrive. Explore open-ended hands-on constructivist labs.

Brain Boot Camp: Empowering Student Learning (Bio)

(Middle Level–High School) 302, Moscone Center

Rylie Hilscher, Laurie A. Hayes (lhayes@cart.org), and **Josh Olson**, 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.

Use GAVRT to Be a Part of the NASA Mission Juno (Earth)

(Elementary–High School) 304, Moscone Center

Gordon Soholt (gsoholt@lcer.org), Academy for Academic Excellence, Apple Valley, Calif.

The GAVRT program lets your students participate in NASA's Juno Mission. Students team with NASA scientists to operate a 34-meter radio telescope from your classroom computer.

Astrobiology: The Search for Life Beyond Earth (Gen)

(High School) 305, Moscone Center

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

Learn how the Astrobiology of Icy Worlds team at NASA's Jet Propulsion Laboratory searches for signs of life on icy moons of our solar system.

Play It Cool with Junior Climate Stewards (Env)

(Middle Level–High School) 308, Moscone Center

Sarah Mazze, University of Oregon, Eugene

Explore the inquiry-based curriculum Junior Climate Stewards with lessons based around actions students can take to create real change in greenhouse gas emissions.

9:30–10:30 AM Presentations

SESSION 1

Building a House of Learning (Gen)

(General) 113, Moscone Center

Ruby J. Tun, Eagle Valley Middle School, Carson City, Nev.

Learn how student conversation promotes the learning and understanding of science content.

SESSION 2

Dissecting Text: Reading Like Scientists (Gen)

(Middle Level–High School) 123, Moscone Center

Wendy Hoffer (wwhoffer@pebc.org), Public Education & Business Coalition, Denver, Colo.

Research-based thinking strategies can support learners in making meaning of the academic language in challenging science texts.

SESSION 3

Differentiation Toward Strong Science and Stronger Language (Chem)

(Middle Level–High School) 132, Moscone Center

Cara L. Hale-Hanes, Long Beach Polytechnic High School, Long Beach, Calif.

Literacy strategies embedded in my chemistry curriculum have resulted in better student achievement. I'll share assessments and methods of evaluating language development based on educational research on student misconceptions in chemistry.

SESSION 4

Growing Students, Not Grades (Gen)

(General) 200, Moscone Center

Julie Murphy, Denny Middle School, Seattle, Wash.

Todd B. Hilgendorff (hilgendorff@guilderlandschools.org), Farnsworth Middle School, Guilderland, N.Y.

Link achievement targets with assessment methods. We'll

share samples of assessments and methods for communicating measurable student performance.

SESSION 5

Research-based Professional Development (Gen)
(General) 206, Moscone Center

Shannon M. Warren (*shannon.warren@wwu.edu*), Western Washington University, Bellingham

Adrienne B. Somera, Northwest Education Service District, Anacortes, Wash.

Learn how to use tools and resources created through an NSF-funded science partnership to create professional development opportunities for science educators.

SESSION 6

The “Take Action!” Project (Gen)
(Middle Level–High School) 212, Moscone Center

Sue Boudreau (*sueboudreau2004@yahoo.com*) and **Karen Snelson** (*ksnelson@orinda.k12.ca.us*), Orinda Intermediate School, Orinda, Calif.

Empower your students to take informed and effective action on science-related issues of their choice with an inspiring project that fits a standard school schedule.

SESSION 7



Explore the Chemistry Education Digital Library (Chem)

(High School–College) 236/238, Moscone Center

Lynn M. Diener (*dienerl@mtmary.edu*), Mount Mary College, Milwaukee, Wis.

Interested in using digital resources in your chemistry classroom? Explore the multitude of free resources on the ChemEd DL, the Chemistry Pathway of the NSDL.

SESSION 8

A STEM Integrated Curriculum (Gen)
(Middle Level–College) 250, Moscone Center

Jarvis Sulcer (*jarvis@lpfi.org*), **Gail Standiford** (*gail514@sbcglobal.net*), and **Steve Temple** (*stemples@gmail.com*), Level Playing Field Institute, San Francisco, Calif.

President: Julian Martinez, Level Playing Field Institute, San Francisco, Calif.

We taught this STEM-based curriculum over three consecutive summers during a six-week residential experience serving grades 9–12 students.

SESSION 9

The Importance of Learning Spaces in Preparing Secondary Students for University Science Instruction (Active Learning) (Gen)

(General) 252/254, Moscone Center

Thomas Haglund (*thaglund@windwardschool.org*) and **James Bologna**, Windward School, Los Angeles, Calif.

We’ll look at the efficacy of learning space design in technology-enhanced active learning to promote enhanced learning and retention in secondary science classes.

SESSION 10 (two presentations)

(General) 302, Moscone Center

From Food Webs to Punnett Squares: Increasing Inquiry in Biology (Bio)

Debbie DeRoma (*dderoma@rhffleet.org*) and **Cristina C. Trecha** (*ctrecha@rhffleet.org*), Reuben H. Fleet Science Center, San Diego, Calif.

Donna L. Ross (*dlross@mail.sdsu.edu*), San Diego State University, San Diego, Calif.

Discover an innovative professional development program in which high school students team with classroom teachers to increase inquiry in traditional life science lessons.

Cereal 101 (Bio)

Viki Acquistapace (*acquistapacev@dlshs.org*), De La Salle High School of Concord, Calif.

Cereal 101 is a composite unit on the biochemistry-nutrition-digestion of breakfast cereal. Students are immersed in labs, research, and a cereal drive for the poor.

SESSION 11

NASA: Inquiry Activities for Learning about Light and the EM Spectrum and Multi-wavelength Astronomy (Earth)

(Middle Level–High School/Informal) 303, Moscone Center

Edna DeVore (*edevore@seti.org*), SETI Institute, Mountain View, Calif.

Denise Smith, Space Telescope Science Institute, Baltimore, Md.

Experience inquiry activities for learning about visible and invisible light using simple classroom technologies. Take home standards-based lessons, colorful posters, and spectroscopes.

SESSION 12

Dancing Demonstrations of Space Science (Earth)

(*Informal Education*) 304, Moscone Center

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

Turn your students' bodies into space demonstrations! Get them out of their seats as they learn how to simulate the solar system, refraction of light, phases of the moon, and more.

SESSION 13

The Flying Gizmo Show (Earth)

(*General*) 307, Moscone Center

Laurie A. Cripe (*lcripe@lcsd.k12.wa.us*), La Center Middle School, La Center, Wash.

This fun assembly-style program will help you discover the science and history of flight through the use of flying toys and models.

SESSION 14 (two presentations)

(*Middle Level–High School*) 309, Moscone Center

Observing a Pond's Seasonal Changes to Learn about Climate Change (Env)

Regina Brinker (*r.brinker@sbcglobal.net*), Christensen Middle School, Livermore, Calif.

By observing seasonal changes of a pond's ecosystem and regularly testing water and soil, students relate local environmental changes to global environmental and climate changes.

Build a Solar House: A Student-constructed Model (Env)

Regina Brinker (*r.brinker@sbcglobal.net*), Christensen Middle School, Livermore, Calif.

Students construct an energy-efficient, solar-powered model house as a culminating environmental and Earth science project. Leave this session with project details, construction advice, and a grading rubric.

SESSION 15

Creating Innovative Living Curricula Through 21st-Century Digital Textbooks (Gen)

(*General*) 310, Moscone Center

Neeru Khosla (*info@ck12.org*), CK-12 Foundation, *www.ck12.org*, Palo Alto, Calif.

Transform your teaching methods and engage students with open-source, standards-aligned, customizable STEM content.

9:30–10:30 AM Workshops

Guided Inquiry Investigations That Promote Change in Students' Conceptual Understanding (Chem)

(*Elementary–Middle Level*) 111, Moscone Center

Patricia S. Caldera (*patricia.caldera@ucsf.edu*) and **Sabine Jeske** (*sabine.jeske@ucsf.edu*), University of California, San Francisco

President: Patricia S. Caldera

These simple student-designed experiments foster conceptual understanding of basic physical science concepts such as...does gas have mass?

Thinking BIG, Learning BIG: Connecting Science, Math, Literacy, and Language in Early Childhood (Gen)

(*Preschool–Elementary*) 112, Moscone Center

Marie Faust Evitt (*marie@thinkingbiglearningbig.com*), Mountain View Parent Nursery School, Mountain View, Calif.

Experience inquiry-based activities related to rain and wind and learn techniques to fully engage young learners while building math skills and boosting literacy.

Out-of-the-Box Innovative Science Teaching: A Holistic Approach (Gen)

(*Middle Level–High School/Informal*) 120, Moscone Center

Sharon Parker, Urban Science Center, Oakland, Calif.

Use Spa-ology to inspire a creative teaching and learning process where students' personal lives are the context for how science theory and application are combined.

Data Analysis Power Tools for Science—Not Your Average Statistics (Gen)

(*Middle Level–High School*) 121, Moscone Center

Fred Estes (*festes@nuevaschool.org*), The Nueva School, Hillsborough, Calif.

Help your students extract more meaning from lab data with easy-to-learn techniques for exploring data graphically and visually. This is no mean feat.

Solar System in the Round (Earth)

(*Elementary–Middle Level/Informal*) 122, Moscone Center

Tom Gates (*tom@raft.net*) and **Greg Brown** (*greg@raft.net*), RAFT San Jose, Calif.

President: Greg Brown

This simple hands-on activity models 360-degree planetary motion around the Sun, enabling teachers and students to measure location and direction in real time.

Supercharge Your Science Lessons: Science Discrepant Events for K–12 Teaching and Learning (Gen)

(Elementary–High School) 124, Moscone Center
Ronald P. Hughes (*rhughes@csu.edu*), California State University, Bakersfield

Learn how to select and use science discrepant events to increase the effectiveness of lessons. We'll illustrate connections between content, processes, and assessment.

Roll the Dice or Call Your Shot? Stack the Deck in Your Favor for Success in STEM Education (Gen)

(General) 125, Moscone Center
Dave E. Menshew (*menshew.d@monet.k12.ca.us*), James C. Enochs High School, Modesto, Calif.

Michele Laverty (*michele@agsciencecenter.org*), National Ag Science Center, Modesto, Calif.

Effective STEM education requires that high school teachers not leave to chance the engagement of younger learners. Get resources to create successful community outreach.

Electro Luminescence: Light Imitating Art (Phys)

(Middle Level–High School) 130, Moscone Center
Craig Yokoi (*craig.yokoi@lausd.net*), Purche Magnet School, Gardena, Calif.

Presider: Bob Thomas, Retired Educator, San Pedro, Calif.

From bio to chemical to electro luminescence (EL), enter the world of glowing things. Create EL wire art objects to dazzle your students.

Using Notebooks to Enhance Science Skills (Gen)

(Elementary–Middle Level) 220/222, Moscone Center
Grahme Smith (*gsmith@calacademy.org*) and **Emily Harris** (*eharris@calacademy.org*), California Academy of Sciences, San Francisco

Practice using a science notebook in a structured way to improve students' science literacy and to enhance their understanding of the scientific method.

Exploring Food Safety from Farm to Fork (Bio)

(Elementary–Middle Level) 224/226, Moscone Center
Stephanie Etcheverria (*setcheverria@cfbf.com*), California Foundation for Agriculture in the Classroom, Sacramento
 Presider: Jenna Swenson, California Foundation for Agriculture in the Classroom, Sacramento

Learn the science behind food we eat. Explore food safety trends and discover ways to encourage students' curiosity.

Using the Exploratorium's Microscope Imaging Station in Your Classroom (Bio)

(Middle Level–High School) 228/230, Moscone Center
Karen Kalumuck, Exploratorium, San Francisco, Calif.

Explore the free classroom resources available on the Exploratorium's online Microscope Imaging Station, including fantastic images, videos, hands-on activities, and more!

Diabetes Technology (Bio)

(Middle Level–High School) 300, Moscone Center
Katy Korsmeyer (*kuokaty@scientist.com*), San Jose State University, San Jose, Calif.

Mark Okuda (*mokuda@aol.com*), Educational Consultant, Los Gatos, Calif.

Louise C. Handly, Andrew P. Hill High School, San Jose, Calif.

Presider: Katy Korsmeyer

Discover a hands-on, lab-based curriculum on diabetes, metabolism, medical devices, nutrition, bioethics, and service learning.

NASA: High School Professional Learning Communities About Climate Change (Env)

(High School) 305, Moscone Center
Alan D. Gould (*agould@berkeley.edu*), **John Erickson** (*jerick@berkeley.edu*), and **Erica G. Friesen** (*friesen@berkeley.edu*), Lawrence Hall of Science, University of California, Berkeley

University of California, Berkeley

The Lifelines for High School Climate Change Education project forms professional learning communities to weave topics pertinent to climate change into high school courses.

Promoting Academic Language Through Classroom Dialogue (Earth)

(Middle Level–High School) 306, Moscone Center
Arthur Beauchamp, University of California, Davis

Strategic use of dialogue protocols can make the science class a rich place for students as they develop academic language.

Timing Is Everything! Getting Students Involved in Climate Change Research with Project BudBurst (Env)

(Elementary–High School) 308, Moscone Center
Sandra Henderson and **Lisa Gardiner** (*lgardiner@neoninc.org*), National Ecological Observatory Network, Boulder, Colo.

Get your students involved in a national climate change field campaign by making simple observations of plants in your community. Hands-on activities and handouts provided.

11:00 AM–12 Noon Presentations

SESSION 1

Understanding the Revised AP Biology Course: Curriculum, Science Practices, and Instructional Design (Bio)

(High School)

113, Moscone Center

Julianne M. Zedalis (zedalisj@bishops.com), The Bishop's School, La Jolla, Calif.

LaTanya Sharpe (lsharpe@collegeboard.org), The College Board, Duluth, Ga.

Spencer Benson, University of Maryland, College Park
Members of the AP Biology Curriculum and Development Committee will provide instructional strategies for integrating inquiry-based and student-centered activities and labs into the current AP Biology course. These activities align with future courses and exam learning objectives.

SESSION 2

Using Biotechnology to Measure Genetic Biodiversity (Bio)

(High School–College)

123, Moscone Center

Ray Cinti (rcinti@sacredsfsf.org) and **Conservation Biology Class of 2011**, Convent of the Sacred Heart High School, San Francisco, Calif.

Presider: Alison Groeger, Convent of the Sacred Heart High School, San Francisco, Calif.

We combined the concepts of ecology and environmental science with a practical analysis of genetic biodiversity in a conservation biology class. Students perform novel research allowing them to extract DNA and clone and sequence genes obtained from any plant population.

SESSION 3

How Do You Engage Minority Families in Science Education? (Phys)

(General)

130, Moscone Center

Vanessa C. Garza (vanessa@iridescentlearning.org), Iridescent, Los Angeles, Calif.

Give minority families the access they desire to support science education. We'll provide step-by-step directions from outreach to curriculum.

SESSION 4

Student Thinking About the Model of the Atom and Changes in Matter from the DIAGNOSER Formative Assessment System (Chem)

(Middle Level–High School)

132, Moscone Center

Ami M. Katz and **Carlos C. Ayala**, Sonoma State University, Rohnert Park, Calif.

Angela Haydel DeBarger (angela.haydel@sri.com), SRI International, Menlo Park, Calif.

Presider: Carlos C. Ayala

Learn about students' thinking about atoms and changes in matter in the DIAGNOSER Formative Assessment system. Free questions and access to system.

SESSION 5

Observing for Evidence of Learning (Gen)

(General)

200, Moscone Center

Robert Sotak (rsotak@everettsd.org), Everett (Wash.) Public Schools

Caroline Kiehle, Institute for Systems Biology, Seattle, Wash.

Experience the process and learn about the teaching/learning outcomes from a highly successful model of school-based teacher collaboration, Observing for Evidence of Learning.

SESSION 6

Supporting Student Success (Gen)

(General)

206, Moscone Center

Shannon M. Warren (shannon.warren@wwu.edu), Western Washington University, Bellingham

Adrienne B. Somera, Northwest Education Service District, Anacortes, Wash.

What barriers prevent students from being successful? Discover strategies that are employed by teachers and administrators in schools that are successful despite potential barriers.

SESSION 7

Practicum-based Science and Literacy Academy (Gen)

(General)

212, Moscone Center

Emily L. Weiss (weisse@berkeley.edu), **Catherine Halvorsen** (chalver@berkeley.edu), and **Lynn Barakos** (lbarakos@berkeley.edu), Lawrence Hall of Science, University of California, Berkeley

Learn about a reflective, practicum, and coaching-based

model of professional development that integrates science and literacy instruction.

SESSION 8

What Did They Learn While They Were There?

(Gen)

(General) 236/238, Moscone Center

Lindzy Bivings and **Megan K. Schufreider** (*mschufreider@calacademy.org*), California Academy of Sciences, San Francisco

Learn to evaluate your students' teacher-guided field trip experience. We'll share a 1,000-student study.

SESSION 9

ARISE (Addiction Research and Investigations for Science Educators)

(Gen)

(General) 250, Moscone Center

Adela de la Torre, University of California, Davis
Cathy Parker (*caparker@sjcoe.net*), San Joaquin County Office of Education, Stockton, Calif.

The purpose of ARISE is to develop the ability of teachers to effectively teach science to English learners and native speakers of English who have low academic language skills.

SESSION 10

Model PLCs/Lesson Study/Inclusive Approaches to Improve Classroom Practices

(Bio)

(General) 300, Moscone Center

Rachel L. Larson, Great Oak High School, Temecula, Calif.

Hear from a new teacher, a strand leader, a former strand leader, and a member of the strand who work productively, cohesively, and successfully in their PLC.

SESSION 11

STEMware: "Serious Games" for Formal and Informal Settings

(Bio)

(High School/Informal Education) 302, Moscone Center

Barbara E. Soots (*besoots@ucdavis.edu*), University of California, Berkeley

Immerse yourself in a virtual world! Discover the micro-organism causing a deadly zombie outbreak. Implement a cure, save the town, and learn important biotechnology concepts.

SESSION 12

NASA's Online Professional Development: Bringing Mars to Earth!

(Earth)

(Informal Education)

305, Moscone Center

Greg Pitzer, NASA Ames Research Center, Moffett Field, Calif.

Learn how you can participate in an online NASA course with leading scientists. We'll look at related inquiry-based activities and how to communicate with teachers around the country.

SESSION 13

Ocean Acidification: A 5E Lesson That Transforms Knowledge into Action

(Earth)

(General)

307, Moscone Center

Elizabeth de los Santos, Foothill High School, Santa Ana, Calif.

Tamara Galvan, Aquarium of the Pacific, Long Beach, Calif.

Discover how a partnership between a school and an aquarium can strengthen students' understanding of global climate change. Get the latest research, real-time data resources, and lesson plans.

SESSION 14

Survivor: Global Society from the Scientific Perspective

(Env)

(High School)

309, Moscone Center

Lola B. Coleman (*lcoleman@fairmontschools.com*) and **Robert Varnold** (*rvarnold@fairmontschools.com*), Fairmont Preparatory Academy, Anaheim, Calif.

Survivor coursework was designed to build upon the innate curiosity of our students. We investigate current topics such as global warming, pandemics, and food using multiple resources.

SESSION 15

Give Science a Voice! Digital Storytelling in the Science Classroom

(Gen)

(Elementary–High School)

310, Moscone Center

Roger D. Pence (*rogpence@yahoo.com*), Benicia Middle School, Benicia, Calif.

Creation of multimedia digital stories about science concepts fosters engagement, literacy, content knowledge, and final product ownership. We'll investigate techniques, tips, and copyright-friendly resources.

11:00 AM–12 Noon Workshops

Flutter and Float (Phys)

(Elementary) 111, Moscone Center

Karen Miel and **Carl Oosterman**, CuriOdyssey, San Mateo, Calif.

Explore what makes something fly, flutter, or float while you build flying contraptions. Take home your creations and more hands-on activities.

Fight Bac! Integrating Food Safety into Your Elementary Classroom (Bio)

(Elementary) 112, Moscone Center

Laurie A. Hayes (lhayes@cart.org), Center for Advanced Research and Technology, Clovis, Calif.

These hands-on, ready-to-use activities integrate science and health standards while teaching students about the importance of hand washing and food safety. Free teaching materials and door prizes!

Designing Lessons to Impact Environmental Identity Development in Children (Env)

(Elementary–Middle Level) 114, Moscone Center

Ryan J. Brock (rbrock@washoe.k12.nv.us) and **David T. Crowther** (crowther@unr.edu), University of Nevada, Reno

Presenter: David T. Crowther

Based on the findings of an in-depth study of environmental identity development in children, these activities are designed to help children connect with the natural world.

Digital Storytelling (Gen)

(Middle Level–High School) 120, Moscone Center

Kristina Peterson (kristina.peterson@lakesideschool.org), Lakeside School, Seattle, Wash.

Learn the elements of digital storytelling, the technology and software needed, and a variety of uses for science assessment. Leave ready to try it in your classroom.

Implementing Authentic Activities in the Science Classroom (Gen)

(Middle Level–High School) 121, Moscone Center

Jennifer E. Lineback (lineback@sciences.sdsu.edu) and **Corinne H. Lardy** (corinne_lardy@yahoo.com), San Diego State University, San Diego, Calif.

Explore implementation of authentic activities in science instruction as we share examples that have successfully engaged students in “real-world” scientific practices and processes. Materials provided.

Building a Solar Oven: A Data-driven Inquiry Investigation (Earth)

(Elementary–Middle Level) 122, Moscone Center

Linda Akiyama, University of California, San Francisco
Shawn Mansager, Leonard R. Flynn Elementary School, San Francisco, Calif.

Presenter: Patricia S. Caldera, University of California, San Francisco

Use data collected by students to design and build model solar ovens.

Heliophysics: Invisible Boundaries (Gen)

(Elementary–High School) 125, Moscone Center

Christopher Martin (martinbrockie@gmail.com), Howenstine High Magnet School, Tucson, Ariz.

Students use PowerPoint, planet data cards, and activities to explore the heliosphere and magnetic field that preserve life on Earth.

Easy Optics Demonstration (Chem)

(Middle Level–College) 133, Moscone Center

Robert T. Sparks and **Constance E. Walker** (cwalker@noao.edu), National Optical Astronomy Observatory, Tucson, Ariz.

Teach the principles of optics with low-cost materials you may already have around your lab and house. Free CD.

The Language of Science: “I See What You Mean” (Gen)

(Preschool–Middle Level) 220/222, Moscone Center

Lisa M. Nyberg (lnyberg@csufresno.edu), California State University, Fresno

Learn how to create visual teaching tools to make abstract concepts comprehensible for ALL of your students.

✓ Rigor vs. Rhetoric: Teaching Scientific Skepticism (Gen)

(High School) 224/226, Moscone Center

Jenelle D. Hopkins (jhopkins@interact.ccsd.net), Centennial High School, Las Vegas, Nev.

Learn some strategies for increasing students’ skills in analyzing the debates surrounding scientific issues.

Personalized Medicine and Pharmacogenomics

(Bio)

(High School–College/Informal) 228/230, Moscone Center

Karen Kalumuck, Exploratorium, San Francisco, Calif.

Discover the power of personalized medicine in these hands-on activities that model microarray analysis as used to tailor therapeutic treatments to patients' individual genomes.

Astrobiology Comes to Life

(Earth)

(Middle Level–High School) 303, Moscone Center

Zamaria Rocio, San Diego (Calif.) City Schools

Get the latest information and activities about nanobacteria, abiotic versus biotic signatures, and comets and meteorites delivering water and hydrocarbons to Earth. We'll also look at brain research on learning.

Galileo and Spots on the Sun: Measuring the Period of Rotation of the Sun

(Earth)

(Middle Level–High School) 304, Moscone Center

Brian Kruse, Astronomical Society of the Pacific, San Francisco, Calif.

This activity uses sunspots to estimate the Sun's period of rotation. Learn how Galileo's observations of sunspots changed our view of the universe.

Low on Materials...Heavy on Impact: Geology Lessons That Rock!

(Earth)

(Elementary–High School)

306, Moscone Center

Grahme Smith and **Sarah Delaney** (*sdelaney@calacademy.org*), California Academy of Sciences, San Francisco

Learn how to role-play the rock cycle, take a virtual geology field trip, and triangulate seismic data to locate earthquake epicenters with just a few materials.

Polar Science from the Field to Your Classroom

(Env)

(Middle Level–High School)

308, Moscone Center

Betsy B. Wilkening (*ewilkening99@gmail.com*), Wilson K–8 School, Tucson, Ariz.

Mary Anne Pella-Donnelly (*mdonnell@chicousd.org*), Chico Junior High School, Chico, Calif.

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

Jillian Beth Worsam (*jworsam@fusd1.org*), Flagstaff (Ariz.) Unified School District

President: Betsy B. Wilkening

Engage your students in real-world Earth science research with these inquiry-based lessons developed by PolarTREC and IPY Oslo Science Conference teachers.

Meetings and Social Functions

Saturday, March 12

NSTA Past Presidents' Breakfast

For NSTA Past Presidents Only

Yosemite A, Hilton..... 7:00–8:15 AM

NESTA Earth and Space Science Resource Day Breakfast

By Ticket Through NESTA

Nob Hill A, Marriott 7:00–8:30 AM

NSTA/SCST Nanotechnology Symposium Breakfast and Poster Session

By Invitation Only

Continental 4, Hilton..... 7:30–9:30 AM

AMSE/NSTA Minority Caucus George Washington Carver Breakfast

By Invitation Only

Club Room, Marriott..... 7:30–9:30 AM

NSTA Recommends Reviewer/Publisher Coffee

By Invitation Only

Green, Hilton 8:00–9:00 AM

Past Presidents Advisory Board Meeting

Yosemite A, Hilton..... 8:15–9:15 AM

NSTA International Lounge

Laurel, Marriott 9:00 AM–5:00 PM

COSEE Luncheon

By Invitation Only

Club Room, Marriott..... 11:30 AM–1:30 PM

NSTA/SCST College Luncheon (M-9)

(Tickets Required: \$65)

Yosemite A, Hilton..... 12 Noon–1:30 PM

CESI/NSTA Elementary Science Luncheon (M-11)

(Tickets Required: \$65)

Yosemite B, Hilton 12 Noon–2:00 PM

Aerospace Educators Luncheon—NASA AESP 50th

Anniversary Celebration (M-10)

(Tickets Required: \$30)

Sponsored in part by Tor-Forge Books

Golden Gate B, Marriott..... 12 Noon–2:00 PM

Science Matters State Coordinators Luncheon and Leadership Meeting

By Invitation Only

Sponsored by PBS Educational Media, NOVA, WGBH Teachers' Domain, KQED Public Media, and Twin Cities Public Television (Sci-Girls).

Union Square 5/6, Hilton 12 Noon–3:00 PM

NASA Lifelines for High School Climate Change

Education Leaders Meeting

Sierra F, Marriott..... 3:00–5:00 PM

NESTA Annual Membership Meeting

Meeting Room Hall D, Moscone Center..... 5:00–6:30 PM

President's Annual Banquet (M-12)

(Tickets Required: \$85)

Continental 4/5, Hilton 7:00–9:30 PM

Sunday, March 13

NSTA Life Members' Buffet Breakfast (M-13)

(Tickets Required: \$55)

Powell, Hilton 7:00–9:00 AM



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AAAS (Booth #2500)

Saturday, March 12	12 Noon–3:00 PM	258 & 260, Moscone	Getting the Most Out of National Science Digital Library (NSDL) Science Literacy Maps (p. 69)
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Adam Equipment Inc. (Booth #1008)

Saturday, March 12	8:00–9:30 AM	110, Moscone Center	Massive Reactions (p. 30)
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Animalearn (Booth #2241)

Saturday, March 12	4:00–5:30 PM	303, Moscone Center	Human and Animal Body Systems and Organs: Free Teaching Resources for K–6 and Beyond (p. 100)
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Annenberg Learner (Booth #708)

Saturday, March 12	12 Noon–1:30 PM	300, Moscone Center	Teaching About the Environment: Resources for K–12 Classrooms (p. 66)
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Backyard Brains, Inc. (Booth #2243)

Saturday, March 12	2:00–3:30 PM	300, Moscone Center	Circuits to Circuits: Building Your Own Equipment to Study Neurons (p. 88)
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Bio-Rad Laboratories (Booth #1319)

Saturday, March 12	8:00–9:30 AM	306, Moscone Center	Bio-Rad Microbes and Health: “What Causes Yogurtiness?” Kit (p. 35)
Saturday, March 12	10:00–11:00 AM	306, Moscone Center	Bio-Rad Genes in a Bottle™ Kit (p. 49)

Biome in a Box (Makers of the WormWatcher) (Booth #2237)

Saturday, March 12	4:00–5:30 PM	132, Moscone Center	Composting and Inquiry: Hundreds of Hands-On Possibilities (p. 99)
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BIOZONE International (Booth #1018)

Saturday, March 12	8:00–9:30 AM	256, Moscone Center	A Showcase of BIOZONE’s Latest Workbooks and Presentation Media for Grades 9–12 (p. 34)
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Carolina Biological Supply Co. (Booth #1500)

Saturday, March 12	8:00–9:30 AM	122, Moscone Center	Don’t Forget the “M” in STEM: A Focus on Literacy in the Math Classroom (p. 33)
Saturday, March 12	8:00–9:30 AM	120, Moscone Center	Strawberry DNA and Molecular Models (p. 30)
Saturday, March 12	8:00–9:30 AM	121, Moscone Center	Think Mink! Exploring Mammalian Anatomy with Carolina’s Perfect Solution® Mink (p. 33)
Saturday, March 12	10:00–11:30 AM	120, Moscone Center	Introduction to Wisconsin Fast Plants® (p. 50)
Saturday, March 12	10:00–11:30 AM	122, Moscone Center	Don’t Forget the “M” in STEM: A Focus on RTI in the Math Classroom (p. 50)
Saturday, March 12	10:00–11:30 AM	121, Moscone Center	Engage Student Inquiry with Carolina’s Environmental Science Labs (p. 50)
Saturday, March 12	12 Noon–1:30 PM	122, Moscone Center	Don’t Forget the “M” in STEM: A Focus on Inquiry in the Math Classroom (p. 64)
Saturday, March 12	12 Noon–1:30 PM	120, Moscone Center	Infection Detection: An ELISA Simulation for Your Classroom (p. 64)
Saturday, March 12	12 Noon–1:30 PM	121, Moscone Center	Comparative Vertebrate Anatomy with Carolina’s Perfect Solution® Specimens (p. 64)
Saturday, March 12	2:00–3:30 PM	121, Moscone Center	SQUID INK-UIRY: Inquiry-based Invertebrate Anatomy Through Squid Dissection (p. 87)
Saturday, March 12	2:00–3:30 PM	120, Moscone Center	Forensics for the Biology Laboratory (p. 86)
Saturday, March 12	2:00–3:30 PM	122, Moscone Center	Learning to Read, Reading to Learn: Literacy, Notebooks, and the Power of Inquiry! (p. 87)

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CENCO Physics (Booth #1907)

Saturday, March 12 4:00–5:30 PM 270 & 272, Moscone Put Me in Coach! The Physics of Baseball (p. 100)

CPO Science/School Specialty Science (Booth #1628)

Saturday, March 12 8:00–9:30 AM 131, Moscone Center Real-Time Displacement, Velocity, and Acceleration Measurements with CPO's Velocity Sensor (p. 33)
Saturday, March 12 10:00–11:30 AM 131, Moscone Center Chemistry and the Atom: Fun with Atom-building Games! (p. 50)
Saturday, March 12 12 Noon–1:30 PM 131, Moscone Center Optics with Light and Color: A Series of EnLIGHTening Experiments! (p. 65)
Saturday, March 12 2:00–3:30 PM 131, Moscone Center Make Dimensional Analysis Fun with CPO Science's New Conversion Chain Cards (p. 87)

Dawn Publications (Booth #1219)

Saturday, March 12 2:00–3:30 PM 309, Moscone Center Beyond the Storybook (p. 89)

Deep Earth Academy/Consortium for Ocean Leadership (Booth #921)

Saturday, March 12 4:00–5:30 PM 309, Moscone Center Earthquake Prediction, Dinosaur Death, and Other Discoveries from the Deep Sea! (p. 100)

Delta Education/School Specialty Science–FOSS (Booth #1529)

Saturday, March 12 8:00–10:00 AM 130, Moscone Center Using Science Notebooks with FOSS K–6 (p. 36)
Saturday, March 12 11:00 AM–12:30 PM 130, Moscone Center FOSS California Leadership Academy (p. 62)
Saturday, March 12 1:30–4:00 PM 130, Moscone Center Elementary Science Notebooks for Formative Assessment with FOSS (For Experienced Users) (p. 79)

Dinah-Might Adventures, LP (Booth #2128)

Saturday, March 12 8:00–9:30 AM 303, Moscone Center Building Science Vocabulary with Dinah Zike's Visual Kinesthetic Vocabulary® and Foldables® (p. 35)
Saturday, March 12 10:00–11:30 AM 303, Moscone Center Using Dinah Zike's Notebook Foldables® for Lasting Understanding (p. 52)

Discovery Education (Booth #2123)

Saturday, March 12 8:00–9:30 AM 206, Moscone Center Raising Test Scores with Discovery Education Science (p. 34)
Saturday, March 12 10:00–11:30 AM 206, Moscone Center Explore the Blue Near You: Bring Critical Aquatic Issues to Life with New Resources! (p. 51)
Saturday, March 12 12 Noon–1:30 PM 206, Moscone Center What's the Connection—Louisiana, Florida, Oregon, and Indiana? (p. 65)
Saturday, March 12 2:00–3:30 PM 206, Moscone Center It's How They Learn: 50 Ways to Use Discovery Education Content (p. 88)

DYMO/Mimio Interactive Teaching Technologies (Booth #1819)

Saturday, March 12 8:00–9:00 AM 274 & 276, Moscone Show Me the Money: Learn the Tips and Tricks to Grant Funding (p. 30)
Saturday, March 12 9:30–10:30 AM 274 & 276, Moscone Using Interactive Classroom Technologies to Advance STEM Learning for Elementary Students (p. 48)
Saturday, March 12 11:00 AM–12 Noon 274 & 276, Moscone Using Interactive Classroom Technologies to Advance STEM Learning for Secondary Students (p. 62)
Saturday, March 12 12:30–1:30 PM 274 & 276, Moscone Quality Interactive Science Lessons, Part 1: What to Look For (p. 76)
Saturday, March 12 2:00–3:00 PM 274 & 276, Moscone Quality Interactive Science Lessons, Part 2: How to Create Them (p. 86)
Saturday, March 12 3:30–4:30 PM 274 & 276, Moscone Engaging Students in Science Through Interactive Teaching Tools (p. 97)

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EcoTeach (Booth #1007)

Saturday, March 12	4:00–5:30 PM	110, Moscone Center	EcoTeach and Veragua Rain Forest: Biodiversity of Costa Rica (p. 99)
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EduChange and Teachers for Learners (Booth #1141)

Saturday, March 12	10:00–11:30 AM	202 & 204, Moscone	A Systematic Approach to Academic Language (p. 51)
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EDVOTEK (Booth #919)

Saturday, March 12	10:00–11:30 AM	309, Moscone Center	Human Genetics of Alcohol Consumption and Metabolism (p. 52)
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Esri (Booth #719)

Saturday, March 12	8:00–9:30 AM	304, Moscone Center	Geotagging and Mapping Your Field Data (p. 35)
Saturday, March 12	2:00–3:30 PM	304, Moscone Center	Analyzing Science Data with Web GIS (p. 89)
Saturday, March 12	4:00–5:30 PM	304, Moscone Center	Geotagging and Mapping Your Field Data (p. 100)

Fisher Science Education (Booth #1915)

Saturday, March 12	8:00–9:30 AM	236 & 238, Moscone	Art vs. Science: The Role of Science in the Wine-making Process (p. 34)
Saturday, March 12	10:30 AM–12 Noon	236 & 238, Moscone	Art vs. Science: The Role of Science in the Wine-making Process (p. 54)
Saturday, March 12	1:30–2:30 PM	236 & 238, Moscone	Creating Tests Can Be Easy! Let Examgen Show You How (p. 77)
Saturday, March 12	3:30–4:30 PM	236 & 238, Moscone	Roller Coaster Physics: Putting Physics Principles in Action (p. 97)

Flinn Scientific, Inc. (Booth #1801)

Saturday, March 12	10:00–11:30 AM	304, Moscone Center	Promote Inquiry Using Chemistry Demonstrations (p. 52)
Saturday, March 12	12 Noon–1:30 PM	304, Moscone Center	Hands-On Integrated Science Activities for Middle School (p. 66)

GASTEC Corp. (Booth #1106)

Saturday, March 12	12 Noon–1:30 PM	110, Moscone Center	Do You Know What You Are Breathing? (p. 64)
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Google (Booth #1336)

Saturday, March 12	10:00–11:30 AM	123, Moscone Center	Computational Thinking (p. 50)
Saturday, March 12	12 Noon–1:30 PM	123, Moscone Center	Using Google Earth in Science (p. 65)
Saturday, March 12	2:00–3:30 PM	123, Moscone Center	Using Google Earth in Science (p. 87)

Hands & Minds Inc. (Booth #1105)

Saturday, March 12	2:00–3:30 PM	110, Moscone Center	Engage Your Hands and Minds While Building Body Systems in Clay! (p. 86)
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Houghton Mifflin Harcourt (Booth #2200)

Saturday, March 12	8:00–9:30 AM	308, Moscone Center	Teaching Middle School Science with a Digital Curriculum (p. 35)
Saturday, March 12	10:00–11:30 AM	308, Moscone Center	Bringing Biology to Life (p. 52)
Saturday, March 12	12 Noon–1:30 PM	308, Moscone Center	21st-Century Literacy for Budding Scientists (p. 67)
Saturday, March 12	2:00–3:30 PM	308, Moscone Center	Teaching Elementary Science with a Digital Curriculum (p. 89)
Saturday, March 12	4:00–5:30 PM	308, Moscone Center	Sparkling More Interest with Chemistry: A Part 2 Experience (p. 100)

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Howard Hughes Medical Institute (Booth #1228)

Saturday, March 12	8:00–9:30 AM	134, Moscone Center	The Science of Stem Cells and Diabetes: Pulse-Chase Activities (p. 34)
Saturday, March 12	10:00–11:30 AM	134, Moscone Center	The Science of Stem Cells and Diabetes: Microarray Analysis (p. 51)
Saturday, March 12	12 Noon–1:30 PM	134, Moscone Center	Teaching Gene Expression and Gene Regulation with Free Resources from the Howard Hughes Medical Institute (HHMI) (p. 65)
Saturday, March 12	2:00–3:30 PM	134, Moscone Center	Free Resources from the Howard Hughes Medical Institute (HHMI) to Enhance Your Lessons on DNA and Biotechnology (p. 88)
Saturday, March 12	4:00–5:30 PM	134, Moscone Center	FREE Teaching Resources and Interactive Models from the Howard Hughes Medical Institute (HHMI) on Immunology and HIV (p. 99)

International Schools Services (Booth #2536)

Saturday, March 12	2:00–3:30 PM	133, Moscone Center	Work Abroad! American and International Schools—Worldwide (p. 87)
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It's About Time (Booth #1621)

Saturday, March 12	8:00–9:00 AM	307, Moscone Center	Investigations in Environmental Science: A Case-based Approach (p. 30)
Saturday, March 12	9:30–10:30 AM	307, Moscone Center	NEW Astronomy Textbook Written Specifically for High School Students (p. 48)
Saturday, March 12	11:00 AM–12 Noon	307, Moscone Center	Teaching STEM in the 21st Century: Integrating Project-based Curricula and Probeware in Your Everyday Lessons (p. 62)
Saturday, March 12	12:30–1:30 PM	307, Moscone Center	<i>EarthComm</i> —New Edition! (p. 76)
Saturday, March 12	2:00–3:00 PM	307, Moscone Center	Project-Based Inquiry Science Programs: A Teacher Roundtable (p. 86)
Saturday, March 12	3:30–4:30 PM	307, Moscone Center	The Next Generation of Middle School Programs: Project-Based Inquiry Science (PBIS) (p. 97)

The JASON Project/Immersion Learning/Nautilus Live (Booth #1338)

Saturday, March 12	8:00–9:30 AM	124, Moscone Center	The JASON Project, Immersion Learning, and Nautilus Live: Exploration-based Learning (p. 33)
Saturday, March 12	10:00–11:30 AM	124, Moscone Center	Integrating Video Games and Core Curriculum (p. 50)
Saturday, March 12	12 Noon–1:30 PM	124, Moscone Center	Immersion Learning Hooks Kids On Ocean Science (p. 65)

Kendall Hunt Publishing Co. (Booth #1729)

Saturday, March 12	8:00–9:30 AM	123, Moscone Center	Exploring the Online Kendall Hunt Learning Network (p. 33)
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Key Curriculum Press (Booth #1838)

Saturday, March 12	2:00–3:30 PM	256, Moscone Center	Living By Chemistry: Feeling Under Pressure (p. 88)
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LAB-AIDS, Inc. (Booth #1613)

Saturday, March 12	8:00–9:30 AM	125, Moscone Center	What Is the Difference Between Heat and Temperature? (p. 33)
Saturday, March 12	10:00–11:30 AM	125, Moscone Center	Stem Cell Differentiation (p. 50)
Saturday, March 12	12 Noon–1:30 PM	125, Moscone Center	Photosynthesis and Respiration Shuffle! (p. 65)
Saturday, March 12	2:00–3:30 PM	125, Moscone Center	One in a Million! (p. 87)
Saturday, March 12	4:00–5:30 PM	125, Moscone Center	Teaching About Hydrogen Fuel Cells (p. 99)

LaMotte Co. (Booth #1011)

Saturday, March 12	8:00–9:30 AM	300, Moscone Center	Stream Ecology: Slimy Leaves for Clean Streams (p. 35)
Saturday, March 12	10:00–11:30 AM	300, Moscone Center	Stream Ecology: Slimy Leaves for Clean Streams (p. 51)

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LEGO Education (Booth #1929)

Saturday, March 12	12 Noon–1:30 PM	309, Moscone Center	Hands-On Elementary Science with LEGO Education (p. 67)
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Lesley University (Booth #2505)

Saturday, March 12	2:00–3:30 PM	132, Moscone Center	Try Science’s Blue Ice Experiment (p. 87)
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McGraw-Hill School Education Group (Booth #2129)

Saturday, March 12	2:00–3:30 PM	303, Moscone Center	Teaching the Digital Generation (p. 88)
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National Science Foundation (Booth #736)

Saturday, March 12	12 Noon–1:30 PM	202/204, Moscone	Real-World Science: NBC/NSF Short Videos You Can Use in Your Classroom (p. 65)
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PASCO Scientific (Booth #1211 and Booth #1300)

Saturday, March 12	8:00–9:30 AM	132, Moscone Center	Investigating Mitochondrial Genetics (p. 33)
Saturday, March 12	8:00–9:30 AM	133, Moscone Center	Middle School Physical Science: Learn Key Concepts Through Hands-On, Probeware-based Activities (p. 34)
Saturday, March 12	10:00–11:30 AM	133, Moscone Center	Rise Above the Storm: Introducing STEM in Middle School (p. 51)
Saturday, March 12	10:00–11:30 AM	132, Moscone Center	Rise Above the Storm: Introducing STEM in High School (p. 51)

Pearson (Booth #1601)

Saturday, March 12	8:00–9:30 AM	305, Moscone Center	New Tools, New Insights, and New Ways of Understanding Science with Miller and Levine Biology (p. 35)
Saturday, March 12	10:00–11:30 AM	305, Moscone Center	Teaching Science Through Real-World Events (p. 52)
Saturday, March 12	12 Noon–1:30 PM	305, Moscone Center	Planet Diary: Using Current Events to Engage Your Students in Science (p. 67)
Saturday, March 12	2:00–3:30 PM	305, Moscone Center	Science Under Siege? Teaching Evolution in a Climate of Controversy (p. 89)
Saturday, March 12	4:00–5:30 PM	305, Moscone Center	Untamed Science! How to Make Your Own Science Videos from Scratch (p. 100)

SAE International (Booth #1232)

Saturday, March 12	10:00–11:30 AM	110, Moscone Center	A World In Motion®: Fuel Cell Challenge (p. 50)
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Sangari Active Science (Booth #2314)

Saturday, March 12	4:00–5:30 PM	133, Moscone Center	Introduction to Sangari Active Science (p. 99)
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Sargent-Welch (Booth #1907)

Saturday, March 12	8:00–9:30 AM	270 & 272, Moscone	Mix It Up: Column Chromatography to Study Proteins (p. 34)
Saturday, March 12	12 Noon–1:30 PM	270 & 272, Moscone	Stronger, New, and Improved Biotechnology: <i>Science for the New Millennium</i> (p. 66)

ScholAR® Chemistry (Booth #1907)

Saturday, March 12	2:00–3:30 PM	270 & 272, Moscone	ScholAR Hands-On Hand Jive (p. 88)
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Science Kit & Boreal Laboratories (Booth #1901)

Saturday, March 12	10:00–11:30 AM	270 & 272, Moscone	Paint It RED! Using Technology to Teach Life Science (p. 51)
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Simulation Curriculum Corp. (Booth #928)

Saturday, March 12	10:00–11:30 AM	256, Moscone Center	<i>The Layered Earth: 3-D Interactive Geology Curriculum</i> (p. 51)
Saturday, March 12	12 Noon–1:30 PM	256, Moscone Center	<i>The Layered Earth: 3-D Interactive Geology Curriculum</i> (p. 66)

Smart Science® Education (Booth #2517)

Saturday, March 12	8:00–9:30 AM	310, Moscone Center	Best Practices Implementing Online Science Labs Both In and Out of the Classroom (p. 36)
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SMART Technologies (Booth #1111)

Saturday, March 12	8:00–9:30 AM	202 & 204, Moscone	SMART Technologies and the Science Classroom (p. 34)
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Society for Neuroscience (Booth #641)

Saturday, March 12	2:00–3:30 PM	124, Moscone Center	The Wired Brain: What Research Tells Us About Attention (p. 87)
Saturday, March 12	4:00–5:30 PM	124, Moscone Center	Neuromyth Busters (p. 99)

Teacher Created Materials (Booth #1236)

Saturday, March 12	8:00–9:30 AM	309, Moscone Center	ELL Strategies for Making Science Content Comprehensible (p. 36)
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Tempo Gloss Globe (Booth #734)

Saturday, March 12	4:00–5:30 PM	300, Moscone Center	Build a Globe and Add Another Dimension to Earth Science Learning (p. 100)
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Ten80 Education (Booth #2600 and Booth #2601)

Saturday, March 12	12 Noon–1:30 PM	303, Moscone Center	The New F.A.S.T. Challenge: Teaching STEM in Partnership with NASCAR and Ten80 Education (p. 66)
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Thermo Fisher Scientific Inc.(Booth #841)

Saturday, March 12	4:00–5:30 PM	256, Moscone Center	Teaching with the New SPECTRONIC 200 (p. 99)
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Vernier Software & Technology (Booth #1518)

Saturday, March 12	8:00–9:30 AM	301, Moscone Center	<i>Physics with Vernier</i> (p. 35)
Saturday, March 12	8:00–9:30 AM	302, Moscone Center	Water Quality with Vernier (p. 35)
Saturday, March 12	10:00–11:30 AM	302, Moscone Center	Environmental Science with Vernier (p. 52)
Saturday, March 12	10:00–11:30 AM	301, Moscone Center	Chemistry with Vernier (p. 52)
Saturday, March 12	12 Noon–1:30 PM	301, Moscone Center	Biology with Vernier (p. 66)
Saturday, March 12	12 Noon–1:30 PM	302, Moscone Center	Bridging STEM and Vernier Technology (p. 66)
Saturday, March 12	2:00–3:30 PM	302, Moscone Center	Inquiry Chemistry with Vernier (p. 88)
Saturday, March 12	2:00–3:30 PM	301, Moscone Center	Advanced Biology and Biotechnology with Vernier (p. 88)

Schedule at a Glance

G = General	M = Middle School	S = Supervision/Administration	T = Teacher Preparation
P = Preschool	H = High School	I = Informal Education	E = Elementary
C = College	R = Research		

Biology/Life Science: Saturday

8:00–9:00 AM	I	Pacific B, Marriott	NSF Follow-up Session: The McMurdo Dry Valleys of Antarctica: Harshes Place on Earth or a Polar Oasis? (p. 22)
8:00–9:00 AM	M–H	Sierra A, Marriott	Integrating Probes in the Interactive Notebook (p. 22)
8:00–9:00 AM	M	Continental 8, Hilton	Enhancing Laboratory Skills in Middle School Students (p. 26)
8:00–9:00 AM	G	Sierra A, Marriott	Biotechnology in the Classroom: Results from the Field (p. 22)
8:00–9:00 AM	M–H/I	Pacific I, Marriott	Look but Don't Touch! (p. 28)
8:00–9:00 AM	M–H	Pacific H, Marriott	Infect Your Biology Classroom with Math (p. 28)
8:00–9:30 AM	9–12	123, Moscone Center	Exploring the Online Kendall Hunt Learning Network (p. 33)
8:00–9:30 AM	9–12	305, Moscone Center	New Tools, New Insights, and New Ways of Understanding Science with Miller and Levine Biology (p. 35)
8:00–9:30 AM	9–C	121, Moscone Center	Think Mink! Exploring Mammalian Anatomy with Carolina's Perfect Solution® Mink (p. 33)
8:00–9:30 AM	9–12	256, Moscone Center	A Showcase of BIOZONE's Latest Workbooks and Presentation Media for Grades 9–12 (p. 34)
8:00–9:30 AM	8–12	120, Moscone Center	Strawberry DNA and Molecular Models (p. 30)
8:00–9:30 AM	9–12	132, Moscone Center	Investigating Mitochondrial Genetics (p. 33)
8:00–9:30 AM	7–C	306, Moscone Center	Bio-Rad Microbes and Health: "What Causes Yogurttness?" Kit (p. 35)
8:00–9:30 AM	9–12	270/272, Moscone Center	Mix It Up: Column Chromatography to Study Proteins (p. 34)
8:00–9:30 AM	9–C	134, Moscone Center	The Science of Stem Cells and Diabetes: Pulse-Chase Activities (p. 34)
8:30–9:00 AM	M–H	Golden Gate C3, Marriott	How to Find a Specimen Quickly Under a Microscope (p. 37)
9:30–10:30 AM	G	Pacific I, Marriott	Increasing Cognition by Using Live Animals (p. 42)
9:30–10:30 AM	G	Golden Gate C3, Marriott	Medical Mysteries: A FREE Online Adventure Game using Technology, Microbiology, and the Scientific Method (p. 42)
9:30–10:30 AM	H	Pacific A, Marriott	Genetic Engineering in Agriculture (p. 45)
9:30–10:30 AM	H	Pacific H, Marriott	Human Skin Pigmentation and UV Intensity (p. 45)
9:30–10:30 AM	H	Sierra A, Marriott	Making Innovative Curricula That Teachers Want to Use: Animations, Inquiry, and Interactivity (p. 43)
9:30–10:30 AM	H	Sierra A, Marriott	Preventing Misconceptions That Arise from Student Use of Realistic 3-D Animations (p. 43)
9:30–10:30 AM	I	Pacific I, Marriott	An Ocean Inventory: Bringing the Results of the First Global Census of Marine Life to the Classroom (p. 42)
9:30–10:30 AM	E–M	Continental 8, Hilton	Tea Bags for Two—Cells and You (p. 44)
10:00–11:00 AM	7–C	306, Moscone Center	Bio-Rad Genes in a Bottle™ Kit (p. 49)
10:00–11:30 AM	9–12	125, Moscone Center	Stem Cell Differentiation (p. 50)
10:00–11:30 AM	6–11	270/272, Moscone Center	Paint It RED! Using Technology to Teach Life Science (p. 51)
10:00–11:30 AM	9–C	134, Moscone Center	The Science of Stem Cells and Diabetes: Microarray Analysis (p. 51)
10:00–11:30 AM	9–C	309, Moscone Center	Human Genetics of Alcohol Consumption and Metabolism (p. 52)
10:00–11:30 AM	K–12	120, Moscone Center	Introduction to Wisconsin Fast Plants® (p. 50)
10:00–11:30 AM	9–12	308, Moscone Center	Bringing Biology to Life (p. 52)
11:00–11:30 AM	I	Willow, Marriott	COSEE Session: What's That? An Inquiry-based Approach to Squid Dissections (p. 54)
11:00 AM–12 Noon	H	Sierra A, Marriott	Grab Bag of Bio (p. 58)
11:00 AM–12 Noon	M–H	Golden Gate C3, Marriott	Nature of Science and Online Biology Simulations, Activities, and Experiments (p. 57)
11:00 AM–12 Noon	M–H	Golden Gate C3, Marriott	Interactive Learning Resources for the Grades 6–12 Genetics and Biotechnology Lab (p. 57)
11:00 AM–12 Noon	E–M	Continental 8, Hilton	A Virtual Field Trip Connecting Classrooms to Antarctic Penguins and Global Climate Change (p. 60)
11:00 AM–12 Noon	M–H	Pacific I, Marriott	Build a Skeleton (p. 61)

Schedule at a Glance Biology/Life Science

11:00 AM–12 Noon	M–C	Pacific H, Marriott	Stem Cells: Science and Ethics (p. 61)
12 Noon–1:30 PM	9–C	120, Moscone Center	Infection Detection: An ELISA Simulation for Your Classroom (p. 64)
12 Noon–1:30 PM	6–12	121, Moscone Center	Comparative Vertebrate Anatomy with Carolina's Perfect Solution® Specimens (p. 64)
12 Noon–1:30 PM	9–C	301, Moscone Center	Biology with Vernier (p. 66)
12 Noon–1:30 PM	9–C	134, Moscone Center	Teaching Gene Expression and Gene Regulation with Free Resources from the Howard Hughes Medical Institute (HHMI) (p. 65)
12 Noon–1:30 PM	9–12	125, Moscone Center	Photosynthesis and Respiration Shuffle! (p. 65)
12 Noon–1:30 PM	9–12	270/272, Moscone Center	Stronger, New, and Improved <i>Biotechnology: Science for the New Millennium</i> (p. 66)
12:30–1:30 PM	M–H	Golden Gate C1, Marriott	Inquiry-based Hands-On Activities and Demonstrations (p. 74)
12:30–1:30 PM	G	Golden Gate C3, Marriott	A Model for Inspiring and Supporting High School Biotechnology Teachers (p. 71)
12:30–1:30 PM	H–C	Continental 1, Hilton	Linking AP Stat and AP Bio with M&Ms® (p. 73)
12:30–1:30 PM	G	Pacific I, Marriott	Translating University Science Research into Classroom-friendly Curriculum Modules (p. 75)
12:30–1:30 PM	G	208/210, Moscone Center	The Role of Scripps Research Institute Scientists in the Professional Development of Science Teachers (p. 73)
12:30–1:30 PM	H	Pacific H, Marriott	Modeling Molecular Biology with Junk (p. 75)
12:30–1:30 PM	H	Golden Gate C3, Marriott	BioCONNECT (Biology and Cancer, Online Education Connecting Teens): An Innovative Interactive High School Curriculum (p. 71)
12:30–1:30 PM	M–H	Sierra A, Marriott	Old School Gel Electrophoresis (p. 72)
12:30–1:30 PM	M–C	224/226, Moscone Center	“What Do You Think?” The Use of Blogging as a Scientific Literacy Tool
12:30–1:30 PM	H	Sierra A, Marriott	Dissection: How to Make the Most of It (p. 72)
12:30–1:30 PM	E–M	Continental 8, Hilton	To Be a Fruit or Not to Be a Fruit (p. 73)
2:00–3:00 PM	Null	Continental 1, Hilton	The DNA Subway: A Fast Track to Gene Annotation and Genome Comparison (p. 84)
2:00–3:00 PM	G	Golden Gate C3, Marriott	Butterfly Bonanza (p. 85)
2:00–3:00 PM	G	Pacific H, Marriott	A Coherent Approach to Energy in High School Biology (p. 85)
2:00–3:00 PM	M	Continental 8, Hilton	Food Chains: Using Field Surveys That Give Real Numbers (p. 84)
2:00–3:30 PM	6–C	124, Moscone Center	The Wired Brain: What Research Tells Us About Attention (p. 87)
2:00–3:30 PM	7–C	300, Moscone Center	Circuits to Circuits: Building Your Own Equipment to Study Neurons (p. 88)
2:00–3:30 PM	9–C	134, Moscone Center	Free Resources from the Howard Hughes Medical Institute (HHMI) to Enhance Your Lessons on DNA and Biotechnology (p. 88)
2:00–3:30 PM	9–C	301, Moscone Center	Advanced Biology and Biotechnology with Vernier (p. 88)
2:00–3:30 PM	9–12	305, Moscone Center	Science Under Siege? Teaching Evolution in a Climate of Controversy (p. 89)
2:00–3:30 PM	9–12	121, Moscone Center	SQUID INK-UIRY: Inquiry-based Invertebrate Anatomy Through Squid Dissection (p. 87)
2:00–3:30 PM	9–12	120, Moscone Center	<i>Forensics for the Biology Laboratory</i> (p. 86)
2:00–3:30 PM	7–C	110, Moscone Center	Engage Your Hands and Minds While Building Body Systems in Clay! (p. 86)
3:30–4:30 PM	H	Golden Gate C1, Marriott	Hydroponics: A Hands-On Building Project (p. 95)
3:30–4:30 PM	E	224/226, Moscone Center	Nature Books: The Natural Way to Link Science, Math, and Literacy (p. 94)
3:30–4:30 PM	E	Golden Gate 4, Hilton	Life Cycles: The Basic Needs of Living Things (p. 95)
3:30–4:30 PM	P–M	Union Square 21, Hilton	CESI Session: Health-based Human Biology Activities for Elementary Students (p. 92)
3:30–4:30 PM	M–H	Sierra A, Marriott	Teachers, Get Out of the Way! Let Students Have Control (p. 93)
3:30–4:30 PM	H	228/230, Moscone Center	Using Open-Source Resources to Engage Students in the Biology Classroom (p. 94)
3:30–4:30 PM	E–H	Pacific I, Marriott	Building Understanding Through a Series of Connected Activities (p. 96)
3:30–4:30 PM	H	Pacific H, Marriott	Supporting Scientific Inquiry with Databases in Genetics (p. 96)
4:00–5:30 PM	9–12	134, Moscone Center	FREE Teaching Resources and Interactive Models from the Howard Hughes Medical Institute on Immunology and HIV (p. 99)
4:00–5:30 PM	3–7	132, Moscone Center	Composting and Inquiry: Hundreds of Hands-On Possibilities (p. 99)
4:00–5:30 PM	5–C	124, Moscone Center	Neuromyth Busters (p. 99)
4:00–5:30 PM	K–12	303, Moscone Center	Human and Animal Body Systems and Organs: Free Teaching Resources for K–6 and Beyond (p. 100)
5:00–6:00 PM	I	Pacific B, Marriott	NSF Follow-up Session: The Western Antarctic Ice Sheet Divide: A U.S. Deep Ice Coring Project (p. 103)
5:00–6:00 PM	E–M	Continental 8, Hilton	Animals in the Classroom (p. 105)
5:00–6:00 PM	M–H	Pacific H, Marriott	Inquiry-based Science Professional Development (p. 106)
5:00–6:00 PM	I	Golden Gate C1, Marriott	The Iceman Cometh! (p. 106)

Schedule at a Glance Biology/Life Science

5:00–6:00 PM I Continental 1, Hilton Bringing Neuroscience to the Classroom (p. 105)

Biology/Life Science: Sunday

8:00–9:00 AM E 111, Moscone Center Inside the Body: The View from Grades K–3 (p. 111)
 8:00–9:00 AM G 120, Moscone Center Coral Reefs: What Are We Finding Out About Them? (p. 113)
 8:00–9:00 AM H–C 123, Moscone Center Opening Doors: Enhancing High School Students’ Science Experiences and Opportunities Through a Summer Internship Program (p. 111)
 8:00–9:00 AM M–H 302, Moscone Center Brain Boot Camp: Empowering Student Learning (p. 114)
 8:00–9:00 AM M–H/I 300, Moscone Center Shazam: Teaching Basic Genetics Through Superheroes (p. 112)
 9:30–10:30 AM E–M 224/226, Moscone Center Exploring Food Safety from Farm to Fork (p. 117)
 9:30–10:30 AM M–H 228/230, Moscone Center Using the Exploratorium’s Microscope Imaging Station in Your Classroom (p. 117)
 9:30–10:30 AM H 302, Moscone Center Cereal 101 (p. 115)
 9:30–10:30 AM G 302, Moscone Center From Food Webs to Punnett Squares: Increasing Inquiry in Biology (p. 115)
 9:30–10:30 AM M–H 300, Moscone Center Diabetes Technology (p. 117)
 11:00 AM–12 Noon G 300, Moscone Center Model PLCs/Lesson Study/Inclusive Approaches to Improve Classroom Practices (p. 119)
 11:00 AM–12 Noon E 112, Moscone Center Fight Bac! Integrating Food Safety into Your Elementary Classroom (p. 120)
 11:00 AM–12 Noon Null 228/230, Moscone Center Personalized Medicine and Pharmacogenomics (p. 121)
 11:00 AM–12 Noon H 301, Moscone Center Understanding the Revised AP Biology Course: Curriculum, Science Practices, and Instructional Design (p. 118)
 11:00 AM–12 Noon H–C 123, Moscone Center Using Biotechnology to Measure Genetic Biodiversity (p. 118)
 11:00 AM–12 Noon HI 302, Moscone Center STEMware: “Serious Games” for Formal and Informal Settings (p. 119)

Chemistry/Physical Science: Saturday

8:00–9:00 AM G Union Square 22, Hilton Improving Chemical Demonstrations So That All Students Can Learn (p. 20)
 8:00–9:00 AM G Nob Hill D, Marriott This Is the Dawning of the Age of Aquarium (p. 28)
 8:00–9:00 AM H/S Sierra C, Marriott How the PLC Model Increased Participation in Both Chemistry and Physics (p. 24)
 8:00–9:00 AM M–H/I 220/222, Moscone Center Fun with Flames: A Safe Way to Teach Fire Sciences (p. 30)
 8:00–9:30 AM 12 125, Moscone Center What Is the Difference Between Heat and Temperature? (p. 33)
 9:30–10:30 AM M–H 220/222, Moscone Center The Composition of the Atmosphere (p. 43)
 9:30–10:30 AM E–H Continental 6, Hilton NSTA Press Session: Stop Faking It! Finally Understand CHEMISTRY BASICS So You Can Teach It (p. 44)
 10:00–11:30 AM 9–12 304, Moscone Center Promote Inquiry Using Chemistry Demonstrations (p. 52)
 10:00–11:30 AM 9–C 301, Moscone Center Chemistry with Vernier (p. 52)
 10:00–11:30 AM 6–8 110, Moscone Center A World In Motion®: Fuel Cell Challenge (p. 50)
 10:00–11:30 AM 5–12 131, Moscone Center Chemistry and the Atom: Fun with Atom-building Games! (p. 50)
 11:00–11:30 AM H Pacific C, Marriott Chemistry at NASA (p. 54)
 11:00 AM–12 Noon G Nob Hill D, Marriott Chemistry Inquiry: A Cognitive Model for Scaffolding Elementary Science Investigations (p. 61)
 11:00 AM–12 Noon H Sierra C, Marriott The Hydrogen Rocket Lab (p. 58)
 11:00 AM–12 Noon H–C Union Square 22, Hilton How Can Technology Brighten Up the Photon and Cool Down a Slug? (p. 61)
 11:00 AM–12 Noon H 228/230, Moscone Center Promoting Scientific Creativity in the Chemistry Classroom (p. 59)
 12:30–1:30 PM M–H Nob Hill D, Marriott Looking at Elements, Compounds, and Mixtures (p. 74)
 12:30–1:30 PM E–M Pacific A, Marriott AMSE Session: Exploring Critical Elements of Language Development Through Inquiry (p. 75)
 12:30–1:30 PM H Sierra C, Marriott Integration of Organic Chemistry, Spectroscopy, and Forensics into a High School Course (p. 72)
 2:00–3:00 PM M–C Nob Hill D, Marriott Introducing Students to Real-World Pharmaceutical Applications (p. 85)
 2:00–3:00 PM H Sierra C, Marriott Inquiry and Urban AP: From RET to Inquiry (p. 82)
 2:00–3:30 PM 1–8 132, Moscone Center Try Science’s Blue Ice Experiment (p. 87)
 2:00–3:30 PM 6–12 270/272, Moscone Center ScholAR Hands-On Hand Jive (p. 88)
 2:00–3:30 PM 12 125, Moscone Center One in a Million! (p. 87)

Schedule at a Glance Chemistry/Physical Science, cont.

2:00–3:30 PM	9–C	302, Moscone Center	Inquiry Chemistry with Vernier (p. 88)
2:00–3:30 PM	9–12	256, Moscone Center	Living By Chemistry: Feeling Under Pressure (p. 88)
3:30–4:30 PM	H	Sierra C, Marriott	How Students Learn in the Science Classroom with Moodle (p. 93)
3:30–4:30 PM	M–C	Nob Hill D, Marriott	Problem Based Learning and Technology Brings Molecular Bonding to Life (p. 96)
3:30–4:30 PM	H	Sierra C, Marriott	Google Docs in the Chemistry Classroom (p. 93)
4:00–5:30 PM	8–12	308, Moscone Center	Sparking More Interest with Chemistry: A Part 2 Experience (p. 100)
4:00–5:30 PM	9–12	125, Moscone Center	Teaching About Hydrogen Fuel Cells (p. 99)
4:00–5:30 PM	7–C	256, Moscone Center	Teaching with the New SPECTRONIC 200 (p. 99)
5:00–6:00 PM	M	Golden Gate 5, Hilton	A Green Clock Reaction: Assessing Eighth-Grade Students' Understanding of Variables (p. 102)
5:00–6:00 PM	H	Sierra C, Marriott	Inquiry into Argumentation in High School Chemistry (p. 103)
5:00–6:00 PM	E	Golden Gate 7, Hilton	Science Discourse Through Inquiry Conferences (p. 105)
5:00–6:00 PM	H	Nob Hill D, Marriott	Chemistry and Literacy (p. 106)
5:00–6:00 PM	H	Sierra C, Marriott	Mastery Learning Through Formative Assessments (p. 103)

Chemistry/Physical Science: Sunday

8:00–9:00 AM	H–C/S	252/254, Moscone Center	Universal Science Acceleration for All (p. 112)
8:00–9:00 AM	G	132, Moscone Center	Hands-On (Full-Body) Density and Buoyancy (p. 111)
8:00–9:00 AM	H	133, Moscone Center	Redesigning the Laboratory Investigation: Integrating Inquiry into Chemistry (p. 113)
9:30–10:30 AM	M–H	132, Moscone Center	Differentiation Toward Strong Science and Stronger Language (p. 114)
9:30–10:30 AM	H–C	236/238, Moscone Center	Explore the Chemistry Education Digital Library (p. 115)
9:30–10:30 AM	E–M	111, Moscone Center	Guided Inquiry Investigations That Promote Change in Students' Conceptual Understanding (p. 116)
11:00 AM–12 Noon	M–H	132, Moscone Center	Student Thinking About the Model of the Atom and Changes in Matter from the DIAGNOSER Formative Assessment System (p. 118)
11:00 AM–12 Noon	M–C	133, Moscone Center	Easy Optics Demonstration (p. 120)

Earth/Space Science: Saturday

8:00–9:00 AM	E–M	Continental 7, Hilton	Inquiry Earth Science? What Is It and How Do I Begin? (p. 26)
8:00–9:00 AM	G	Walnut, Marriott	Advancing Science Literacy Through Astronomy Using Galileo's Observations and Hands-On Activities (p. 29)
8:00–9:00 AM	M–H	Yerba Buena 14, Marriott	The Latest on NASA's New Rockets! (p. 29)
8:00–9:00 AM	M–H	Pacific C, Marriott	NASA: Cookie Cutter Astrophysics (p. 22)
8:00–9:00 AM	G	Yerba Buena 8, Marriott	What's Up? Classroom Activities from the Association for Astronomy Education: Part I—Sun, Earth, and Planets (p. 29)
8:00–9:00 AM	P	Golden Gate 7, Hilton	BLOCKS Presents: Let's Talk Dirt! (p. 18)
8:00–9:00 AM	Null	Golden Gate 1, Hilton	Mars Education Student Data Teams (MESDT) (p. 18)
8:00–9:00 AM	G	Sierra B, Marriott	Explore Earth Systems with Scaffolded Inquiry (p. 28)
8:00–9:30 AM	10	304, Moscone Center	Geotagging and Mapping Your Field Data (p. 35)
9:00–10:00 AM	I	Willow, Marriott	COSEE Session: Linking the Ocean to the Classroom (p. 39)
9:30–10:30 AM	H–C	Golden Gate 1, Hilton	Modeling Microclimate in an Introductory Earth System Science Course (p. 40)
9:30–10:30 AM	E–M	Continental 7, Hilton	Seeing Impression and Expression in Fossils, Literacy, and Ourselves (p. 44)
9:30–10:30 AM	M–H	Walnut, Marriott	NASA: Survival in a Galactic Wilderness (p. 46)
9:30–10:30 AM	M–C	232/234, Moscone Center	Virtual Labs in the Earth Sciences: Melting Ice, Warming Climate, and Ballooning Through the Stratosphere (p. 46)
9:30–10:30 AM	M–C	Yosemite C, Hilton	Teaching the Essential Principles of Climate Literacy in Middle and High School (p. 41)
9:30–10:30 AM	G	Yerba Buena 8, Marriott	What's Up? Classroom Activities from the Association for Astronomy Education: Part II—Beyond the Solar System (p. 46)
9:30–10:30 AM	I	Sierra B, Marriott	Ice Core Records: From Volcanoes to Stars (p. 45)
9:30–10:30 AM	E–H	Mtg Rm Hall D, Moscone	NESTA Session: National Earth Science Teachers Association Earthquake Hazards and Seismology Share-a-Thon (p. 47)

Schedule at a Glance Earth/Space Science, cont.

9:30–10:30 AM	9–12	307, Moscone Center	NEW Astronomy Textbook Written Specifically for High School Students (p. 48)
10:00–11:30 AM	5–12	256, Moscone Center	<i>The Layered Earth</i> : 3-D Interactive Geology Curriculum (p. 51)
11:00 AM–12 Noon	I	Golden Gate C2, Marriott	SYM-2 Follow-up Session: Climate's Canary in a Coal Mine: Arctic Sea Ice (p. 57)
11:00 AM–12 Noon	I	Pacific B, Marriott	NSF Follow-up Session: Under the Ice: Studying One of the Last Unexplored Aquatic Environments on Earth (p. 57)
11:00 AM–12 Noon	G	Yerba Buena 14, Marriott	Hello, Mercury! (p. 62)
11:00 AM–12 Noon	Null	220/222, Moscone Center	Fossils: Where Biology and Geology Intersect (p. 59)
11:00 AM–12 Noon	G	Walnut, Marriott	Exploring Mars in Three Dimensions (p. 61)
11:00 AM–12 Noon	E–M	Continental 7, Hilton	What's Up with Planet Earth: Exploring Global Issues (p. 60)
11:30 AM–12:30 PM	I	Mtg Rm Hall D, Moscone	NESTA Session: Advances in Earth and Space Science Lecture 1: Earthquake Forecasting In California (p. 63)
12 Noon–1:30 PM	5–12	256, Moscone Center	<i>The Layered Earth</i> : 3-D Interactive Geology Curriculum (p. 66)
12:30–1:30 PM	I	Mtg Rm Hall D, Moscone	NESTA Session: Advances in Earth and Space Science Lecture 2: Imaging the Earth Beneath Our Feet—Pictures of the Earthquake-producing Machinery in the Western U.S. and Alaska (p. 69)
12:30–1:30 PM	9–12	307, Moscone Center	<i>EarthComm</i> —New Edition! (p. 76)
12:30–1:30 PM	M–H/I	Yerba Buena 14, Marriott	Real-Time Observations in Radio Astronomy (p. 75)
12:30–1:30 PM	M–H	Walnut, Marriott	Cosmology and Our Universe: Why Dark Energy and Is It Real? (p. 75)
12:30–1:30 PM	M–H	232/234, Moscone Center	Cyber Enabled Earth Exploration (CE3) Science Curriculum Project (p. 73)
12:30–1:30 PM	I	Pacific C, Marriott	Tracking Water from Space: Classroom Activities Using a NASA Global Data Set (p. 72)
12:30–1:30 PM	G	Sierra B, Marriott	Rocky Road: Informal Science Lessons Lead to Earth Science Inquiry (p. 75)
12:30–1:30 PM	E–M	Continental 7, Hilton	Whirling Planets and Stars: Using a Kinesthetic Approach to Understanding the Seasons (p. 73)
12:30–1:30 PM	E	220/222, Moscone Center	Taking Earth Science One Step Further: Harnessing Sun and Wind Energy (p. 76)
1:30–2:30 PM	I	Mtg Rm Hall D, Moscone	NESTA Session: Advances in Earth and Space Science Lecture 3: The Tortoise and the Hare—A Tale of Faults That Creep (p. 77)
2:00–3:00 PM	I	Pacific B, Marriott	NSF Follow-up Session: Warming Oceans, Rising Sea Levels, and the West Antarctic Ice Sheet (p. 82)
2:00–3:00 PM	H	Golden Gate C1, Marriott	MONS: North Carolina High School Students and Space Science Research (p. 81)
2:00–3:00 PM	H	Yerba Buena 14, Marriott	Extra! Extra! Read All About the Universe! (p. 85)
2:00–3:00 PM	M–H	232/234, Moscone Center	Investigating Supernova Remnants (p. 86)
2:00–3:00 PM	M–H	Pacific C, Marriott	Look Out for Asteroids! (p. 82)
2:00–3:00 PM	M–H	Pacific C, Marriott	WISE Mission: We Found Another Asteroid! (p. 82)
2:00–3:00 PM	E–H	224/226, Moscone Center	Building Student Science Inquiry: Authoring Your Own Science Literature Book (p. 83)
2:00–3:00 PM	H–C	Golden Gate C1, Marriott	Citizen Science: setiQuest (p. 81)
2:00–3:30 PM	10	304, Moscone Center	Analyzing Science Data with Web GIS (p. 89)
2:30–3:00 PM	M–H	Willow, Marriott	COSEE Session: Linking Our Ocean and Climate Through Innovative Learning Connections, Part 2 (p. 89)
3:30–4:30 PM	M–H	Walnut, Marriott	NASA: Size and Scale of the Universe (p. 96)
3:30–4:30 PM	M–H/I	Sierra B, Marriott	Using EARTH (Education and Research: Testing Hypotheses) Activities in the Classroom (p. 96)
3:30–4:30 PM	M–C	Pacific C, Marriott	Global Climate: A Planetary Science Perspective (p. 93)
3:30–5:00 PM	G	Mtg Rm Hall D, Moscone	NESTA Session: National Earth Science Teachers Association Rock and Mineral Raffle (p. 97)
4:00–5:30 PM	5–C	300, Moscone Center	Build a Globe and Add Another Dimension to Earth Science Learning (p. 100)
4:00–5:30 PM	10	304, Moscone Center	Geotagging and Mapping Your Field Data (p. 100)
4:00–5:30 PM	7–C	309, Moscone Center	Earthquake Prediction, Dinosaur Death, and Other Discoveries from the Deep Sea! (p. 100)
5:00–6:00 PM	G	Golden Gate C2, Marriott	NOAA Follow-up Session: NOAA Climate Change Here and Now: Impacts on the West (Drought and Severe Storms) (p. 102)
5:00–6:00 PM	M–C	Pacific C, Marriott	NASA: Exploring the Mysteries in a Supernova Explosion (p. 103)
5:00–6:00 PM	G	220/222, Moscone Center	The Ups and Downs of Convection (p. 107)
5:00–6:00 PM	G	Walnut, Marriott	Why Study Clouds? (p. 106)
5:00–6:00 PM	G	Sierra B, Marriott	Engaging Students in Understanding Earth System Processes (p. 106)

Schedule at a Glance Earth/Space Science, cont.

5:30–6:00 PM	M–H	Sierra H, Marriott	Using Geologic Formations Near Your School to Interpret the Stratigraphic Column (p. 107)
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Earth/Space Science: Sunday

8:00–9:00 AM	M	122, Moscone Center	Welcome to Earthquake Country: California as a Natural Laboratory (p. 111)
8:00–9:00 AM	G	307, Moscone Center	Customizing Science Instruction with Educational Digital Libraries (p. 112)
8:00–9:00 AM	E–H	304, Moscone Center	Use GAVRT to Be a Part of the NASA Mission Juno (p. 114)
8:00–9:00 AM	H	303, Moscone Center	NASA: Evolution of the Universe (p. 112)
9:30–10:30 AM	G	307, Moscone Center	The Flying Gizmo Show (p. 116)
9:30–10:30 AM	M–H	306, Moscone Center	Promoting Academic Language Through Classroom Dialogue (p. 117)
9:30–10:30 AM	I	304, Moscone Center	Dancing Demonstrations of Space Science (p. 116)
9:30–10:30 AM	M–H/I	303, Moscone Center	NASA: Inquiry Activities for Learning about Light and the EM Spectrum and Multi-wavelength Astronomy (p. 115)
9:30–10:30 AM	Null	122, Moscone Center	Solar System in the Round (p. 116)
11:00 AM–12 Noon	M–H	304, Moscone Center	Galileo and Spots on the Sun: Measuring the Period of Rotation of the Sun (p. 121)
11:00 AM–12 Noon	E–M	122, Moscone Center	Building a Solar Oven: A Data-driven Inquiry Investigation (p. 120)
11:00 AM–12 Noon	I	305, Moscone Center	NASA's Online Professional Development: Bringing Mars to Earth! (p. 119)
11:00 AM–12 Noon	M–H	303, Moscone Center	Astrobiology Comes to Life (p. 121)
11:00 AM–12 Noon	E–H	306, Moscone Center	Low on Materials...Heavy on Impact: Geology Lessons That Rock! (p. 121)
11:00 AM–12 Noon	G	307, Moscone Center	Ocean Acidification: A 5E Lesson That Transforms Knowledge into Action (p. 119)

Environmental Science: Saturday

8:00–9:00 AM	G	Pacific F, Marriott	Fields of Dreams: A Teacher's Guide for Connecting Students to Their Earth Through Their Community (p. 22)
8:00–9:00 AM	E–M	224/226, Moscone Center	On the Prairie: Ecological Approaches to Language and Mathematics (p. 30)
8:00–9:00 AM	I	Sierra H, Marriott	Jump Right In...The Water's Warm (and Warming)! Educational Partnerships and Projects from the NOAA National Oceanographic Data Center (p. 24)
8:00–9:00 AM	M–H	Pacific J, Marriott	Using Data from Experimentation in the Service of Formative Assessment (p. 22)
8:00–9:00 AM	M	Golden Gate 5, Hilton	Science Doesn't End with the Bell (p. 18)
8:00–9:00 AM	E–H	Sierra J, Marriott	Lake St. Clair: Use or Abuse? (p. 28)
8:00–9:00 AM	G	Golden Gate C2, Marriott	SYM-2 Follow-up Session: EPA Climate Change Action Updates (p. 20)
8:00–9:00 AM	9–12	307, Moscone Center	Investigations in Environmental Science: A Case-based Approach (p. 30)
8:00–9:00 AM	G	Pacific E, Marriott	ASTC Session: Museum Educators and Science Interconnections (p. 22)
8:00–9:30 AM	4	300, Moscone Center	Stream Ecology: Slimy Leaves for Clean Streams (p. 35)
8:00–9:30 AM	7–C	302, Moscone Center	Water Quality with Vernier (p. 35)
9:30–10:30 AM	M–H/I	Pacific B, Marriott	NSF Follow-up Session: Science Is Cool! Using Polar Science Resources in the Classroom (p. 45)
9:30–10:30 AM	G	Golden Gate C2, Marriott	SYM-2 Follow-up Session: Climate Toolkits: New Tools for Educators (p. 42)
9:30–10:30 AM	G	Sierra J, Marriott	Teaching for Freshwater Sustainability (p. 46)
9:30–10:30 AM	G	Pacific J, Marriott	Save the Frogs Day: April 29, 2011 (p. 42)
9:30–10:30 AM	E–M	Golden Gate 5, Hilton	Plants—From Seed to Seed (p. 40)
9:30–10:30 AM	M–H	Pacific F, Marriott	Which Technology and Why? Selecting Geospatial and Web 2.0 Tools for Environmental Science Learning (p. 42)
9:30–10:30 AM	I	Sierra H, Marriott	Got Funding? Grant Opportunities to Get Your Students Outdoors (p. 43)
9:30–10:30 AM	G	Pacific F, Marriott	Inquiry, Technology, and the Exploration of Environmental Issues (p. 42)
10:00–11:30 AM	7–C	302, Moscone Center	Environmental Science with Vernier (p. 52)
10:00–11:30 AM	4	300, Moscone Center	Stream Ecology: Slimy Leaves for Clean Streams (p. 35)
10:00–11:30 AM	9–12	121, Moscone Center	Engage Student Inquiry with Carolina's Environmental Science Labs (p. 50)
11:00 AM–12 Noon	M	Golden Gate 5, Hilton	Bugs, Bugs, Bugs: Using Digital Microscopes to Explore Water Ecology (p. 56)
11:00 AM–12 Noon	G	Pacific F, Marriott	Science On a Sphere (SOS): Help in Visualizing Global Systems (p. 58)
11:00 AM–12 Noon	M–H/I	Sierra J, Marriott	<i>Global Connections: Forests of the World</i> (p. 61)
11:00 AM–12 Noon	G	Pacific J, Marriott	Students and Teachers Restoring A Watershed (STRAW) (p. 58)

Schedule at a Glance Environmental Science, cont.

11:00 AM–12 Noon	G	Sierra H, Marriott	Bring the Ocean into Your Classroom with National Marine Sanctuaries (p. 58)
12 Noon–1:30 PM	K–12	300, Moscone Center	Teaching About the Environment: Resources for K–12 Classrooms (p. 66)
12 Noon–1:30 PM	5–C	110, Moscone Center	Do You Know What You Are Breathing? (p. 64)
12:30–1:30 PM	I	Pacific B, Marriott	NSF Follow-up Session: How Are Arctic Landscapes Responding to Permafrost Degradation Under a Warming Climate? (p. 71)
12:30–1:30 PM	G	Pacific F, Marriott	From the Mountains to the Estuary...from the School Yards to the Bay (p. 72)
12:30–1:30 PM	E–M	Sierra J, Marriott	Teaching Energy Conservation with an Emphasis on Biofuels (p. 75)
12:30–1:30 PM	G	Pacific J, Marriott	Eco-Schools USA Climate Change Connections (p. 72)
12:30–1:30 PM	E–M	Golden Gate 5, Hilton	Earth and Climate Science Teacher Academy for 21st- Century Learners (ECSTATIC) (p. 70)
1:30–2:30 PM	M–H/I	Willow, Marriott	COSEE Session: Linking Our Ocean and Climate Through Innovative Learning Connections: Part 1 (p. 77)
2:00–2:30 PM	G	262, Moscone Center	Supporting Strategies to Make Science More Accessible to ELLs (p. 79)
2:00–3:00 PM	G	Sierra A, Marriott	Climate Change in My School Yard? (p. 82)
2:00–3:00 PM	G	Sierra A, Marriott	Urban Youth and Global Climate Change: A Partnership Between The Columbus Zoo and Columbus City Schools (p. 82)
2:00–3:00 PM	Null	220/222, Moscone Center	We're All in This Together: Watersheds and You! (p. 83)
2:00–3:00 PM	M–H	Pacific J, Marriott	Engaging Students in Scientific Inquiry Using Web 2.0 Technologies and Social Collaboration (p. 82)
2:00–3:00 PM	M–H	Pacific F, Marriott	Facing the Future: Education for Sustainability Through Service Learning (p. 82)
2:00–3:00 PM	H	Sierra B, Marriott	The GLOBE Carbon Cycle Project: Using a Systems Approach to Explore Carbon, Ecosystems, and Climate (p. 85)
2:00–3:00 PM	G	Golden Gate C2, Marr.	NOAA Follow-up Session: Climate Change Impacts to the North-Central California Coast (p. 81)
2:00–3:00 PM	H–C	Golden Gate 5, Hilton	Forestry Field Studies for High School Students (p. 80)
2:00–3:30 PM	K–5	309, Moscone Center	Beyond the Storybook (p. 89)
3:00–3:30 PM	G	Willow, Marriott	COSEE Session: Ocean Observing Systems—Benefits for Teachers and Their Students (p. 89)
3:30–4:30 PM	G	220/222, Moscone Center	Basic Weather (p. 97)
3:30–4:30 PM	M–H	Sierra J, Marriott	Rachel Carson's <i>Silent Spring</i> : A Book That Changed the World and the Classroom (p. 96)
3:30–4:30 PM	Null	Golden Gate 5, Hilton	Queen Conch Research Refuge Ranch (p. 91)
3:30–4:30 PM	M–H	Pacific F, Marriott	Connecting Students, Teachers, and Researchers Globally in Polar Science (p. 93)
3:30–4:30 PM	I	Pacific B, Marriott	NSF Follow-up Session: Icy Life on Earth and Beyond? (p. 92)
4:00–5:30 PM	5–C	110, Moscone Center	EcoTeach and Veragua Rain Forest: Biodiversity of Costa Rica (p. 99)
5:00–6:00 PM	G	Nob Hill C, Marriott	Go Green: An Initiative Taken by High School Students Looking for Alternative Energy Sources (p. 102)
5:00–6:00 PM	I	Pacific F, Marriott	Digital Earth Science Technology with Free Software: Overlapping Google Earth, Glogster, and Wiki (p. 103)
5:00–6:00 PM	H	Sierra A, Marriott	Rethinking a High School Science Sequence: Development of an Introductory Ecology/Environmental Science Course (p. 103)
5:00–6:00 PM	M–H	Pacific J, Marriott	Online EPA Tools for Climate Change and Air Quality Education (p. 103)

Environmental Science: Sunday

8:00–9:00 AM	M–H	308, Moscone Center	Play It Cool with Junior Climate Stewards (p. 114)
8:00–9:00 AM	M–H/I	309, Moscone Center	Project Based Learning: A Showcase of Success (p. 112)
9:30–10:30 AM	H	305, Moscone Center	NASA: High School Professional Learning Communities About Climate Change (p. 117)
9:30–10:30 AM	E–H	308, Moscone Center	Timing Is Everything! Getting Students Involved in Climate Change Research with Project BudBurst (p. 117)
9:30–10:30 AM	M–H	309, Moscone Center	Build a Solar House: A Student-constructed Model (p. 116)
9:30–10:30 AM	M–H	309, Moscone Center	Observing a Pond's Seasonal Changes to Learn about Climate Change (p. 116)
11:00 AM–12 Noon	E–M	114, Moscone Center	Designing Lessons to Impact Environmental Identity Development in Children (p. 120)
11:00 AM–12 Noon	M–H	308, Moscone Center	Polar Science from the Field to Your Classroom (p. 121)
11:00 AM–12 Noon	H	309, Moscone Center	Survivor: Global Society from the Scientific Perspective (p. 119)

Schedule at a Glance Integrated/General Science

Integrated/General: Saturday

8:00–9:00 AM	K–12	274/276, Moscone Center	Show Me the Money: Learn the Tips and Tricks to Grant Funding (p. 30)
8:00–9:00 AM	C	Union Square 14, Hilton	Starting an NSTA Student Chapter: Faculty and Student Perspectives (p. 19)
8:00–9:00 AM	Null	Union Square 19/20, Hilt.	Authentic Science Teaching: The Electronic Curriculum (p. 20)
8:00–9:00 AM	M–C	112, Moscone Center	Using Socratic Seminars in Science (p. 30)
8:00–9:00 AM	M	Union Square 3/4, Hilton	Send Inquiry Skills Soaring with Vinegar and Baking Soda Rockets (p. 19)
8:00–9:00 AM	E–H	113, Moscone Center	Sticky Science Vocabulary Strategies (p. 24)
8:00–9:00 AM	G	232/234, Moscone Center	Bring Your Teaching into the 21st Century with Web 2.0 Tools and Other Technologies (p. 24)
8:00–9:00 AM	E–M	Yosemite C, Hilton	Teaching Causal Complexity in Science: A Professional Development Website for Teachers (p. 20)
8:00–9:00 AM	P–E	Golden Gate 3, Hilton	You Can't Catch ME! I'm the Gingerbread Man! Developing Science-based Units Using Children's Literature (p. 27)
8:00–9:00 AM	M–H	Pacific A, Marriott	DuPont Session: DuPont Presents—Driving Science (p. 28)
8:00–9:00 AM	M–H	Continental 9, Hilton	NSTA Press Session: <i>Predict, Observe, Explain: Activities Enhancing Scientific Understanding</i> (p. 26)
8:00–9:00 AM	M–C	250, Moscone Center	Using Inquiry with Web-based Tools to Teach Science Meaningfully (p. 26)
8:00–9:00 AM	G	Golden Gate A, Marriott	Captivate Your Students with Magic! (p. 28)
8:00–9:00 AM	E–M	Union Square 13, Hilton	Inquiry-based Demonstrations to Grab Students' Interest and Promote Scientific Thinking (p. 19)
8:00–9:00 AM	P–E	Golden Gate 2, Hilton	Small Children and Inquiry-based Science: A Reggio Emilia Approach (p. 18)
8:00–9:00 AM	M–H	Sierra E, Marriott	Using Literature to Teach Experimental Design in High School (p. 24)
8:00–9:00 AM	G	262, Moscone Center	Teaching Renewable Energy Concepts in Any Science Classroom (p. 26)
8:00–9:00 AM	P–E	Golden Gate 6, Hilton	Using Science Notebooks to Unlock Student Thinking (p. 27)
8:00–9:00 AM	G	250, Moscone Center	Student Teachers' Use of Web 2.0 Tools: Learning to Learn and Learning to Teach (p. 26)
8:00–9:00 AM	G	Union Square 21, Hilton	Science Notebooks: A Journey of Thinking and Understanding (p. 20)
8:00–9:00 AM	M–C	200, Moscone Center	Explore Earth Through Sand! (p. 24)
8:00–9:00 AM	G	212, Moscone Center	Measuring Up: Using Measurement to Build Conceptual Knowledge (p. 30)
8:00–9:00 AM	G	Union Square 17/18, Hilt.	BaySci: A District Science Reform Model (p. 20)
8:00–9:00 AM	I	Willow, Marriott	COSEE Session: The Role of Discourse as Students Make Meaning of Science Concepts (p. 29)
8:00–9:00 AM	E–M	Golden Gate 4, Hilton	It's All About Carbon: An Interactive Role Play (p. 27)
8:00–9:00 AM	E–H	111, Moscone Center	Using Technology in Experiential Learning (p. 30)
8:00–9:00 AM	M	Union Square 19/20, Hilt.	Technology in the Classroom: What Works and What Just Makes You Do More Work (p. 20)
8:00–9:00 AM	G	Union Square 25, Hilton	Professional Development and Improved Instruction Through Lesson Study (p. 20)
8:00–9:00 AM	M	Yosemite C, Hilton	Conceptual Change (p. 20)
8:00–9:00 AM	E–H	200, Moscone Center	En-gauging Weather (p. 24)
8:00–9:00 AM	E–H	Golden Gate 8, Hilton	Strategies for Teaching Scientific Thinking (p. 27)
8:00–9:00 AM	G	208/210, Moscone Center	Teaching Science to Students with Significant Cognitive Disabilities: Content and Methods for Instruction (p. 24)
8:00–9:30 AM	1–8	309, Moscone Center	ELL Strategies for Making Science Content Comprehensible (p. 36)
8:00–9:30 AM	K–5	122, Moscone Center	Don't Forget the "M" in STEM: A Focus on Literacy in the Math Classroom (p. 33)
8:00–9:30 AM	6–8	308, Moscone Center	Teaching Middle School Science with a Digital Curriculum (p. 35)
8:00–9:30 AM	6–C	310, Moscone Center	Best Practices Implementing Online Science Labs Both In and Out of the Classroom (p. 36)
8:00–9:30 AM	K–12	206, Moscone Center	Raising Test Scores with Discovery Education Science (p. 34)
8:00–9:30 AM	7–12	236/238, Moscone Center	Art vs. Science: The Role of Science in the Wine-making Process (p. 34)
8:00–9:30 AM	K–12	202/204, Moscone Center	SMART Technologies and the Science Classroom (p. 34)
8:00–9:30 AM	4–9	124, Moscone Center	The JASON Project, Immersion Learning, and Nautilus Live: Exploration-based Learning (p. 33)
8:00–9:30 AM	K–12	303, Moscone Center	Building Science Vocabulary with Dinah Zike's Visual Kinesthetic Vocabulary® and Foldables® (p. 35)

Schedule at a Glance Integrated/General Science

8:00–9:30 AM	7–C	110, Moscone Center	Massive Reactions (p. 30)
8:00–10:00 AM	K–6	130, Moscone Center	Using Science Notebooks with FOSS K–6 (p. 36)
8:30–10:00 AM	G	104, Moscone Center	The Educational Forum: Listening to America (p. 38)
9:30–10:30 AM	G	102, Moscone Center	How to Cure Safety Stress and Legal Sweats! (p. 39)
9:30–10:30 AM	G	Union Square 14, Hilton	Before and After Retirement: Practicalities and Possibilities (p. 41)
9:30–10:30 AM	P–E	Golden Gate 3, Hilton	What Does STEM Look Like at the Elementary Level? (p. 44)
9:30–10:30 AM	G	Pacific E, Marriott	ASTC Session: CAISE: What We Know About Learning Science in Informal Environments (p. 42)
9:30–10:30 AM	K–6	274/276, Moscone Center	Using Interactive Classroom Technologies to Advance STEM Learning for Elementary Students (p. 48)
9:30–10:30 AM	G	250, Moscone Center	What’s Your Media Literacy IQ?: How to Use Web-based Videos and other Internet Resources to Bring Science to Life in Your Classroom (p. 44)
9:30–10:30 AM	G	111, Moscone Center	Why Aren’t They Getting It? (p. 46)
9:30–10:30 AM	EU	Union Square 19/20, Hilt.	Science Notebooks: Transforming Science and Writing (p. 41)
9:30–10:30 AM	G	Union Square 25, Hilton	School Teams, School Change: Developing Leadership for Science Instruction (p. 41)
9:30–10:30 AM	E–H	112, Moscone Center	It’s Not the Data, It’s the Evidence (p. 46)
9:30–10:30 AM	G	Union Square 17/18, Hilt.	Bridging the Gap: Building Successful Partnerships Between Formal and Informal Learning Institutions (p. 41)
9:30–10:30 AM	E	Golden Gate 2, Hilton	STEM on Camera: Using Handheld Digital Video Cameras to Enhance Teaching and Learning (p. 40)
9:30–10:30 AM	P–E	Golden Gate 6, Hilton	KWL+ 4-R’s and Inquiry = Science Success (p. 45)
9:30–10:30 AM	G	208/210, Moscone Center	Situated Learning for Teachers: A Model for Building Science Capacity in a New Brunswick School District (p. 43)
9:30–10:30 AM	H	Sierra I, Marriott	Lab Notebook Confidential (p. 43)
9:30–10:30 AM	E	Golden Gate 2, Hilton	Attracting Testable Questions: Student Scientists Lead the Way! (p. 40)
9:30–10:30 AM	G	Continental 9, Hilton	NSTA Press Session: <i>Girls in Science—A Framework for Action</i> (p. 40)
9:30–10:30 AM	G	Golden Gate 8, Hilton	Immersive Experiences in Science and Engineering: Emphasizing Inquiry Skills for K–8 Teachers (p. 40)
9:30–10:30 AM	G	262, Moscone Center	Science and Literacy and Language Learning: Developing Academic and Higher-Order Thinking Skills Among Deaf English Language Learners (p. 44)
9:30–10:30 AM	M–H	Nob Hill B, Marriott	Interactive Science Notebooks: A Resource for Developing Understanding (p. 45)
9:30–10:30 AM	G	224/226, Moscone Center	Integrating Science and Literature: Promoting a Bright Future for Every Child (p. 44)
9:30–10:30 AM	P–M	Union Square 3/4, Hilton	Do Ya Dig It? Building a Passion for Teaching Earth Systems Science (p. 40)
9:30–10:30 AM	M–H	Sierra I, Marriott	Podcasting Your Classroom (p. 43)
9:30–10:30 AM	G	Yerba Buena 14, Marriott	Taking the Cool Demonstration to the Next Step to Develop Process Skills (p. 46)
9:30–10:30 AM	H/S	Yerba Buena 15, Marriott	Supporting Standards-based Inquiry Learning (p. 46)
9:30–10:30 AM	H–C	Union Square 22, Hilton	Making a Connection: Scientific Research and K–12 Students (p. 41)
9:30–10:30 AM	M–H	228/230, Moscone Center	Incorporating Problem Based Learning and Creativity in Integrated Science Classrooms: An International Perspective (p. 46)
9:30–10:30 AM	G	212, Moscone Center	Outside the Classroom Walls: Creating a Backpack Lesson to Expand Student Learning (p. 46)
9:30–10:30 AM	G	200, Moscone Center	Integrating Inquiry and Science Notebooks (p. 43)
9:30–10:30 AM	I	Union Square 17/18, Hilt.	What’s Going On at the Zoo? (p. 41)
9:30–10:30 AM	G	Union Square 21, Hilton	NMLSTA Session: Finding Success with Grant Proposal Writing: Basic First Steps (p. 41)
9:30–10:30 AM	H–C	Union Square 13, Hilton	Science in Motion Drives Discovery (p. 40)
9:30–10:30 AM	G	Sierra H, Marriott	No Teacher Left Inside: From the Field into the Classroom with the NOAA Teacher at Sea and PolarTREC Teacher Research Experience Programs (p. 43)
9:30–10:30 AM	G	113, Moscone Center	Remote Online Laboratories: The Science Labs of the Future (p. 43)
9:30–11:30 AM	E–M	Continental 5, Hilton	CESI Session: Council for Elementary Science International Share-a-Thon (p. 48)
10:00–11:00 AM	I	Willow, Marriott	COSEE Session: Satellites, Sounds, and Storms: Using Satellite Data and Podcasts to Study Coastal Storms (p. 49)
10:00–11:30 AM	G	310, Moscone Center	Combining Science and Culture: Conservation and Education in the Amazon and Tibet (p. 49)

Schedule at a Glance Integrated/General Science, cont.

10:00–11:30 AM	K–5	206, Moscone Center	Explore the Blue Near You: Bring Critical Aquatic Issues to Life with New Resources! (p. 51)
10:00–11:30 AM	4	202/204, Moscone Center	A Systematic Approach to Academic Language (p. 51)
10:00–11:30 AM	6–C	123, Moscone Center	Computational Thinking (p. 50)
10:00–11:30 AM	K–12	303, Moscone Center	Using Dinah Zike’s Notebook Foldables® for Lasting Understanding (p. 52)
10:00–11:30 AM	4–9	124, Moscone Center	Integrating Video Games and Core Curriculum (p. 50)
10:00–11:30 AM	6–8	133, Moscone Center	Rise Above the Storm: Introducing STEM in Middle School (p. 51)
10:00–11:30 AM	9–12	132, Moscone Center	Rise Above the Storm: Introducing STEM in High School (p. 51)
10:00–11:30 AM	K–5	122, Moscone Center	Don’t Forget the “M” in STEM: A Focus on RTI in the Math Classroom (p. 50)
10:00–11:30 AM	6–8	305, Moscone Center	Teaching Science Through Real-World Events (p. 52)
10:30 AM–12 Noon	G	103, Moscone Center	Science is Sexy! (p. 53)
10:30 AM–12 Noon	G	104, Moscone Center	Roaming Plantets, Falling Apples, Bending Light, Whirling Galaxies (p. 53)
10:30 AM–12 Noon	7–12	236/238, Moscone Center	Art vs. Science: The Role of Science in the Wine-making Process (p. 54)
11:00 AM–12 Noon	G	102, Moscone Center	<i>Dr. Art’s Planet Earth Show</i> (p. 54)
11:00 AM–12 Noon	H	232/234, Moscone	NSTA Avenue Session: Spirit of Innovation Teacher Orientation (p. 59)
11:00 AM–12 Noon	6–8	307, Moscone Center	Teaching STEM in the 21st Century: Integrating Project-based Curricula and Probeware in Your Everyday Lessons (p. 62)
11:00 AM–12 Noon	7–12	274/276, Moscone Center	Using Interactive Classroom Technologies to Advance STEM Learning for Secondary Students (p. 62)
11:00 AM–12 Noon	G	Pacific E, Marriott	ASTC Session: Building Skills for Raising Girls’ Interest in Science and Engineering (p. 58)
11:00 AM–12 Noon	M	Union Square 13, Hilton	Claim, Evidence, and Reasoning: Supporting Middle School Students in Evidence-based Scientific Explanations (p. 56)
11:00 AM–12 Noon	M–H	Golden Gate A, Marriott	Get Moving! Kinesthetic Tools for Excellence in Middle School Science (p. 61)
11:00 AM–12 Noon	C	Union Square 14, Hilton	Educating Beyond the Classroom: Community Service Projects (p. 56)
11:00 AM–12 Noon	G	212, Moscone Center	Improving Our Students’ Graphing and Graph Interpretation Practices (p. 62)
11:00 AM–12 Noon	M	Yosemite C, Hilton	Wikis 101: Bringing Collaborative Technology into the Classroom (p. 57)
11:00 AM–12 Noon	G	200, Moscone Center	The Multiple Dimensions of Scientific Inquiry in the PreK–12 School Setting (p. 59)
11:00 AM–12 Noon	G	250, Moscone Center	Collaborative Learning in the 21st Century: The Science of Simulation Meets Social Networking (p. 59)
11:00 AM–12 Noon	G	224/226, Moscone Center	Integrating Science Literacy and English Literacy in the K–12 Science Classroom: Benefits for Deaf, Hard of Hearing, and Hearing Students (p. 59)
11:00 AM–12 Noon	M–C	112, Moscone Center	Scientific Literacy and Technological Change (p. 62)
11:00 AM–12 Noon	G	Union Square 17/18, Hilt.	The Importance of Effective Communication Between Teachers and Parents (p. 56)
11:00 AM–12 Noon	G	Union Square 25, Hilton	If You Build It (Well), They Will Come (and Stay)! Designing and Facilitating a Leadership Academy for Science Instruction (p. 57)
11:00 AM–12 Noon	M–H	Sierra E, Marriott	Integrating Digital Images and Video in the Science Classroom (p. 58)
11:00 AM–12 Noon	G	111, Moscone Center	Getting Started with Farm to School Projects: Teaching Across the Curriculum and Fighting Childhood Obesity (p. 62)
11:00 AM–12 Noon	G	250, Moscone Center	From Florida to Oregon: A Collaborative Effort to Teach Students about Social Networking, Birds, and the Scientific Method via the BirdSleuth Program and Free Online Wikispaces. (p. 60)
11:00 AM–12 Noon	MI	208/210, Moscone Center	Mentoring for Meaning (M4M) in Math and Science: A Journey into Inquiry, Collaborative Practice, and Instructional Leadership (p. 59)
11:00 AM–12 Noon	G	Union Square 3/4, Hilton	How Can I Apply Research to My Science Classroom? (p. 56)
11:00 AM–12 Noon	G	262, Moscone Center	Climate Change Science as a Vehicle for Teaching a Foreign Language (p. 60)
11:00 AM–12 Noon	G	Yerba Buena 8, Marriott	K–12 Multicultural Share-a-Thon (p. 58)
11:00 AM–12 Noon	H	Sierra I, Marriott	It’s About Discovery (p. 58)
11:00 AM–12 Noon	M	Yosemite C, Hilton	Digital Natives (p. 57)
11:00 AM–12 Noon	Null	Golden Gate 8, Hilton	Transforming Undergraduate Education for Science Teaching in the Hands-On Lab (p. 56)
11:00 AM–12 Noon	E–M	Union Square 19/20, Hilt.	STARBASE Montana to Infinity and Beyond: Exciting STEM Lessons Taught with Humor and Multimedia (p. 56)
11:00 AM–12 Noon	G	Continental 9, Hilton	NSTA Press Session: Using the National Science Facilities Standards to Plan and Design Your School Science Classroom/Laboratory (p. 60)

Schedule at a Glance Integrated/General Science, cont.

11:00 AM–12 Noon	H	Yerba Buena 15, Marriott	College Readiness—aligned Lab Experiences (p. 62)
11:00 AM–12 Noon	G	Union Square 21, Hilton	NMLSTA Session: Win Big! Write a Grant (p. 56)
11:00 AM–12 Noon	E	Golden Gate 6, Hilton	Young Learners Meet the Scientific Process (p. 60)
11:00 AM–12 Noon	E–H	113, Moscone Center	The Internet Science and Technology Fair: 2011 Update (p. 59)
11:00 AM–12 Noon	M–H/S	Nob Hill A, Marriott	STEM, Literacy, and the Collaborative Classroom: Putting It All Together (p. 61)
11:00 AM–12:30 PM	K–8	130, Moscone Center	FOSS California Leadership Academy (p. 62)
11:30 AM–12 Noon	E	Golden Gate 2, Hilton	Making Sense of Science (p. 63)
12 Noon–1:30 PM	G	Yosemite A, Hilton	Chemistry, Life, the Universe, and Everything (p. 64)
12 Noon–1:30 PM	7–12	202/204, Moscone	Real-World Science: NBC/NSF Short Videos You Can Use in Your Classroom (p. 65)
12 Noon–1:30 PM	7–12	302, Moscone Center	Bridging STEM and Vernier Technology (p. 66)
12 Noon–1:30 PM	K–12	305, Moscone Center	Planet Diary: Using Current Events to Engage Your Students in Science (p. 67)
12 Noon–1:30 PM	6–8	304, Moscone Center	Hands-On Integrated Science Activities for Middle School (p. 66)
12 Noon–1:30 PM	K–5	122, Moscone Center	Don't Forget the "M" in STEM: A Focus on Inquiry in the Math Classroom (p. 64)
12 Noon–1:30 PM	K–8	308, Moscone Center	21st-Century Literacy for Budding Scientists (p. 67)
12 Noon–1:30 PM	K–12	206, Moscone Center	What's the Connection—Louisiana, Florida, Oregon, and Indiana? (p. 65)
12 Noon–1:30 PM	48	124, Moscone Center	Immersion Learning Hooks Kids On Ocean Science (p. 65)
12 Noon–1:30 PM	G	123, Moscone Center	Using Google Earth in Science (p. 65)
12 Noon–2:00 PM	G	Yosemite B, Hilton	From the Private Eye to a Magnified Mind (p. 68)
12 Noon–2:00 PM	G	Golden Gate B, Marriott	NASA AESP 50th Anniversary: Transforming Learning Through Online Resource Collaboration (p. 68)
12 Noon–3:00 PM	K–12	258/260, Moscone Center	Getting the Most Out of National Science Digital Library (NSDL) Science Literacy Maps (p. 69)
12:30–1:30 PM	E–H	113, Moscone Center	Top STEM Resources for Your Classroom (p. 72)
12:30–1:30 PM	P–E	Golden Gate 6, Hilton	Science on a Dime When You Have Little Time (p. 74)
12:30–1:30 PM	E	Golden Gate 2, Hilton	Teaching Science Concepts Through Digital Stories (p. 70)
12:30–1:30 PM	G	250, Moscone Center	Preparing Secondary Students for University Science Instruction Using Technology and Active Learning (p. 73)
12:30–1:30 PM	E–H	Golden Gate A, Marriott	Accessing and Engaging English Language Learners in the Science Classroom (p. 71)
12:30–1:30 PM	H–C	Union Square 14, Hilton	Civic Engagement and the Study of Science...Let's Bond Them Together (p. 70)
12:30–1:30 PM	G	Golden Gate 8, Hilton	Lessons Learned after Two Years of Problem Based Learning (p. 74)
12:30–1:30 PM	M–C	224/226, Moscone Center	How Do We Know? Improving Scientific Understanding Through Reading (p. 73)
12:30–1:30 PM	M	Union Square 3/4, Hilton	Expert Groups: A Pathway to Science Literacy (p. 70)
12:30–1:30 PM	E	Golden Gate 2, Hilton	Using Existing Technology to Enhance Student Learning (p. 70)
12:30–1:30 PM	E	Golden Gate 7, Hilton	Need More Time for Science? (p. 70)
12:30–1:30 PM	G	Nob Hill A, Marriott	DIY Forensics (p. 74)
12:30–1:30 PM	E–H	212, Moscone Center	Secrets of the "Dark Continent": Infusing African Studies into the K–12 Science Curriculum (p. 76)
12:30–1:30 PM	E	Golden Gate 4, Hilton	Smarter Science for Elementary School: Literacy and Numeracy in Action (p. 74)
12:30–1:30 PM	G	200, Moscone Center	Science Coaching on Demand (p. 72)
12:30–1:30 PM	S	Continental 6, Hilton	NSTA Press Session: Putting the Science into Your PLC: Tools for Professional Learning (p. 70)
12:30–1:30 PM	G	111, Moscone Center	Empowering Students to Learn (p. 75)
12:30–1:30 PM	G	Union Square 21, Hilton	ASTE Session: Inquiry About Inquiry (p. 70)
12:30–1:30 PM	G	Continental 9, Hilton	NSTA Press Session: Designing Effective Science Instruction (p. 73)
12:30–1:30 PM	M–H	228/230, Moscone Center	Scientific Literacy: More Than Just the Facts (p. 73)
12:30–1:30 PM	E–M	Yosemite C, Hilton	Interactive Whiteboards Made Easy in the Science Classroom (p. 71)
12:30–1:30 PM	M–H	Sierra E, Marriott	Mastering Science: The Power of the Formative Assessment Cycle (p. 72)
12:30–1:30 PM	G	Union Square 25, Hilton	Planning for PLC Success Using Effective Practices (p. 70)
12:30–1:30 PM	E–M	112, Moscone Center	Building a Better Student Scientist! (p. 75)
1:00–1:30 PM	P–M	Union Square 17/18, Hilt.	A Science Family Collaborative: Gathering Parents and Students Together to Experience Science (p. 76)
1:30–2:30 PM	3–12	236/238, Moscone Center	Creating Tests Can Be Easy! Let Examgen Show You How (p. 77)
1:30–3:00 PM	G	103, Moscone Center	What Goes Around, Comes Around Better (p. 78)
1:30–3:00 PM	G	104, Moscone Center	ELL Students' Access to High-Quality Science Instruction (p. 78)

Schedule at a Glance Integrated/General Science, cont.

1:30–4:00 PM	K–6	130, Moscone Center	Elementary Science Notebooks for Formative Assessment with FOSS (For Experienced Users) (p. 79)
2:00–2:30 PM	E	Golden Gate 2, Hilton	Talking Science: A Schoolwide Approach (p. 79)
2:00–3:00 PM	G	102, Moscone Center	The Common Core Standards: A Rationale for Practices (p. 79)
2:00–3:00 PM	6–12	307, Moscone Center	Project-Based Inquiry Science (PBIS) Programs: A Teacher Roundtable (p. 86)
2:00–3:00 PM	S	Union Square 23/24, Hilt.	Professional Development: Capturing the Trends, Practices, and Research to Strengthen Science Teaching and Learning (p. 85)
2:00–3:00 PM	G	Golden Gate 8, Hilton	Bringing Underwater Robotics to Your Classroom (p. 84)
2:00–3:00 PM	M–H	Sierra I, Marriott	Gross 'em Out (p. 83)
2:00–3:00 PM	G	Union Square 3/4, Hilton	The Best Science Education Articles of 2010: Research from the Affiliates (p. 80)
2:00–3:00 PM	G	208/210, Moscone Center	High School Determinants of Success in College Calculus (p. 83)
2:00–3:00 PM	G	200, Moscone Center	The Sound Museum (p. 83)
2:00–3:00 PM	G	111, Moscone Center	Urban Legends—Real? (p. 85)
2:00–3:00 PM	E	Golden Gate 7, Hilton	Supporting Elementary Students in Science Writing Using Claims, Evidence, and Reasoning (p. 84)
2:00–3:00 PM	G	112, Moscone Center	Literacy: The Core of a Science Inquiry Lesson (p. 86)
2:00–3:00 PM	H	Sierra E, Marriott	Creating Standards-based Science Lessons Inspired by Public Policy (p. 83)
2:00–3:00 PM	G	Continental 6, Hilton	NSTA Press Session: Get the FACTs: Formative Assessment Classroom Techniques (p. 80)
2:00–3:00 PM	G	212, Moscone Center	Where Do We Stand? Activities to Assess Our Own Views of the Nature of Science (p. 86)
2:00–3:00 PM	G	Union Square 14, Hilton	Professional Learning Communities: A Mentoring Support System at the Teacher Institute on Science and Sustainability (p. 80)
2:00–3:00 PM	P–M	Golden Gate 1, Hilton	The Greenhouse Effect: Hayes Cooper Style (p. 80)
2:00–3:00 PM	P–E	Golden Gate 3, Hilton	Concept Mapping with Young Learners (p. 84)
2:00–3:00 PM	G	113, Moscone Center	Sci-casting: Make Them Beg for More! (p. 83)
2:00–3:00 PM	P	Golden Gate 6, Hilton	Exuberant Exploration: Creating a Strong Preschool Science Program (p. 84)
2:00–3:00 PM	I	Nob Hill A, Marriott	Using Interdisciplinary Polar Research toward the Understanding of the Earth System and Climate (p. 85)
2:00–3:00 PM	G	Sierra H, Marriott	Data: It's Not a Four-Letter Word (p. 83)
2:00–3:00 PM	M	Union Square 19/20, Hilt.	Engaging Middle School Students in the Intermediate-Level Science Curriculum (p. 84)
2:00–3:00 PM	E–M	Union Square 21, Hilton	CESI Session: Enhance K–8 Classrooms with <i>Ready, Set, Science!</i> (p. 80)
2:00–3:00 PM	EU	Continental 9, Hilton	NSTA Press Session: <i>Developing Visual Literacy in Science, K–8</i> (p. 84)
2:00–3:00 PM	Null	Union Square 25, Hilton	Prime the Pipeline: Putting Knowledge to Work (p. 81)
2:00–3:00 PM	H	Yerba Buena 15, Marriott	NanoSize Me: Helping Students Understand Size-Dependent Properties (p. 85)
2:00–3:00 PM	E–H	Yosemite C, Hilton	Screencasting Your Classroom Lessons: It's Easy and Effective! (p. 81)
2:00–3:00 PM	G	Union Square 17/18, Hilt.	The Power of Partnership: Scientists and Teachers Enriching Science in Classrooms (p. 80)
2:00–3:30 PM	K–12	206, Moscone Center	It's How They Learn: 50 Ways to Use Discovery Education Content (p. 88)
2:00–3:30 PM	9–12	303, Moscone Center	Teaching the Digital Generation (p. 88)
2:00–3:30 PM	G	123, Moscone Center	Using Google Earth in Science (p. 87)
2:00–3:30 PM	K–12	133, Moscone Center	Work Abroad! American and International Schools—Worldwide (p. 87)
2:00–3:30 PM	K–5	308, Moscone Center	Teaching Elementary Science with a Digital Curriculum (p. 89)
2:00–3:30 PM	K–5	122, Moscone Center	Learning to Read, Reading to Learn: Literacy, Notebooks, and the Power of Inquiry! (p. 87)
2:30–3:00 PM	G	250, Moscone Center	STEM Through Culturally Based Contexts Using a Hybrid Online Environment (p. 89)
3:30–4:00 PM	M–C	Union Square 22, Hilton	Got Moodle? (p. 90)
3:30–4:00 PM	G	262, Moscone Center	ELL Strategies in an Inquiry-based Classroom (p. 90)
3:30–4:00 PM	G	200, Moscone Center	Building Standards-based Assessments and Rubrics (p. 90)
3:30–4:00 PM	G	102, Moscone Center	INSIDE AND OUTSIDE OF THE SCIENCE CLASSROOM: Exploring the Challenges of Science Education in the Next Decade (p. 90)
3:30–4:30 PM	G	208/210, Moscone Center	Inquiry-based Science and Technology Enrichment Summer Program for Middle Level Female Students (p. 94)

Schedule at a Glance Integrated/General Science, cont.

3:30–4:30 PM	G	112, Moscone Center	Textmasters: Shaking Up Textbook Reading Through Integration Across the Curriculum (p. 96)
3:30–4:30 PM	G	Union Square 17/18, Hilt.	Building Successful Partnerships with Business and Industry to Support Quality, Sustained Professional Development for K–12 Science and Math Teachers (p. 94)
3:30–4:30 PM	G	113, Moscone Center	Physics Can Be Murder! A STEM-inspired Forensics and Physics Collaboration (p. 94)
3:30–4:30 PM	P–M	Continental 7, Hilton	Teaching About Inquiry and Nature of Science in Grades K–8 (p. 95)
3:30–4:30 PM	G	Nob Hill A, Marriott	Science, Technology, and the Northern Ohio and Erie Canal (p. 95)
3:30–4:30 PM	E–M	Continental 9, Hilton	NSTA Press Session: Uncovering Student Ideas with Everyday Science Mysteries (p. 95)
3:30–4:30 PM	M–C	Golden Gate A, Marriott	Open-ended Questions Are Fine for Some Kids... but My Students Can't Do Them (p. 95)
3:30–4:30 PM	M–H/S	Sierra I, Marriott	This Is Your Brain on Inquiry (p. 94)
3:30–4:30 PM	M–C	111, Moscone Center	Active Learning in the Science Classroom (p. 96)
3:30–4:30 PM	E–M	Union Square 19/20, Hilt.	Time for 10! (p. 95)
3:30–4:30 PM	G	208/210, Moscone Center	Creating a 21st-Century Classroom; Integrating the Untold Stories of Women Scientists into the Multicultural Environment (p. 94)
3:30–4:30 PM	P	Golden Gate 3, Hilton	Notice and Wonder: An Exploration of Inquiry for Preschoolers (p. 95)
3:30–4:30 PM	E–H	Yosemite C, Hilton	Using Videoconferencing to Connect Students to Community Science: "Real" Virtual Field Trips (p. 92)
3:30–4:30 PM	M–H/I	Sierra H, Marriott	Tracking America's Ship for Ocean Exploration: The NOAA Ship <i>Okeanos Explorer</i> (p. 93)
3:30–4:30 PM	G	Continental 8, Hilton	Take the "Bored" Out of Whiteboard (p. 95)
3:30–4:30 PM	H	Sierra E, Marriott	Be Science Literate (p. 93)
3:30–4:30 PM	E/I	Golden Gate 2, Hilton	Let's Talk About It: Using Classroom Discourse to Support Scientific Understanding (p. 91)
3:30–4:30 PM	G	Union Square 25, Hilton	TOPS (Teaching Opportunities for Partners in Science) (p. 92)
3:30–4:30 PM	E–H	113, Moscone Center	Detective for a Day: The Real CSI (p. 94)
3:30–4:30 PM	G	Union Square 25, Hilton	High School Teachers Collaborate in Building a Community of Practice (p. 92)
3:30–4:30 PM	G	Union Square 3/4, Hilton	Ready, Set, SCIENCE! The Four Strands of Science Learning (p. 91)
3:30–4:30 PM	G	250, Moscone Center	Podcasting in Your Classroom (p. 94)
3:30–4:30 PM	G	Golden Gate 1, Hilton	Making Metric Memorable (p. 91)
3:30–4:30 PM	G	Golden Gate 8, Hilton	Inquiry and the English Language Learner Student (p. 91)
3:30–4:30 PM	M–H/I	Golden Gate C2, Marriott	NOAA Follow-up Session: Corals, Tech, and Carbon (p. 92)
3:30–4:30 PM	K–12	274/276, Moscone Center	Engaging Students in Science Through Interactive Teaching Tools (p. 97)
3:30–4:30 PM	G	212, Moscone Center	Bring Literacy and Science Together: "B.L.A.S.T."© for Success at School and Home (p. 96)
3:30–4:30 PM	6–8	307, Moscone Center	The Next Generation of Middle School Programs: Project-Based Inquiry Science (PBIS) (p. 97)
3:30–4:30 PM	M–H	Sierra I, Marriott	Using Multiple Intelligences to Explore Science Topics (p. 94)
3:30–5:30 PM	G	Continental Salon 2, Hilt.	NSTA ESP Symposium III (p. 98)
3:30–5:30 PM	G	Yosemite B, Hilton	Building Scientific Minds with the NSTA Alliance of Affiliates (p. 98)
4:00–5:30 PM	K–12	305, Moscone Center	Untamed Science! How to Make Your Own Science Videos from Scratch (p. 100)
4:00–5:30 PM	K–5	133, Moscone Center	Introduction to Sangari Active Science (p. 99)
4:30–5:00 PM	G	Willow, Marriott	COSEE Session: Practical Applications of the Ocean Literacy Principles Scope and Sequence (p. 101)
5:00–5:30 PM	E	Golden Gate 2, Hilton	Story Secrets: A Showcase of Women Elementary Science Teachers' Journey to Science Leadership (p. 101)
5:00–6:00 PM	E–H	113, Moscone Center	Differentiated Assessment in the Science Classroom (p. 104)
5:00–6:00 PM	H	Sierra I, Marriott	Enhancing Engineering and Technology Secondary Education Through a High School and University Partnership (p. 104)
5:00–6:00 PM	G	113, Moscone Center	Assessing Inquiry in the Science Classroom (p. 104)
5:00–6:00 PM	E–H	224/226, Moscone Center	Science Literacy: Using Examples and Nonexamples (p. 107)
5:00–6:00 PM	ES	Union Square 21, Hilton	CESI Session: Designing Effective Curriculum Guides to Improve School District Science Achievement (p. 102)
5:00–6:00 PM	M–C	Union Square 17/18, Hilt.	Science Teaching Labs: A School-University Partnership (p. 102)

Schedule at a Glance Integrated/General Science, cont.

5:00–6:00 PM	G	262, Moscone Center	Science with Seymour, Simon, Wendy and Saul: Developing the Language of Science (p. 104)
5:00–6:00 PM	E–M	Union Square 22, Hilton	Happy CSI = Creative Science Inquiry! (p. 102)
5:00–6:00 PM	M–C	Union Square 17/18, Hilt.	Gear-Up Summer Science Camps: Paving the Way for Student Success in Science (p. 102)
5:00–6:00 PM	G	250, Moscone Center	Using a Technology-enhanced Focus for Teaching and Learning Science in a Native Internet High School (p. 104)
5:00–6:00 PM	G	Nob Hill A, Marriott	Creating Effective Field Trip Experiences Through Classroom Planning (p. 106)
5:00–6:00 PM	E	Golden Gate 3, Hilton	Focused Learning at Museums and Zoos (p. 105)
5:00–6:00 PM	E–M	Golden Gate 4, Hilton	Teaching Science as an Integrated Curriculum (p. 105)
5:00–6:00 PM	E–H	Continental 7, Hilton	Students as Agents of Change: Investigating Environmental Issues (p. 105)
5:00–6:00 PM	G	200, Moscone Center	Eco-Pals for the Planet (p. 104)
5:00–6:00 PM	G	Union Square 25, Hilton	Student-centered Textbook Evaluation (p. 102)
5:00–6:00 PM	G	200, Moscone Center	The Inner Space Center: Command Center for Ocean Science Exploration (p. 104)
5:00–6:00 PM	G	Sierra J, Marriott	Mapping Inquiry in Biology and Chemistry (p. 106)
5:00–6:00 PM	M–H	Sierra E, Marriott	Science Fair Projects: The Four Types of Science Investigations for Authentic Science Research (p. 103)
5:00–6:00 PM	M–C	Golden Gate A, Marriott	Stylin' In Science: How to Involve All Learning Styles in Higher-Level Thinking Processes (p. 106)
5:00–6:00 PM	MI	Union Square 25, Hilton	Student, Peer, and Self Evaluations: How Useful Are They? (p. 102)
5:00–6:00 PM	H	Sierra I, Marriott	Teaching from the Beach (p. 104)
5:00–6:00 PM	M–H	111, Moscone Center	Forensic Science in YOUR Classroom! (p. 106)
5:00–6:00 PM	E–H	Union Square 19/20, Hilt.	The Science of Energy: Exploring Forms of Energy and Energy Transformations (p. 105)
5:00–6:00 PM	EU	228/230, Moscone Center	Assessing Inquiry Skills Using Science Notebooks (p. 104)
6:00 PM–12 Mid	G	Yosemite C, Hilton	A Video Showcase of Legendary Icons, Inspiring Teachers, Memorable Performances, and Stimulating, Engaging Courses: Part 3 (p. 108)
7:00–9:30 PM	G	Continental 4/5, Hilton	Investing in America's Future: An Astronaut's Perspective (p. 107)

Integrated/General: Sunday

8:00–9:00 AM	G	236/238, Moscone Center	Turn Chaos into Magic in the Middle School Lab (p. 114)
8:00–9:00 AM	M–H/I	121, Moscone Center	Connecting Science and Engineering to Enhance Critical-thinking and Process Skills (p. 113)
8:00–9:00 AM	G	200, Moscone Center	From the Mouths of Babes: The Benefits of Having Scientists in the Classroom as Reported by Students in Grades 4–5 (p. 111)
8:00–9:00 AM	E–H	124, Moscone Center	Looking at Student Work as a Collaborative Group (p. 113)
8:00–9:00 AM	G	113, Moscone Center	Enhancing Science Vocabulary (p. 111)
8:00–9:00 AM	G	310, Moscone Center	Informal Activities in Formal Settings (p. 113)
8:00–9:00 AM	P–E	112, Moscone Center	Advantages of Open-ended vs. Directed Activities (p. 113)
8:00–9:00 AM	H	305, Moscone Center	Astrobiology: The Search for Life Beyond Earth (p. 114)
8:00–9:00 AM	I	206, Moscone Center	National Park Preservation Interdisciplinary Project (p. 112)
8:00–9:00 AM	E–M	220/222, Moscone Center	The 5Es and ELD (p. 114)
8:00–9:00 AM	G	250, Moscone Center	Exploring the Myth of “The” Scientific Method (p. 112)
8:00–9:00 AM	G	310, Moscone Center	A Strategic Museum-High School Partnership: Moving Beyond the Field Trip (p. 113)
8:00–9:00 AM	I	212, Moscone Center	Snapshot Science (p. 112)
9:30–10:30 AM	E–M	220/222, Moscone Center	Using Notebooks to Enhance Science Skills (p. 117)
9:30–10:30 AM	M–H	121, Moscone Center	Data Analysis Power Tools for Science: Not Your Average Statistics (p. 116)
9:30–10:30 AM	G	125, Moscone Center	Roll the Dice or Call Your Shot? Stack the Deck in Your Favor for Success in STEM Education (p. 117)
9:30–10:30 AM	M–H	212, Moscone Center	The “Take Action!” Project (p. 115)
9:30–10:30 AM	G	113, Moscone Center	Building a House of Learning (p. 114)
9:30–10:30 AM	M–H	262, Moscone Center	Dissecting Text: Reading Like Scientists (p. 114)
9:30–10:30 AM	G	200, Moscone Center	Growing Students, Not Grades (p. 114)

Schedule at a Glance Integrated/General Science, cont.

9:30–10:30 AM	G	252/254, Moscone Center	The Importance of Learning Spaces in Preparing Secondary Students for University Science Instruction (Active Learning) (p. 115)
9:30–10:30 AM	G	310, Moscone Center	Creating Innovative Living Curricula Through 21st-Century Digital Textbooks (p. 116)
9:30–10:30 AM	E–H	124, Moscone Center	Supercharge Your Science Lessons: Science Discrepant Events for K–12 Teaching and Learning (p. 117)
9:30–10:30 AM	G	206, Moscone Center	Research-based Professional Development (p. 115)
9:30–10:30 AM	M–C	250, Moscone Center	A STEM Integrated Curriculum (p. 115)
9:30–10:30 AM	M–H/I	120, Moscone Center	Out-of-the-Box Innovative Science Teaching: A Holistic Approach (p. 116)
9:30–10:30 AM		112, Moscone Center	Thinking BIG, Learning BIG: Connecting Science, Math, Literacy, and Language in Early Childhood (p. 116)
11:00 AM–12 Noon	G	250, Moscone Center	ARISE (Addiction Research and Investigations for Science Educators) (p. 119)
11:00 AM–12 Noon	G	236/238, Moscone Center	What Did They Learn While They Were There? (p. 119)
11:00 AM–12 Noon	G	206, Moscone Center	Supporting Student Success (p. 118)
11:00 AM–12 Noon	M–H	120, Moscone Center	Digital Storytelling (p. 120)
11:00 AM–12 Noon	E–H	125, Moscone Center	Heliophysics: Invisible Boundaries (p. 120)
11:00 AM–12 Noon	H	224/226, Moscone Center	Rigor vs. Rhetoric: Teaching Scientific Skepticism (p. 120)
11:00 AM–12 Noon	G	200, Moscone Center	Observing for Evidence of Learning (p. 118)
11:00 AM–12 Noon	P–M	220/222, Moscone Center	The Language of Science: “I See What You Mean” (p. 120)
11:00 AM–12 Noon	G	212, Moscone Center	Practicum-based Science and Literacy Academy (p. 118)
11:00 AM–12 Noon	E–H	310, Moscone Center	Give Science a Voice! Digital Storytelling in the Science Classroom (p. 119)
11:00 AM–12 Noon	M–H	121, Moscone Center	Implementing Authentic Activities in the Science Classroom (p. 120)

Physics/Physical Science: Saturday

8:00–9:00 AM	E–M	Union Square 15/16, Hilt.	Roll Into Mathematics and Science Connections with Water Bottle Cars (p. 28)
8:00–9:00 AM	G	Nob Hill B, Marriott	Reflect on This! Light Activities That Will Ignite Students’ Inner Galileos (p. 28)
8:00–9:00 AM	G	Nob Hill C, Marriott	The Thing About Fire Is... (p. 22)
8:00–9:00 AM	E–M	Continental 6, Hilton	NSTA Press Session; Stop Faking It! Finally Understand FORCE AND MOTION So You Can Teach It (p. 26)
8:00–9:30 AM	6–8	133, Moscone Center	Middle School Physical Science: Learn Key Concepts Through Hands-On, Probeware-based Activities (p. 34)
8:00–9:30 AM	9–C	301, Moscone Center	<i>Physics with Vernier</i> (p. 35)
8:00–9:30 AM	5–12	131, Moscone Center	Real-Time Displacement, Velocity, and Acceleration Measurements with CPO’s Velocity Sensor (p. 33)
9:30–10:00 AM	M–H	Nob Hill C, Marriott	Generating Interest with Wind Energy (p. 39)
9:30–10:30 AM	P	Golden Gate 7, Hilton	Blocks Presents: Little Hands Making Big Moves in Science (p. 40)
9:30–10:30 AM	M–C	Golden Gate A, Marriott	Physics Funds Stretched? Presenting Low-Budget, High-learning Activities (p. 45)
9:30–10:30 AM	H	Pacific C, Marriott	Physics from Launch to Landing (p. 42)
9:30–10:30 AM	E–M	Union Square 15/16, Hilt.	Blinky Bots and New Age Graffiti (p. 45)
9:30–10:30 AM	H–C	Union Square 23/24, Hilt.	Quarks and the Standard Model: A Rummy-like Card Game (p. 45)
11:00 AM–12 Noon	E–M	Continental 6, Hilton	NSTA Press Session: Stop Faking It! Finally Understand LIGHT AND SOUND So You Can Teach It (p. 60)
11:00 AM–12 Noon	E–M	Union Square 15/16, Hilt.	I Am Not Afraid of Teaching Physics! (p. 60)
11:00 AM–12 Noon	H–C	Union Square 23/24, Hilt.	Ranking Tasks in Physics (p. 61)
11:00 AM–12 Noon	H	Nob Hill B, Marriott	Engaging Labs and Activities Using GarageBand (p. 61)
11:00 AM–12 Noon	M–H	Nob Hill C, Marriott	Development of Human Capital Through Students’ Involvement in Practical (Investigative) Lessons (p. 57)
11:00 AM–12 Noon	G	Nob Hill C, Marriott	Learning Physics Through Engineering: Teaching and Assessment Strategies (p. 57)
12 Noon–1:30 PM	5–C	131, Moscone Center	Optics with Light and Color: A Series of EnLIGHTening Experiments! (p. 65)
12 Noon–1:30 PM	15	309, Moscone Center	Hands-On Elementary Science with LEGO Education (p. 67)
12 Noon–1:30 PM	6–12	303, Moscone Center	The New F.A.S.T. Challenge: Teaching STEM in Partnership with NASCAR and Ten80 Education (p. 66)
12:30–1:30 PM	g1	274/276, Moscone Center	Quality Interactive Science Lessons, Part 1: What to Look For (p. 76)
12:30–1:30 PM	E–M	Union Square 15/16, Hilt.	Activities, Materials, and Resources to Teach Physical Science (p. 74)

Schedule at a Glance Physics/Physical Science, cont.

12:30–1:30 PM	H	Nob Hill C, Marriott	Physics for Everyone: Embedded Honors and Special Education Support in a Heterogeneous Physics Class (p. 71)
12:30–1:30 PM	H–C	Union Square 22, Hilton	The Amazing Analysis of Bloodstain Patterns for Physicists and Forensic Scientists (p. 74)
12:30–1:30 PM	G	Nob Hill C, Marriott	Continuing Research on the Use of Online Lab Simulations in the Physics Classroom (p. 71)
12:30–1:30 PM	H–C	Union Square 23/24, Hilt.	Newton's Second Law—With Friction (p. 74)
12:30–1:30 PM	G	Nob Hill B, Marriott	Edgy Science 4 (p. 71)
12:30–1:30 PM	E–H	Yerba Buena 15, Marriott	Drivers, Start Your Engines...The Physics of NASCAR Pasta Pods (p. 75)
2:00–3:00 PM	H	Nob Hill C, Marriott	Melding Traditional and Technology Strategies in Physics to Support Second Language Students (p. 82)
2:00–3:00 PM	E–M	Union Square 15/16, Hilt.	How Safe Is It? Engineering and Cost Considerations When Building Classroom Structures (p. 84)
2:00–3:00 PM	M–C	Nob Hill B, Marriott	Learning Physics Through Experiments: Significance of Students' Interpretation of Error (p. 81)
2:00–3:00 PM	H	228/230, Moscone Center	Slingshot Physics: Authentic Application of Work, Energy, Friction, and Newton's First Law of Motion (p. 86)
2:00–3:00 PM	G	Golden Gate A, Marriott	Science Teacher and Researcher (STAR) Program (p. 81)
2:00–3:00 PM	K–12	274/276, Moscone Center	Quality Interactive Science Lessons, Part 2: How to Create Them (p. 86)
2:00–3:30 PM	5–12	131, Moscone Center	Make Dimensional Analysis Fun with CPO Science's New Conversion Chain Cards (p. 87)
3:30–4:30 PM	M–H	232/234, Moscone Center	Now Even Middle School Students Can Learn Spectroscopy! (p. 97)
3:30–4:30 PM	P–M	Union Square 15/16, Hilt.	Keeping Things in Motion (p. 95)
3:30–4:30 PM	7–12	236/238, Moscone Center	Roller Coaster Physics: Putting Physics Principles in Action (p. 97)
3:30–4:30 PM	S	Continental 6, Hilton	NSTA Press Session: Uncovering Student Ideas in Physical Science: Force and Motion (p. 91)
3:30–4:30 PM	M–H	Nob Hill B, Marriott	A Balancing Act: Mechanical Advantage Your Students Can Physically Engage In (p. 92)
3:30–4:30 PM	M–H	Nob Hill C, Marriott	Tesla Tales (p. 92)
3:30–4:30 PM	M–H/I	Willow, Marriott	COSEE Session: Linking Physical Science and the Ocean (p. 96)
3:30–4:30 PM	I	Pacific J, Marriott	Can Wind Power Your Classroom? (p. 93)
4:00–5:30 PM	9–C	270/272, Moscone Center	Put Me in Coach! The Physics of Baseball (p. 100)
5:00–6:00 PM	E–M	Union Square 15/16, Hilt.	Learning Sound by Building Musical Instruments (p. 105)
5:00–6:00 PM	H–C	Union Square 23/24, Hilt.	The Physics of Supernovae (p. 106)
5:00–6:00 PM	P–E	Golden Gate 6, Hilton	The Energy Circus: Exploring Gravity in Grades K–1 (p. 105)

Physics/Physical Science: Sunday

8:00–9:00 AM	M–H	130, Moscone Center	Rapid Data Collection and Analysis in the Science Classroom (p. 113)
8:00–9:00 AM	E	114, Moscone Center	Amazing Aircraft (p. 113)
9:30–10:30 AM	M–H	130, Moscone Center	Electro Luminescence: Light Imitating Art (p. 117)
11:00 AM–12 Noon	G	130, Moscone Center	How Do You Engage Minority Families in Science Education? (p. 118)
11:00 AM–12 Noon	E	111, Moscone Center	Flutter and Float (p. 120)

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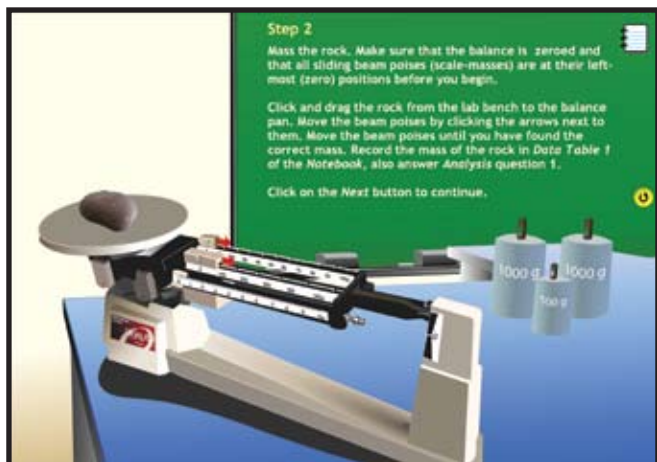
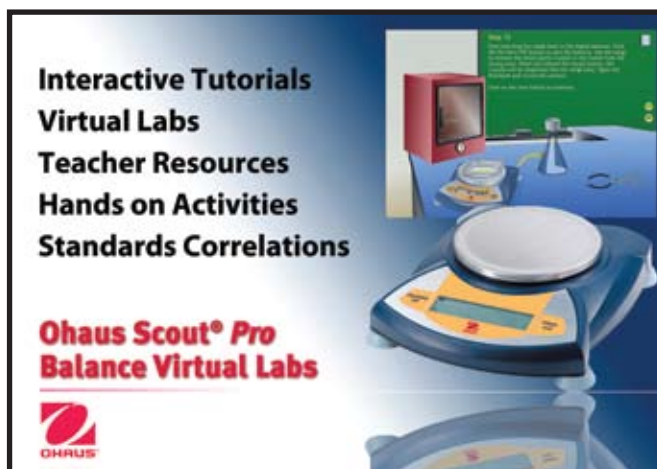
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